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M.B.A. (INTERNATIONAL AGRIBUSINESS)

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McCAIN'S GOOD AGRICULTURAL PRACTICES AND THEIR DOCUMENTATION IN SELECTED VILLAGES OF MEHSANA AND BANASKANTHA

By

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JUNE-2017

**McCain's GOOD AGRICULTURAL PRACTICES AND THEIR
DOCUMENTATION IN SELECTED VILLAGES OF MEHSANA
AND BANASKANTHA**

A PROJECT REPORT

Submitted by

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In partial fulfilment for the award of the degree

Of

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UNDER THE GUIDENCE

OF

**Dr. Snehal Mishra
(Assistant Professor)**



INTERNATIONAL AGRI-BUSINESS MANAGEMENT INSTITUTE

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CERTIFICATE

This is to certify that the project report entitled **“McCAIN’S GOOD AGRICULTURAL PRACTICES AND THEIR DOCUMENTATION IN SELECTED VILLAGES OF MEHSANA AND BANASKANTHA”** of M.B.A. (International Agribusiness) embodies research work carried out by **MAYUR S. SOLANKI** under my guidance and supervision, and that no part of this project work has been submitted for any other degree. The assistance, guidance, and help received during the course of investigation have been fully acknowledged.

Place: IABMI, Anand

(Dr. Snehal Mishra)

Date:

Advisor

DECLARATION

I hereby declare that the project entitled **“McCAIN’S GOOD AGRICULTURAL PRACTICES AND THEIR DOCUMENTATION IN SELECTED VILLAGES OF MEHSANA AND BANASKANTHA”** submitted for the M.B.A. (International Agribusiness) degree is my original work and this has not formed the basis for the award of any degree, associate ship or other similar titles.

Place: IABMI, Anand

Name: MAYUR S. SOLANKI

Date:

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ABSTRACT

Good Agricultural Practices, or GAP, are production and farm level approaches to ensure the safety of fresh produce for human consumption. GAP protocols were developed in response to the increase in the number of outbreaks of food borne diseases resulting from contaminated fresh produce. These incidences have doubled in the U.S. since 1987. While most consumers associate food-borne diseases with improperly stored or poorly cooked animal products, it is clear that contaminated fruits and vegetables can also present a risk. One intervention to help improve potato yield is adoption of Good Agricultural Practices (GAP). However, little information exists about farmers' awareness of GAP and its application under farmer circumstances.

Good Agricultural Practices are a set of requirements to apply for on-farm production and post-production processes, resulting in safe production of food by ensuring sustainable and commercial viability of Agricultural production and environmental protection.

GAP may be applied to a wide range of farming systems and at different scales. They are applied through sustainable agricultural methods, such as integrated pest management, integrated fertilizer management etc. They rely on four principles: Economically and efficiently produce sufficient safe and nutritious food, Sustain and enhance natural

resources, Maintain viable farming enterprises and contribute to sustainable livelihoods, Meet cultural and social demands of society, Sustain Environmental protection.

GAP principles can be summarized as follows: clean soil, clean water, clean hands, and clean Surfaces. These principles must be applied to all phases of production (field selection, pre plant field preparations, production, harvest, and post-harvest) to be effective. GAP is focused on the prevention of contamination rather than attempting to remedy it after the fact.

The aim of the study was to formulate strategy that can reduce the risk of contamination through prevention and to find out the awareness level and adoption level about the GAP by the farmers. GAP provides simple steps that fruit and vegetable growers can implement to greatly reduce the possibility of contamination on the farm. Growers who ensure the availability of safe produce, will have a marketing edge. GAP is one of the ways to help maintain the trust that currently exists between local growers, markets, and the consumer.

The study was to identify the GAP of current agriculture practices followed by the McCain's contractual farmers, to document the GAP followed by McCain's contractual farmers and to study the socio-economic profile of contractual farmers engaged with McCain's.

Mehsana and Banaskantha districts of Gujarat state were selected for the study. From both the districts 25 farmers were selected who were already engaged with McCain. The major crops grown in Mehsana districts are Potato, Cotton, Tobacco, Oilseeds, Castor Seeds, Cumin, Psyllium and Anise. The major crops grown in Banaskantha districts are Bajri, Maize, Tobacco, Castor oil, Jowar, Psyllium and Potatoes.

Banaskantha districts contribute significantly to agricultural production of the state and ranks No. 1 in the production of potatoes in India.

It was found that an appreciable number of farmers adhere fully to the Good Agricultural Practices. There are many farmers who are still not aware of GAP and related guidelines. The company needs to pitch in more efforts to acquaint the farming community about the GAP and its usefulness which will ultimately lead to improve the number of farmers following GAP for sustainable & economic productivity. There seems certainly scope and opportunity for the GAP adoption in near future provided efforts in this regards are consistent, timely and efficient.

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LIST OF ABBREVIATIONS

GAP	Good Agricultural Practices
WTO	World Trade Organization
USDA	United States Department of Agriculture
FDA	United States Food & Drug Administration
HACCP	Hazard Analysis & Critical Control Point
NGO	Non Government Organization
IPM	Integrated Pest Management
FAO	Food & Agriculture Organization
GM	Genetic Modify
DSS	Decision Support System
MT	Metric Tonnes
mm	Millimetre
Sq. km	Square kilometre
%	Percentage

1. INTRODUCTION

Agriculture is the mainstay of Indian economy. India's basic strength lies in agriculture. But its vast potential has not been fully exploited. While World Trade Organization (WTO) poses some challenges, it also offers tremendous worldwide market opportunities for Indian agriculture produce.

This market potential can be realized by reforming agriculture and making its produce internationally competitive in quality and food safety. To enable farm produce to be internationally competitive, innovative farming practices incorporating the concept of globally accepted Good Agricultural Practices (GAP) within the framework of commercial agricultural production for long term improvement and sustainability is essential.

1.1 GOOD AGRICULTURAL PRACTICES

Good Agricultural Practices are a set of requirements to apply for on-farm production and post-production processes, resulting in safe production of food by ensuring sustainable and commercial viability of Agricultural production and environmental protection.

GAPs may be applied to a wide range of farming systems and at different scales. They are applied through sustainable agricultural methods, such as integrated pest management, integrated fertilizer management etc. They rely on five principles:

-) Economically and efficiently produce sufficient safe and nutritious food
-) Sustain and enhance natural resources;
-) Maintain viable farming enterprises and contribute to sustainable livelihoods;
-) Meet cultural and social demands of society.
-) Sustain Environmental protection

1.2 GLOBAL GAP

The Global GAP standard is primarily designed to reassure consumers about how food is produced on the farm by minimizing detrimental environmental impacts of farming operations, reducing the use of chemical inputs and ensuring a responsible approach to workers health and safety.

Global GAP serves as a practical manual for Good Agricultural Practice (GAP) anywhere in the world. With the increasing awareness amongst the consumers about food safety and quality, it has been found necessary to implement Global GAP you can find more information in the presentation.

Global GAP was setup initially by European Retailers and other stake holders as voluntarily standard for the certification of production processes of Agricultural products around the globe. There are about 1, 02,267 Global GAP certificates issued around the world as of April 2010 as against only 1989 in India.

1.2.1 What is GAP?

Good Agricultural Practices, or GAP, are production and farm level approaches to ensure the safety of fresh produce for human consumption. GAP production and post-harvest guidelines are designed to reduce the risk of food borne disease contamination on fresh produce. These voluntary procedures can be tailored to any production system. GAP recommendations are directed toward the primary sources of contamination: soil, water, hands, and surfaces.

1.2.2 Why is GAP Needed?

GAP protocols were developed in response to the increase in the number of outbreaks of food borne diseases resulting from contaminated fresh produce. These incidences have doubled in the U.S. since 1987. While most consumers associate food-borne diseases with improperly stored or poorly cooked animal products, it is clear that contaminated fruits and vegetables can also present a risk. Produce can become contaminated by any of a number of microbes (bacteria, viruses, parasites, or fungi) at any stage of production, processing, packaging, or marketing. While the cooking process would normally kill these micro-organisms, fresh produce is often consumed raw and thus, at risk. Research shows that the detection of residual pathogens prior to marketing is extremely difficult. Similarly, it is very hard to sanitize harvested produce so that it is completely free of harmful micro-organisms. The most effective strategy for reducing the risk of contamination is through prevention. GAP provides simple steps that fruit and vegetable growers can implement to greatly reduce the potential for contamination on the farm. Consumer and retail concerns are understandable when these illnesses make front page news. Tainted foods are bad for business, both for the producer and for the marketer. Not only can serious immediate financial losses result, but contaminated foods also hurt consumer confidence in the long run. Growers who are able to provide assurances that their products are safe will have a marketing advantage.

1.2.3 What are the Basics of GAP?

GAP principles can be summarized as follows: clean soil, clean water, clean hands, and clean Surfaces. These principles must be applied to all phases of production (field

selection, pre plant field preparations, production, harvest, and post-harvest) to be effective. GAP is focused on the prevention of contamination rather than attempting to remedy it after the fact.

“Clean soil” involves taking steps to reduce the possibility of introducing microbial contaminants into the soil, particularly via manure and other animal excrements. GAP addresses proper manure management with attention to composting, storage, and proper application timing. Additionally, due to the fact that many contaminants can be spread through animal feces, specific steps must be followed to minimize the presence of animals, both domestic and wild, in production fields and packing areas.

“Clean water” entails making sure all water used in washing, cooling, and processing is of drinkable quality, i.e. potable. Likewise, packing ice should also be made from potable water. Water is established as “potable” through testing and not merely based on a history of use. Ground and surface water sources need to be protected from run-off and animal contamination by buffer areas and fencing as needed. Water used for irrigation and foliar applications must also be tested to establish adherence to minimum quality levels. **“Clean hands”** applies to workers and the use of good personal hygiene in the field and packing house. Providing washing facilities for customers at U-Pick operations is also an important consideration.

“Clean surfaces” means ensuring that all packing bins, work surfaces, storage areas, and transportation vehicles are properly washed and sanitized on a regular basis. Farms with both animal and produce operations must pay special attention to equipment shared between the operations and take specific steps to prevent contamination. Compliance with GAP protocols can only be established through accurate recordkeeping. Record keeping is critical to enable the traceability or trace back function of GAP which makes it possible to follow a farm product as it is dispersed through the supply chain. If food-borne illnesses do occur, the contamination can then be traced to specific products, distributors, or farmers. This means that recalls can be specific, rather than general blanket programs that can disrupt entire commodities needlessly. Recordkeeping also helps growers establish that they executed due diligence in their production in the unlikely event that an outbreak is traced to their farm.

1.3 DISTRICTS PROFILE:

1.3.1 Mehsana District Profile:

Mehsana district is located in North Gujarat, about 75 km from Ahmedabad. The district borders with Banaskantha district in the north, Patan and Surendranagar districts in the

west, Gandhinagar and Ahmedabad districts in the south and Sabarkantha district in the east. Mehsana is divided into nine talukas. Mehsana, Kadi, Visnagar, Vijapur and Becharaji are the developed talukas of the district. The major crops of Mehsana are Potato, Cotton, Tobacco, Oilseeds, Castor Seeds, Cumin, Psyllium and Anise. Asia's second largest dairy 'Dudhsagar Milk Cooperative Dairy' and largest market yard 'Unjha' is located in Mehsana.

Major crops of Mehsana are Wheat, Cotton, Castor Seeds, Brinjal, Potatoes, Tomatoes, Okra, Mango, Citrus, Sapota, Fennel seed, Psyllium and Cumin. In 2006-07, Mehsana produced 1.37 lakh Metric Tonnes (MT) of Fruits, 2.37 lakh MT of Vegetables and 4.65 lakh MT of Spices. Mehsana is the **largest producer of lemon in Gujarat** contributing 24% to total production of the State. The district is the **third largest producer of tomatoes** with 9% share in total vegetable production of the State. Other major vegetables include Potatoes, Cluster bean, Okra and Brinjal. Mehsana is the **largest producer of Fennel seed** with 36% contribution in total Spice production of the State. Cumin seed is other major crop of the district.

Geographical location	72.07° to 72.26° East (Longitude)
	23.15° to 23.53° North (Latitude)
Temperature	45° Centigrade (Maximum)
	15° Centigrade (Minimum)
Average Rainfall	600 mm
Area	4,393 sq. km
District Headquarter	Mehsana
Talukas	9
Population	18,37,696 (As per 2001 Census)
Population Density	419 persons per sq. km
Literacy Rate	72.57%
Seismic Zone	Zone III

Source: Mehsana District Profile Booklet, 2006-07

1.3.2 Banaskantha District Profile:

Banaskantha is the third largest district of Gujarat and is located in North eastern region of the State. The region is presumably named after the West Banas River and shares its border with the neighbouring State of Rajasthan. There are 11 talukas in the district with

Palanpur (District Headquarter), Deesa, Danta and Amirgarh being the important and developed talukas of the district. Banaskantha contributes significantly to Agricultural production of the State and ranks No. 1 in the production of potatoes in India. The district is also known for its diamond and ceramic industry. The proposed Palanpur-Mehsana Investment Region along the Delhi-Mumbai Industrial Corridor (DMIC) is expected to drive the economic growth of the district.

Focus Industry Sectors

Food Processing, Tourism, Mineral Based Industries (Ceramic Industry)

Agriculture

Bajra, Maize, Tobacco, Castor oil, Jowar, Psyllium and Potatoes are the other major crops of

the district. Deesa Taluka in the Banaskantha district ranks 1st in India for the production of Potatoes. The district ranks next to Junagadh and Rajkot in the production of Spices.

Geographical Location	Longitude: 71.03^O to 73.02^O East
	Latitude: 23.33^O to 24.25^O North
Temperature	45^O Centigrade (Maximum)
	5^O Centigrade (Minimum)
Average Rainfall	1550 mm
Area	10,400.16 Sq. Km
Talukas	12
Population	2.50 Million (As per Census 2001)
Population Density	233 Persons per sq. km
Literacy Rate	51%
Seismic Zone	Zone IV

Source: Banaskantha District Profile Booklet 2006-2007

1.4 COMPANY PROFILE

McCain Foods Ltd. is the world's largest producer of French Fries and Potato Specialities. Located in Florenceville, New Brunswick, Canada, McCain has grown to become a global leader in the frozen food industry. From Canada, across the world to Japan, from

the tip of Argentina to suburbs in Australia, our tasty and convenient food products are served in restaurants and sold in retail stores; adding nutrition and flavour to family meals time after time.

McCain Foods (India) is a wholly-owned subsidiary of McCain Foods Limited in Canada. Since 1998, McCain has been engaged in agriculture R&D and in development of frozen food market in India and subcontinent countries. McCain products are used by leading fast food chains, hotels, restaurants, catering companies and are popular for in-home consumption.

At McCain, it's our constant endeavour to create good food that is delightfully fresh. In order to maintain an impeccable standard of quality, we strive to use the highest quality ingredients. Our products are prepared simply with wholesome ingredients made by good people who care about delivering quality in every box, every bag and every bite.

McCain focuses on providing great variety to customers and consumers. A delectable range of products is available, world favourites like McCain French Fries, McCain Smiles and local delights such as McCain AlooTikki, IdliSambar Combo and real cheese appetizers like McCain Cheese & Jalapeno Nuggets and Potato Cheese Shotz.

-) Global sales of over \$6 billion.
 -) Products marketed in 160 countries world over.
 -) One in every three French fries around the world is a McCain fry.
 -) 50 manufacturing facilities around the world.
 -) World class potato processing plant in Mehsana district of Gujarat.
-

1.4.1 Company Products



1.5 OBJECTIVE OF STUDY:

1. To identify the GAP of current agriculture practices followed by the McCain's contractual farmers
2. To document the GAP followed by McCain's contractual farmers
3. To study the socio-economic profile of contractual farmers engaged with McCain's

2. REVIEW LITERATURE

Reyes and Evans (2002) reported that a brief overview of the concept of GAPs and highlight some of the potential consequences of not instituting GAP guidelines into a farm's operation. Good agricultural practices (GAPs) at the farm level involve multi-faceted efforts at ensuring that foods are safe for human consumption. Food safety has become a serious issue in our society because of pathogens and food contamination. The United States Department of Agriculture (USDA) and the United States Food and Drug Administration (FDA) are responsible for recalling contaminated foods, but because food can become contaminated at all levels of the food production system, it is essential to keep food safe through GAPs. Failure to institute a GAP program allows the risk of contaminated food products in the production process. Well-managed GAPs have proven effective in reducing the risks of food contamination in agricultural production.

Ellis (2004) found that the GAPs set of recommendations to improve the quality and safety of agricultural products. These general guidelines can be used in any production system. GAPs focus on four primary components of production and processing: soil, water, hands, and surfaces. A GAP document specifically details the farm components that are being targeted for a GAP program.

Balasubramanian, et al., (2007) studied that the concept of GAP is not new in rice production. In Southeast Asia, farmers in Thailand and Vietnam are already exploring GAP for rice and research is being done to facilitate diffusion and adoption of these practices (IRRI, 2009). However, appropriate cultivation practices which are widely used in Asia are not commonly applied in SSA which is something that has been largely ignored.

Giller, et al., (2010) studied that for a GAP approach to succeed, it must meet the demands of agro ecological as well as socio-economic circumstances. Use of GAP increases the chances that farmers have higher profits and healthier harvests (IRRI, 2010). Increase in productivity can be achieved by better agronomic management such as more timely planting and weeding which increase the efficiency with which available nutrients, water and labor are used. Thus, through use of GAP, farmers can improve rice production

which will eventually improve their income since they depend on such crops for consumption as well as income generation. Which is of greater benefit to women (IRRI, 2009). In this case, GAP can help rice farmers produce more with the limited resources. Thus, adoption of GAP in rice production is likely to help lift farmers and their communities from hunger and poverty.

Glover (2010) reported the factors such as finance and time, influence farmers to try new technologies, especially if such considerations involve external inputs that are expensive or difficult to obtain. These factors may limit farmers' adoption of GAP. For instance, recent studies in Madagascar have shown slow adoption of SRI and high dis-adoption rates (40 percent), mainly because the method requires additional knowledge and is labor intensive. In this regard therefore, it is important to ensure that the gains from the use of GAP outweigh the increases in costs so as to make GAP attractive to farmers.

Noltze, et al., (2012) studied the Good Agricultural Practices and System of Rice Intensification can be understood as system technologies defined as an integrated innovation to improve agricultural productivity and agro ecosystem resilience, involving different agronomic and management components with synergistic relationships.

Chander(2013) studied on Role of good agricultural practice in safe vegetables farming. Good Agricultural Practices (GAP) is a food safety management program or pre requisite programs for hazard analysis and critical control point (HACCP). The purpose of GAP is to give logical guidance for vegetable grovers to minimize food hazards risk and ensuring safety and quality of fresh vegetables in the food chain and increase the consumer satisfaction. Records documentation are necessary for GAP. It should be ensure that all vegetables grovers follow the same globalized standards for fresh vegetables production and their retailing. GAP contributes to meeting national & international environment & social development objectives. Worker health and hygiene with good sanitation practices are also the important issue of GAP.

Mkanthama (2013) studied was conducted in 2012 growing season at Bagamoyo and Dakawa. The objectives of the study were to establish differences between constrained and unconstrained farmers' choices of rice production management practices, assess whether training on GAP affects farmers' choices of rice production management

practices and to identify factors that influence farmers' adoption of GAP in rice production. Findings from the study have shown that farmers in Bagamoyo are already aware of improved practices of nutrient management, seed establishment method and weed management method. Farmers in Bagamoyo actually used improved practices that they had indicated they would use in establishment method and nutrient management in 2012. However, these farmers did not use improved practices in weed management despite the awareness.

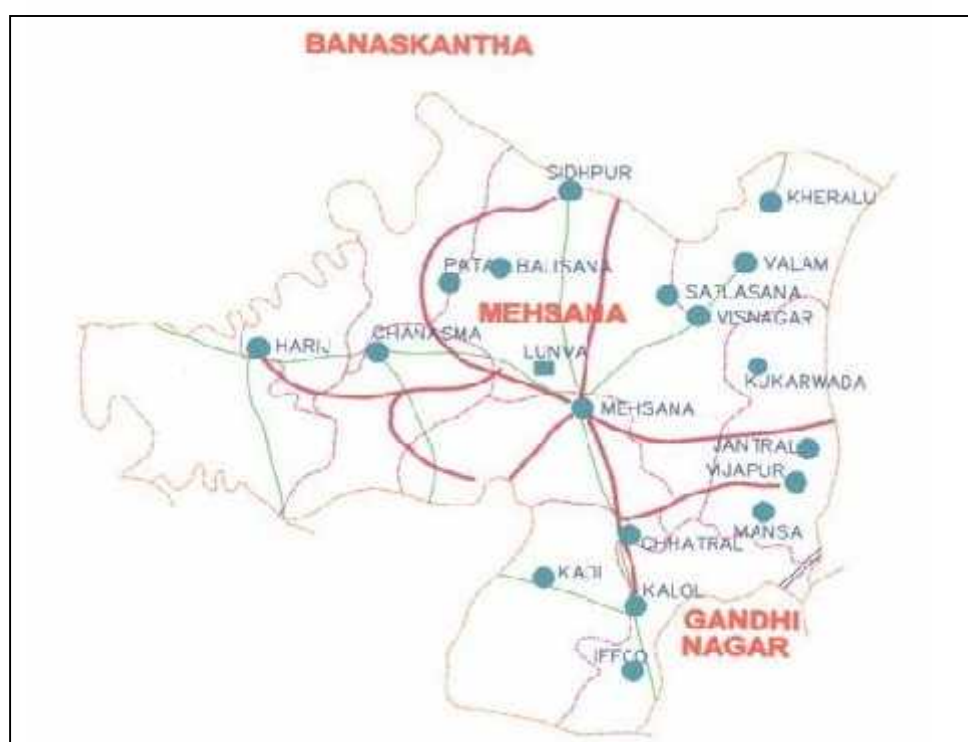
Vaughan (2014) studied that examined methods used in a food safety/Good Agricultural Practices (GAPs) Educational program with small and limited resource produce farmers in Alabama to assist them with obtaining certification. Two methods were used, namely, the identification of challenges to food safety certification and development of strategies to address the challenges, and the enlistment of educational methods to facilitate food safety certification. As a result, there were four challenges to food safety certification identified; needs for motivation, information, clarification, and resources. In addition, the educational methods enlisted included group meetings, instructional material distribution, individual farm instruction, and expert instruction. The program was found to be limitedly successful, producing ten GAPs certified operations; further evaluation of the methods is needed.

3. RESEARCH METHODOLOGY

In the process of achieving the objectives of the study, it is very essential to follow a systematic and scientific approach so as to present and interpret the results of the study or investigation conducted. This methodology consists of the details of the description of the study area, the sampling procedures, nature and sources of data, the analytical tools and techniques employed and other information to support the existing results.

3.1 AREA OF STUDY

The Mehsana and Banaskantha districts of Gujarat state were taken up for the study. In these districts, a large area is under potato, cotton and castor etc crops.



Territory	Village	No. of sample
Mehsana	ShahupuraKamla	1
	Thumthal	2
	Kheralu	1
	Khatoda	1
Vadgam	Dhanpura	3
	Mervada	2
	Pilucha	3
	Adrana	1
	Sardarpura	1
Amirgadh	Jethi	2
	Iqbalgadh	2
	Sarotra farm	1
	Kaledi farm	2
	Umiya farm	1
	Avala	1
	Rampura-Vadala	1

3.2 SOURCE OF THE DATA

Primary as well as secondary data was collected to meet the stipulated objectives of the study.

3.2.1 Primary Data:

Primary data was collected from the Farmer with the help of structured schedule.

3.2.2 Secondary Data:

Secondary data was collected from Literature, Private and Government publications and Websites.

3.3 RESEARCH DESIGN

Type of research	Descriptive research
Sampling method	Non probability sampling
Sampling technique	Judgemental sampling
Sample unit	Contractual farmers of McCain's
Sample size	25
Sample area	Selected farmers in the Mehsana, Banaskantha districts.
Timing of survey	70 days
Research instrument	Considering the nature of the study as well as for obtaining authentic information from the respondents, information will be collected through schedule (semi structured schedule).
Analytical tool	Tabular Analysis, Charts and Graphical Presentation

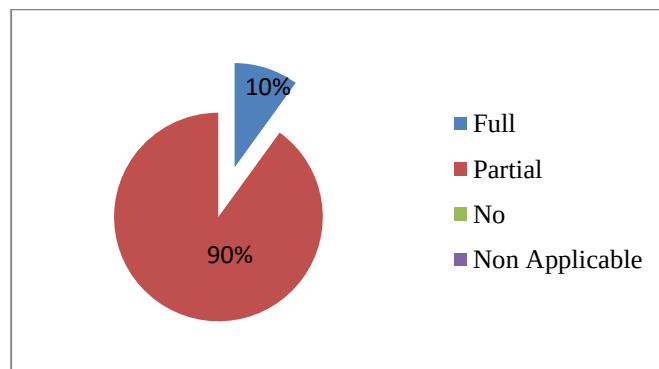
4. RESULTS AND DISCUSSION

OBJECTIVE: 1 To identify the GAP analysis of current agriculture practices followed by the McCain's contractual farmers

1. STAFF

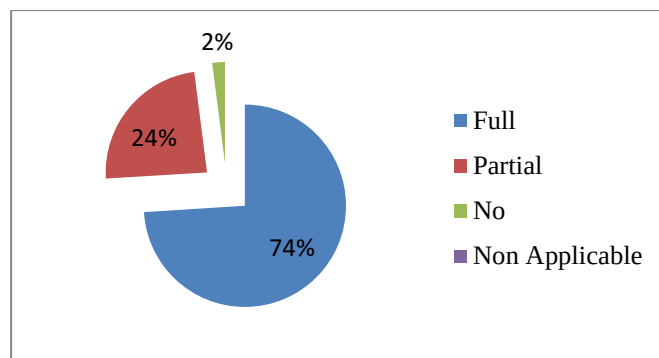
1.1 HEALTH & SAFETY

A first aid box must be present and properly equipped on all producer holdings and be available for staff use.



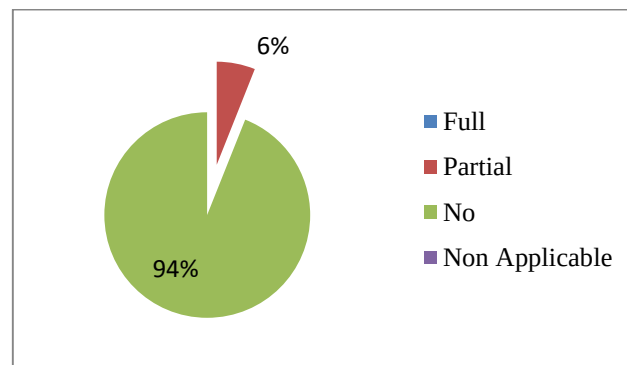
It has been observed that 90 percent farmers were not having well equipped First aid box on land but had some medicines for use. 10 percent farmers had well equipped first aid box on their land.

1.2 Workers who handle pesticides must be equipped with suitable protective clothing in accordance with any label instructions and any health and safety risks. Growers must be able to demonstrate compliance with label instruction.



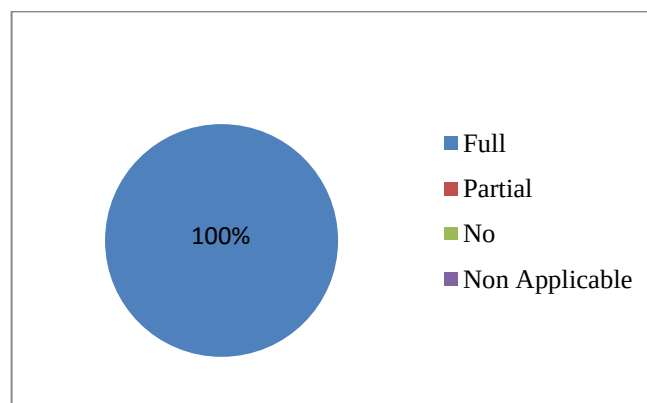
It has been observed that 74 percent farmer's labour used protective cloths for health safety while handling pesticides and grower comply with label instruction properly. 24 percent farmer's land workers used only few things to protect their health and 2 percent farmer's land workers did not use any kind of protective cloths.

1.3 Does the Farm have a written risk assessment for safe and healthy working conditions?



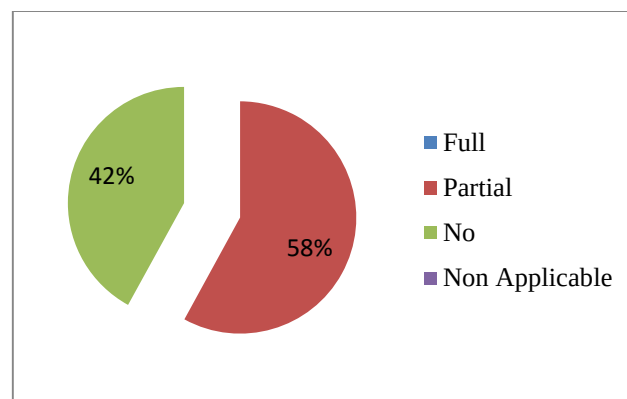
It has been observed that 94 percent farmer's farm has no such kind of written risk assessment for safe and healthy working conditions. 6 percent farmer's land have some written risk assessment for safe and healthy working conditions.

1.4 General warning signs must be placed on access doors to the pesticide store.



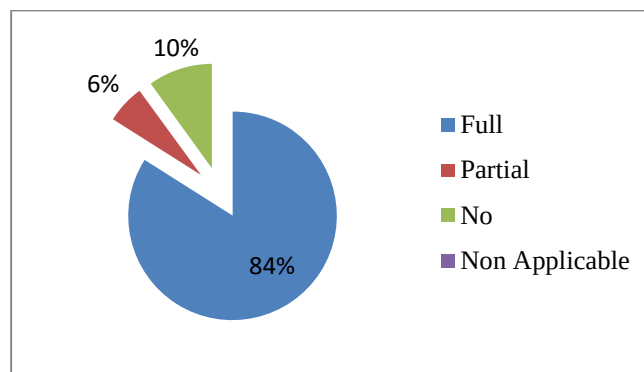
All the farmers farm general warning signs were placed on access doorsto the pesticide store.

1.5 Emergency first aid facilities , e.g. eye wash, running water, first aid box must be available in the event of operator contamination.?



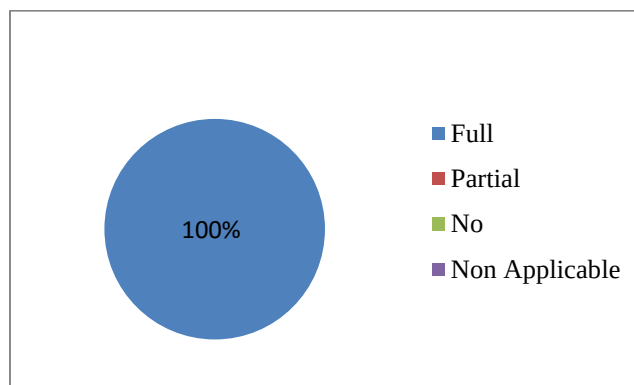
It has been observed that 58 percent farmer's have some emergency first aid facilities on the land and 42 percent farmers did not have any kind of emergency facilities on their land.

1.6 Protective clothing and equipment must be stored separately from pesticides and from food, feed, living quarters and food preparation and consumption areas?



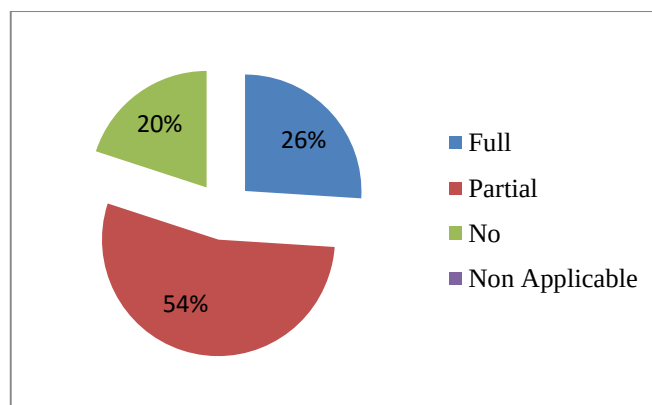
It has been observed that 84 percent growers were storing the protective cloths purely separated from pesticides and from food, feed, living quarters and food preparation and consumption areas. 6 percent growers were storing protective cloths at some level and 10 percent were not at all storing any kind of cloths separated from pesticides and from food, feed, living quarters and food preparation and consumption areas.

1.7 Producers must implement and comply with all applicable local or regional worker health and safety regulations.?



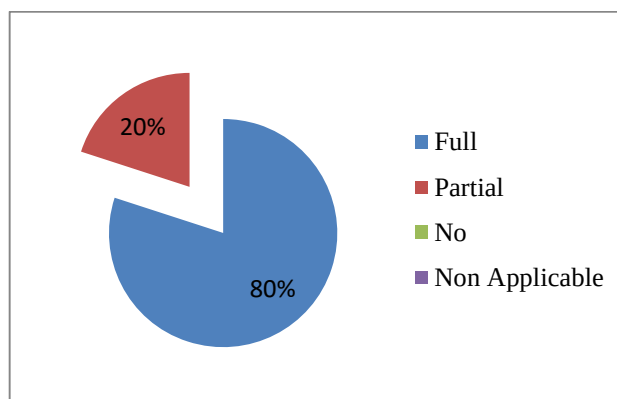
All the farmers were implementing and comply with all applicable local or regional worker health and safety regulations.

1.8 All mechanical equipment for the purpose of unloading/transfer/and storage of the crop is properly maintained to manufacturers' standards?



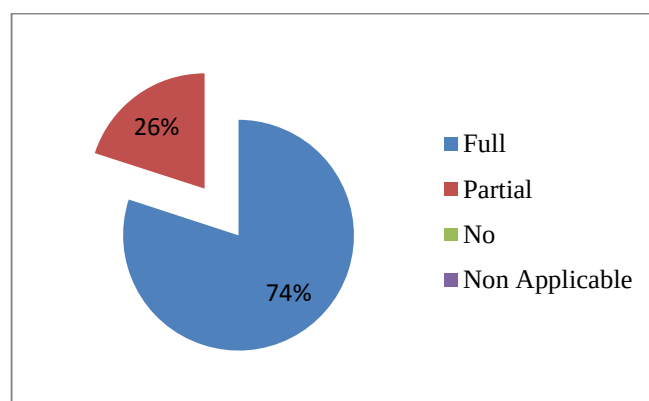
It has been observed that 54 percent farmers were partially maintaining mechanical equipment to manufacturer's standard. 26 percent farmers were fully maintaining and other 20 percent farmers were not at all maintaining.

1.9 Access to and within the building provides easy and safe passage.



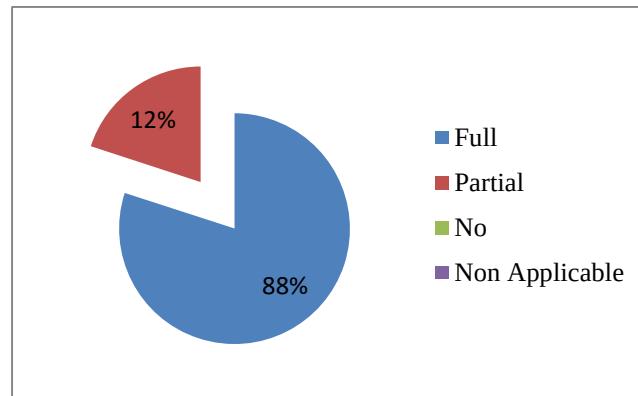
It has been observed that 80 percent farmer's buildings had easy and safe passage to access to and within the building.

1.10 Air quality is adequate to allow access to the storage.



It was observed that in the case of 74 percent farmers good air quality was present due to the presence of proper ventilation outlets whereas in case of 26 percent farmers the quality of air was partially good.

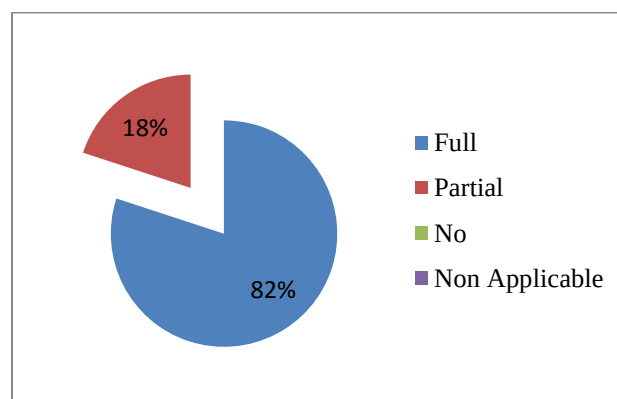
1.11 Are on site living quarters habitable and have the basic services and facilities?



It was observed that 88 percent farmers' living quarters were habitable and had the basic services and facilities for workers. 12 percent farmers have it at partial level.

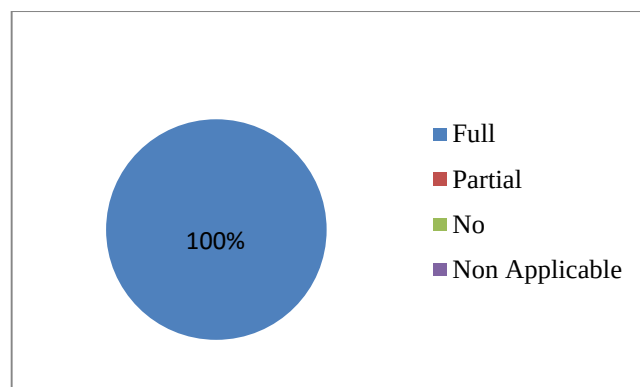
1.2 TRAINING

1.2.1 Whether Producers are able to ensure that person dealing with pollution risk operation has the relevant training?



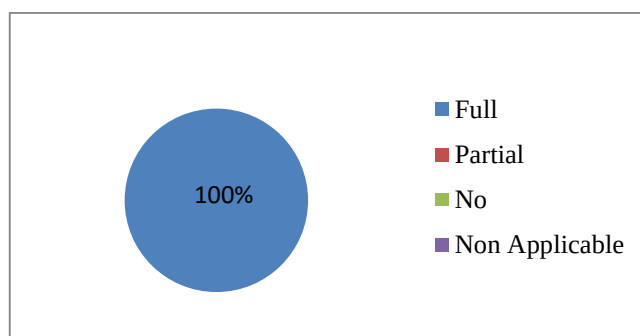
It has been observed that 82 percent producers were able to ensure that person dealing with pollution risk operation has the relevant training and 18 percent producers were following at partial level.

1.2.2 Whether those Persons making decisions on the use of pesticides (external or in house) have the relevant training and Certificate?



All the farmers persons making decisions on the use of pesticides (external or in house) have the relevant training and Certificate.

1.2.3 Workers who handle and apply pesticides (spraying and granule application) must be trained or be able to demonstrate competence and knowledge in correct pesticide handling.

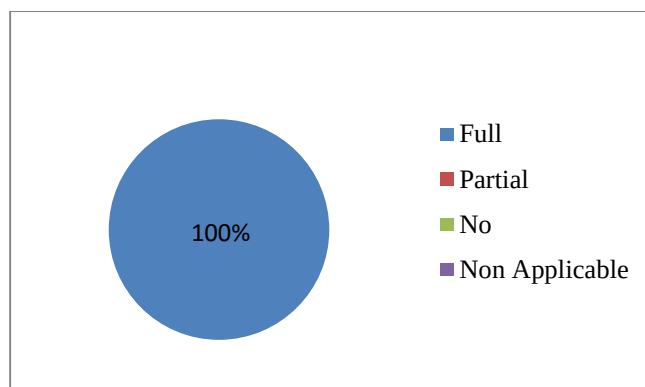


All the farmers workers who handle and apply pesticides (spraying and granule application) were trained or be able to demonstrate competence and knowledge in correct pesticide handling.

1.2.4 Have all workers received adequate health and safety training and are they instructed according to the risk assessment?

Not Applicable

1.2.5 Whether External advice, training, technologies and human resource management regularly sought?

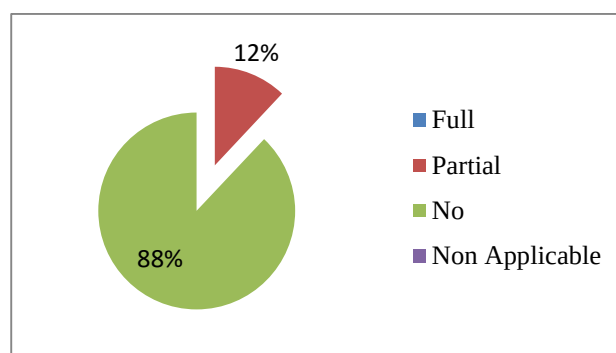


All the farmers external advice, training, technologies and human resource management are regularly sought by the farmers.

1.3 EMERGENCY ACTION PLAN

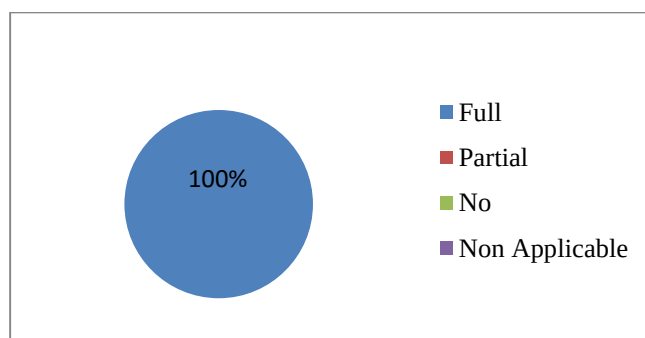
1.3.1 Whether Farm have plan in place to deal with emergencies in the case of:

1) Accident 2) fire 3) Flood 4) Chemical or effluent spillage 5) Freezing 6) failure of water supply 7) Power failure



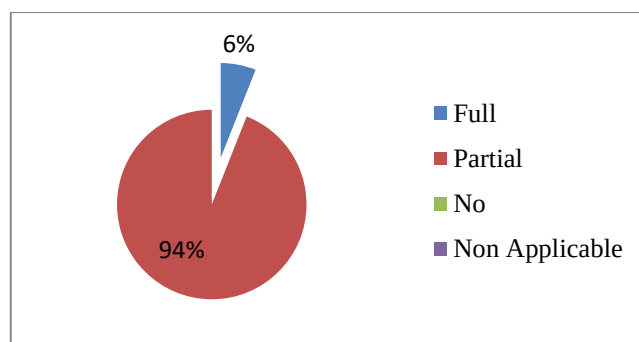
It has been observed that 88 percent farmers farm do not have not any kind of emergency plan but 12 percent farmers have facilities to cover the emergency situation at partial level.

1.3.2 Is list of emergency telephone numbers available at producers farm?



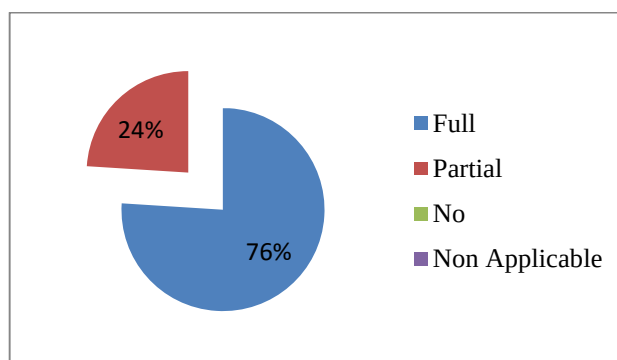
All the farmers farmlist of emergency telephone numbers was available at producer's farm.

1.3.3 Is list of emergency telephone numbers available at near Telephonic point?



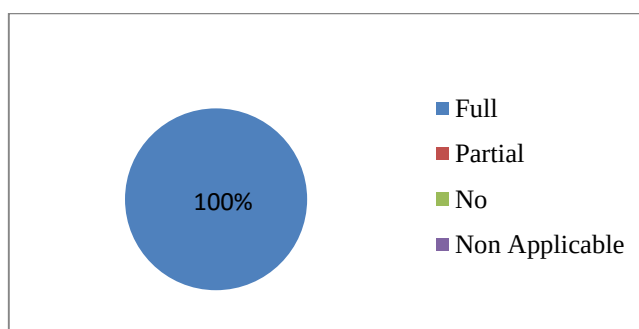
It has been observed that 94 percent farmers farm do not have availability list of emergency telephone numbers at near Telephonic point. Only 6 percent farmers have it.

1.3.4 Fire prevention precautions must include; restricted access to buildings; routine machinery maintenance; safe use and storage of flammable materials; escape routes and passageways kept free at all times?



It has been observed that 76 percent farmers have fire prevention precautions as per the situation. 24 percent farmers have it at partial level.

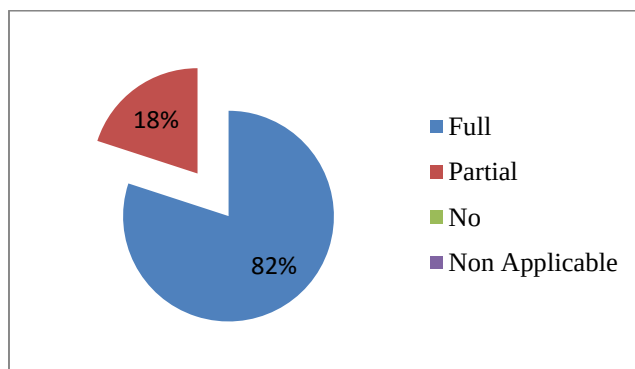
1.3.5 Smoking inside any storage facilities used for produce or chemicals is not permitted?



All the farmers farmsmoking inside any storage facilities used for produce or chemicals is not permitted.

1.4 CHILD LABOUR

1.4.1 Do you prohibit employing children less than 15 years (other than producer family members) as permanent and seasonal workers?



It has been observed that an 82 percent farmer strictly prohibits employing children less than 15 years. 18 percent farmers prohibits at partial level.

1.4.2 If children under the age of 15 are working on the farm, have you considered the individual situation of each child involved and ensured that any measures taken are designed to actually improve the wellbeing of the individual child?

Not Applicable

1.4.3 Do you ensure that Children or minors (below 18) are not involves in hazardous work or any work that jeopardizes their physical, mental or moral well being?

Not Applicable

1.4.4 Do you ensure that all children living on the farm can go to school or receive schooling at home?

Not Applicable

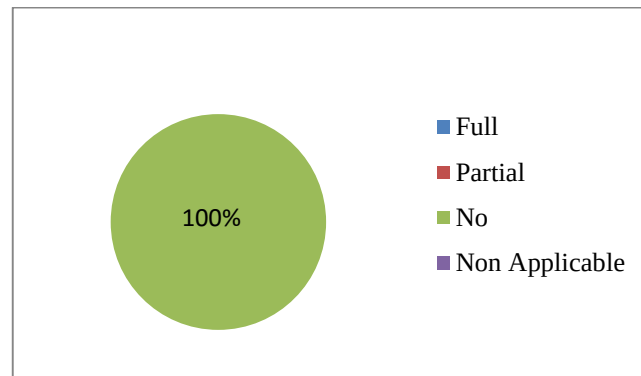
2. IDENTIFICATION & ORIGIN

2.1 GENETIC ORIGIN

2.1.1 The growing of any Genetically Modified Plants for consumption must comply with all the regulations in place relating to GMO's for both the country of production and the country of consumption. The use of any GMO cultivars must be agreed with McCain before planting.

Not Applicable

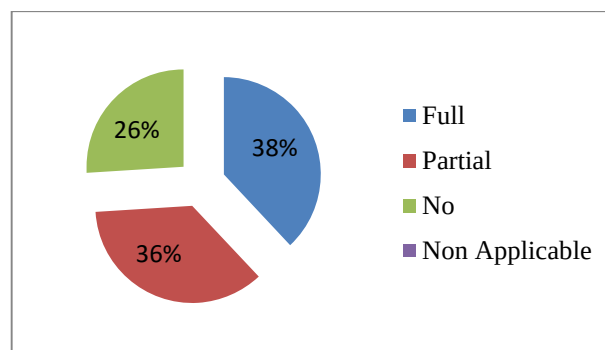
2.1.2 Only Certified seed is used. Seed origin is known and documented.



NOTE: Growers use truthful seed provided given by McCain

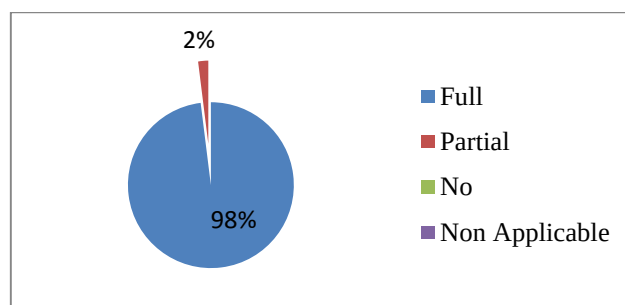
2.2 IDENTIFICATION

2.2.1 Is system for identification of each field, yard, plot and etc well established and referenced on a farm plan/map?



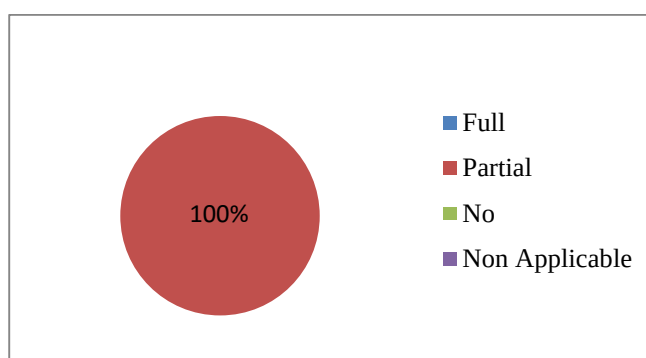
It has been observed that 38 percent farmers had map of their farm/yard/plot. 36 percent farmers had it at partial level and 26 percent farmers were not having any kind of map of their farm/yard/plot for reference.

2.2.2 Is Research carried out to establish any history of, domestic land fill, chemical diffusion or burial of any potentially hazardous materials on the new land to be used for growing crops?



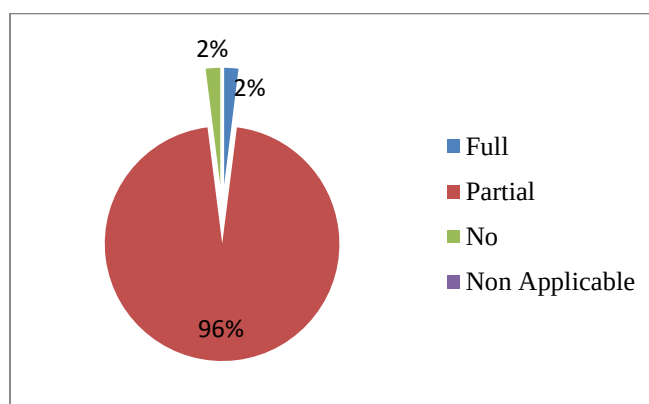
It was observed in case of 2 percent farmers only that research was carried out on the new land to be used for growing crops. In case of 98 percent farmers no research was carried out as they claim that they already have idea about the condition of land.

2.2.3 Production fields located near areas where non-agricultural activities contribute to air, water or soil pollution (i.e. industrial activities, roadside debris, road salt or foreign objects) must be assessed prior to planting and harvesting for potential contaminants.



It has been observed that all the farmers (6farmers) fields were located near areas where non-agricultural activities contribute to pollution, but there were no such kind of assessments done for potential contamination.

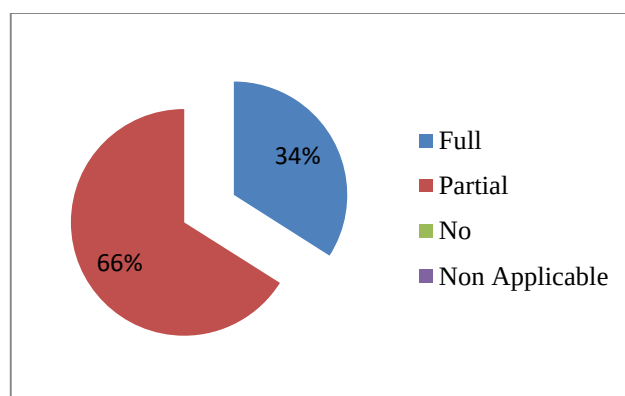
2.2.4 Products must be traceable back to the farm and batch of origin. A unique identity number, name or mark must be given to each batch of seed planted (per variety) at the time they are placed in the field. This identity number or name must accompany the seed on dispatch to the producer so that the production history of that produce is traceable back to the farm of origin.?



It has been observed that 96 percent farmers have a partial record of seed numbers and names, where they planted in field. 2 percent farmers were fully recording the seeds

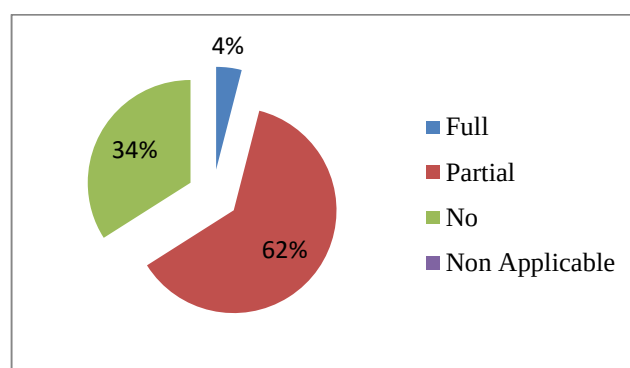
numbers and names, where they planted and another 2 percent have do not have any kind of records.

2.2.5 Do Pesticide application records accompany or precede consignments leaving the production site and have details of the utilisation interval (interval between treatment and consumption)?



It has been observed that 34 percent farmers have pesticides application records and 66 percent farmers having it at a partial level.

2.2.6 Is chemical application history record sheet kept for all crops for a minimum of 3 years?



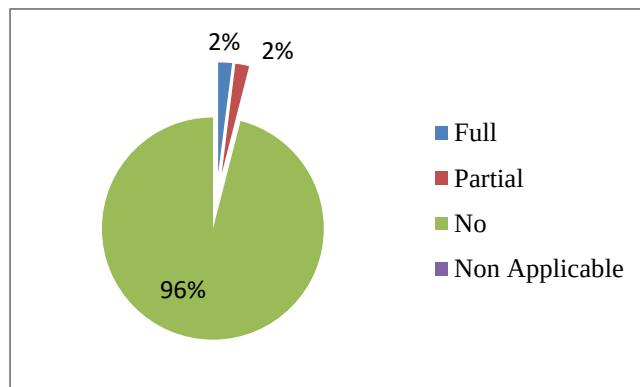
It has been observed that only 4 percent farmers have a chemical application history record sheet kept for all crops for a minimum of 3 years. 62 percent farmers have a simple record and another 34 percent farmers do not have any kind of records.

2.2.7 For each storage cell of the farm; the register name(s) or code(s) of each field harvested, as well as the date of harvest or entrance into the farm storage, must be recorded.?

Not Applicable

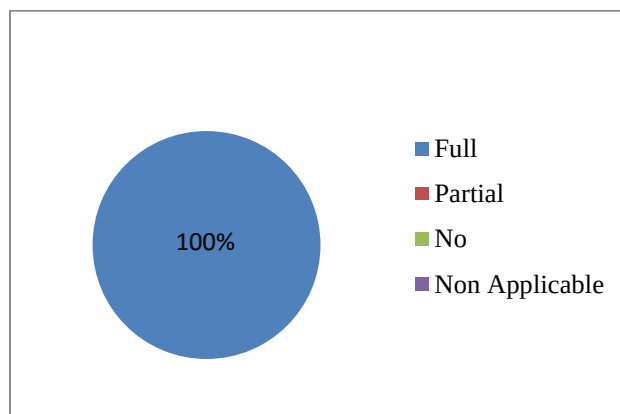
2.3 PROCEDURES

2.3.1 Risk for microbial, chemical and mineral pollutants in the irrigation, spraying, fluming and washing water sources must be assessed. Tests must be performed if risks is supposed.



It has been observed that 2 percent farmers were doing the water testing at regional level. 2 percent farmers were doing it at partial level and 96 percent farmers were not doing any kind of water testing.

2.3.2 McCain Company is required to implement the McCain Global Pesticide Safety Testing Programme.

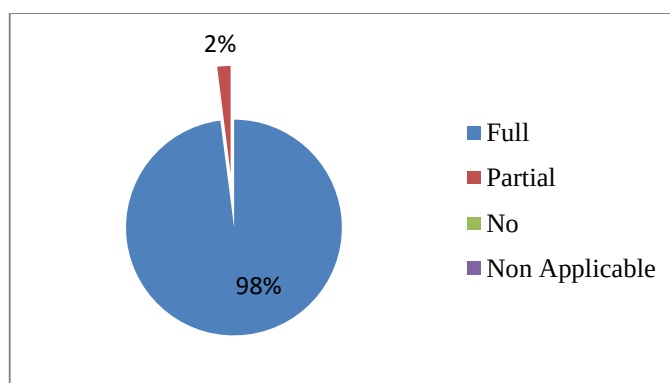


In case of all the farmers McCain can rely on external pesticide safety programmes.

3. ENVIRONMENTAL PROTECTION

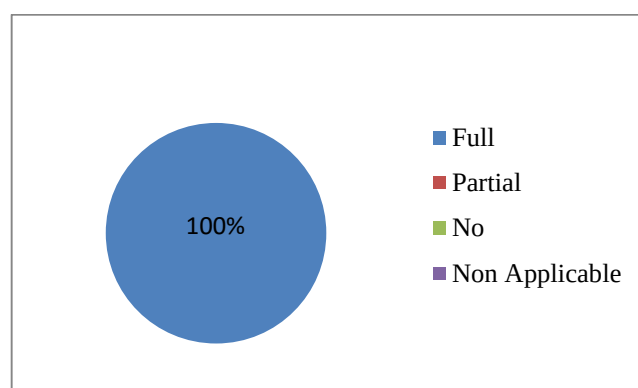
3.1 AIR, SOIL & WATER MANAGEMENT

3.1.1 Whether Farming systems and cultivation techniques used on farm are eco-friendly?



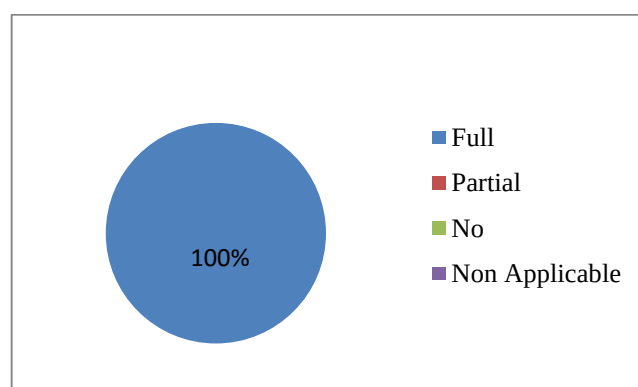
It has been observed that 98 percent farmers were using eco-friendly techniques for farming systems and cultivation. 2 percent farmers were partially following the eco-friendly techniques for farming systems and cultivation.

3.1.2 Are measures in place to prevent the soil erosion?



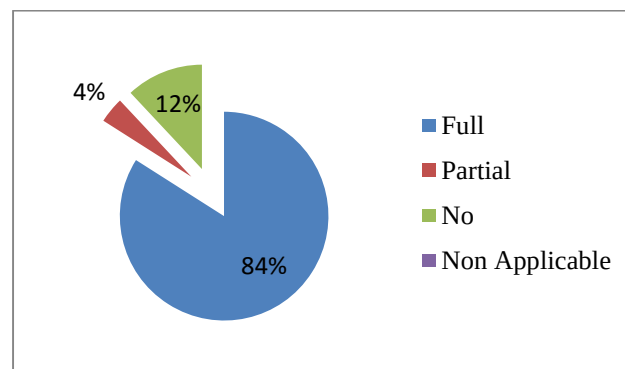
All the farmers farm measures were taken in place to prevent the soil erosion.

3.1.3 Are measures in place to improve soil structure and fertility?



All the farmers farm measures were taken in place to improve soil structure and fertility.

3.1.4. Are Measures in place to avoid soil compaction?



It has been observed that 84 percent farmers have measures in place to avoid soil compaction on their field. 4 percent farmers were following measures partially to avoid soil compaction on their field and 12 percent farmers were not at all following any measure to avoid soil compaction.

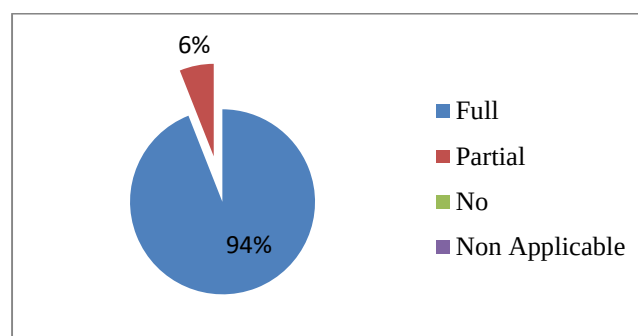
3.1.5. Farmers must be aware of their status as nitrate vulnerable zones under government legislation where this exists. ?

Not Applicable

3.1.6. Whether producers document and implement plans with the objectives of reducing pollution by nitrates?

Not Applicable

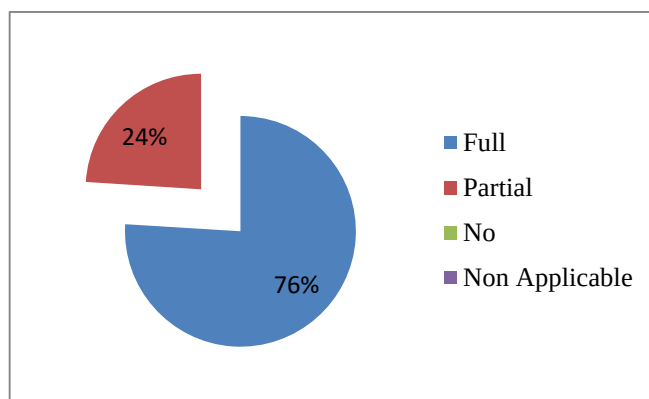
3.1.7/8 Are techniques used to prevent pollution of ditches, streams, ponds, hedges, adjacent crops etc. during application of fertilizers?



It has been observed that 94 percent farmers used fertilizers in a way that prevent the adjacent crops from pollution and there is no water body near to the field so it prevents the

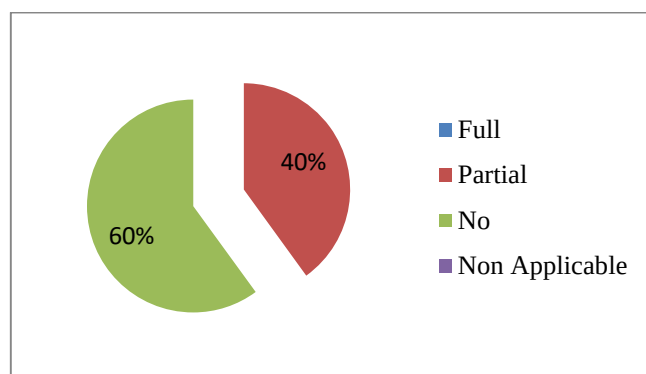
pollution of ditches, streams & ponds etc.6 percent farmers were partially followed the techniques for application of fertilizers.

3.1.9. Are producers aware of specific hazards related to the use of organic fertilizers?



It has been observed that 76 percent farmers were aware about specific hazards related to the use of organic fertilizers.24 percent farmers were partially aware about it.

3.1.10. The pollution of ground and surface water by substances deemed harmful must be prevented. A plan identifying high risk areas and how these will be managed must be documented and implemented?

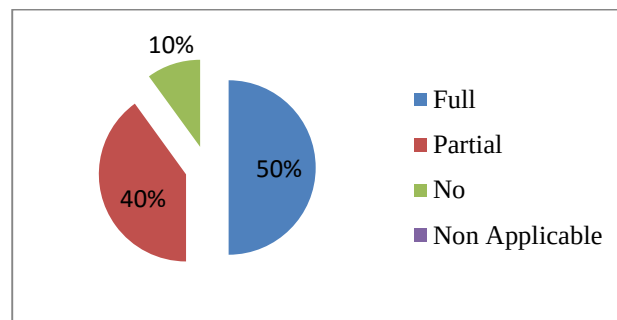


It has been observed that 60 percent farmers do not have any kind of documentation regarding identification of high pollution risk areas as such.40 percent farmers have it at partial level.

3.1.11 Where sewage sludge is applied the heavy metal content of the soil must not exceed levels laid down in the governmental regulations.

Not Applicable

3.1.12. Whether Drainage systems in place to prevent dilution of dirty water systems by rain water & runoff?

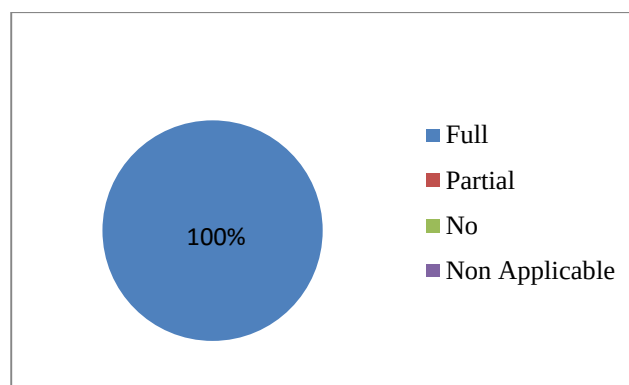


It has been observed that 50 percent farmers have well maintained drainage systems in place to prevent dilution of dirty water systems by rain water & runoff. 10 percent farmers were not having any kind of drainage systems.

3.1.13. The use of untreated sewage sludge is not permitted. Treated sewage sludge must not be used within 4 years of growing a food crop and there must be evidence that recognized codes of practice have been applied so that there is no risks to human health and the environment?

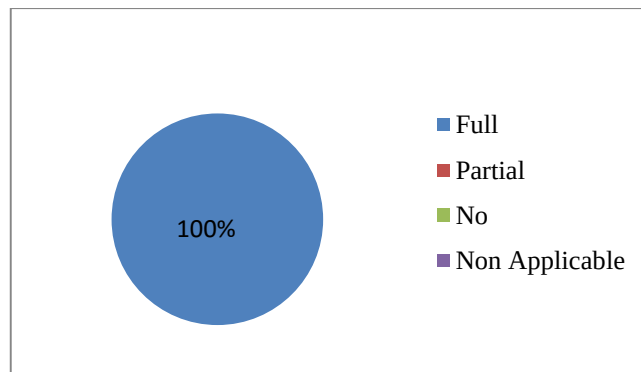
Not Applicable

3.1.14. Permission to abstract water from water sources must be obtained from the relevant regulatory authority.?



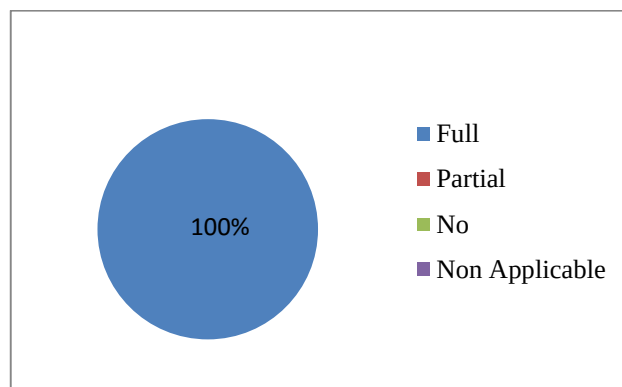
All the farmers meet the irrigation requirements through fully owned water pumps (Tubewell).

3.1.15. Are Water resources managed in a sustainable way?



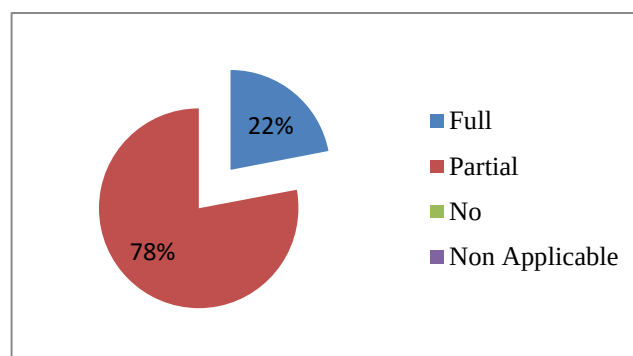
All the farmers were managed water resources in a sustainable way.

3.1.16/17 Whether Irrigation delivery systems ensure efficient water use?



In case of all the farmers irrigation delivery systems were ensured efficient water uses.

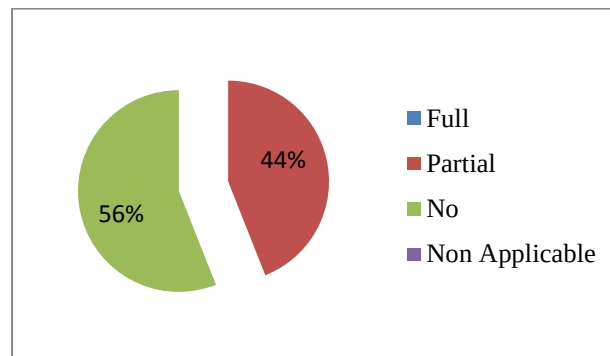
3.1.18 Air quality at the farm is assessed to minimise negative effects on the farm's surroundings?



It was observed that 22 percent farmer's land do not have any kind of negative effects on the surroundings to affect the air quality as there were no burning of crops, etc..78 percent farmer's have it at partial level.

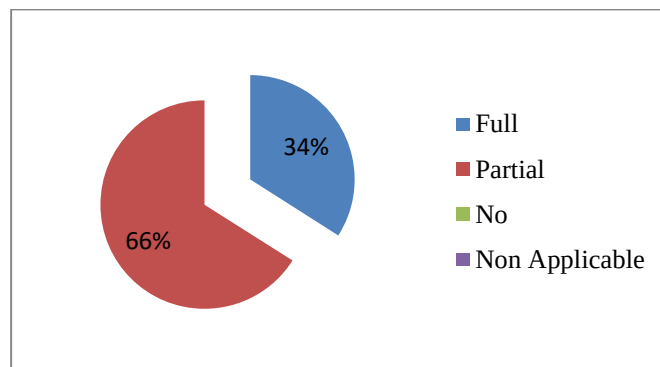
3.2 WASTE MANAGEMENT

3.2.1 Is Waste Management plan and map showing areas of risk well documented on the farm site?



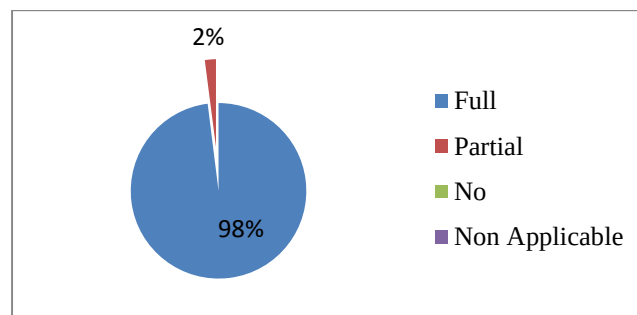
It has been observed that 44 percent grower have partial written waste management plan whereas 56 percent farmers don't have any written waste management plan.

3.2.2. Used containers which have held substances which are potentially hazardous e.g. pesticides, antimicrobials must be disposed of in a proper manner which removes the hazard.?



It has been observed that 34 percent farmers disposed container in proper manner which removes the hazards. 66 percent farmers were partially following the ways to dispose container.

3.2.3. Are after harvest, waste and by-products reuse and recycled properly?



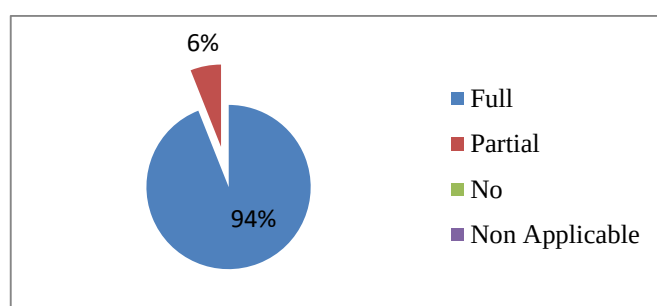
It has been observed that 98 percent farmers were reusing the bio products and recycling the waste of harvest properly.2 percent farmers were followed it at partial level.

3.2.4. Crop burning where permitted is done in accordance to best management practices.

Not Applicable

3.3 BIODIVERSITY

3.3.1 Whether producer adhere to good farming practice for the region to protect the natural resources like air, water, soil and plant and animal species?

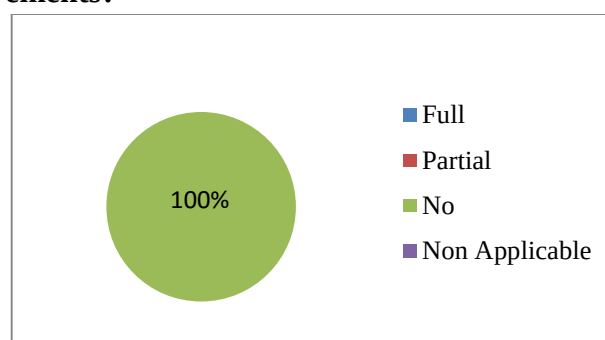


It has been observed that 94 percent farmers were doing good farming practices to protect the natural resource.6 percent farmers were following these at partial level.

3.3.2. Where a producer enters into an agri environmental commitment with the government in relation to part of the farm, he shall adhere to at least the standard of good farming practice in relation to the whole of the farm?

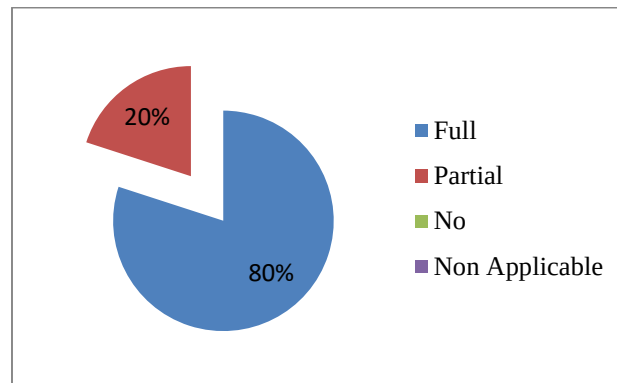
Not Applicable

3.3.3 Whether biodiversity assessment been made like; an assessment of any particular biodiversity issues on and around the farm, A periodic review to assess biodiversity improvements?



Periodic reviews were not undertaken by the grower around the farm for biodiversity improvements purposes.

3.3.4 Whether farmer has a biodiversity action plan for their farm to maintain biological diversity?

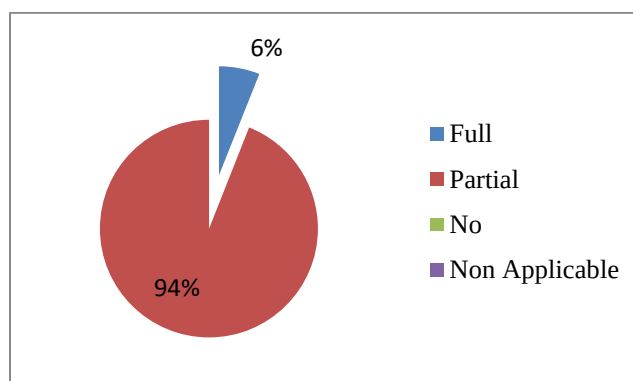


It has been observed that 80 percent farmers have biodiversity action plan for their farm to maintain biological diversity like map of the location of areas. 20 percent farmers have to it at some level.

3.3.5. Whether farm practice habitat restoration being carried out?

Not Applicable

3.3.6. Whether Invasive plant species cultivation done?



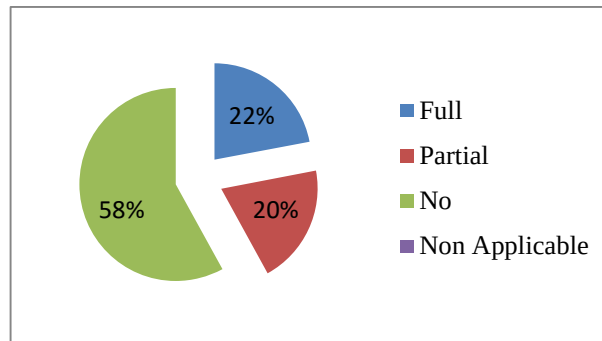
It has been observed that 6 percent farmer's lands do not have any kind of invasive plant species. 94 percent farmer's land have it at partial level.

3.3.7. Whether position of baits ensured to make it not accessible to non target species?

Not Applicable (They were not applying any baits)

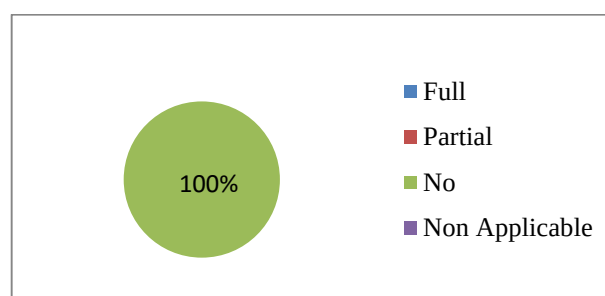
3.4 ENERGY EFFICIENCY

3.4.1 Are energy optimization & waste reduction practices followed?



It has been observed that 22 percent farmers were following the energy optimization and waste reduction practices. 20 percent farmers were following it at partial level and 58 percent farmers were not following it at all.

3.4.2. Is energy or GHG assessment done for identification of areas where the use of non-renewable resources can be minimised?

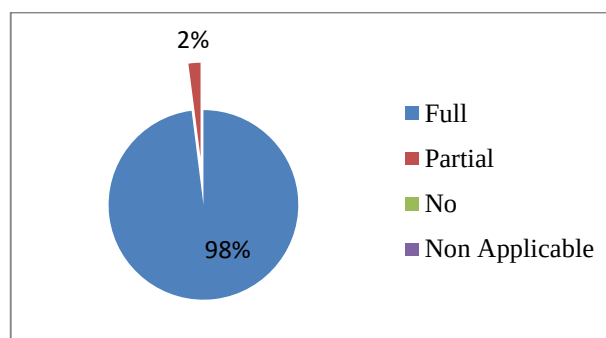


(No quantification of non-renewable resources is done for the GHG assessment)

4. BUILDINGS & EQUIPMENT

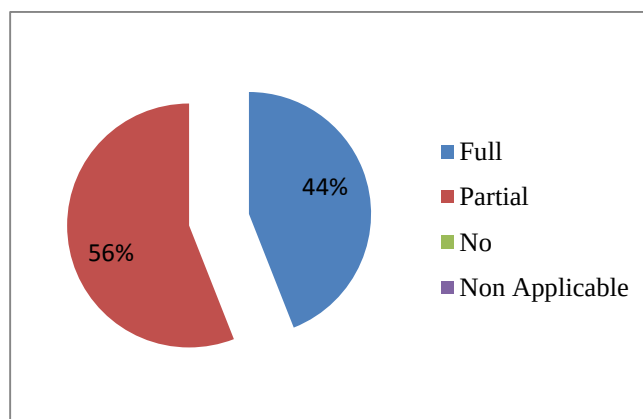
4.1 CONSTRUCTION & MAINTENANCE

4.1.1 Whether sanitization of the farm as a whole ensured?



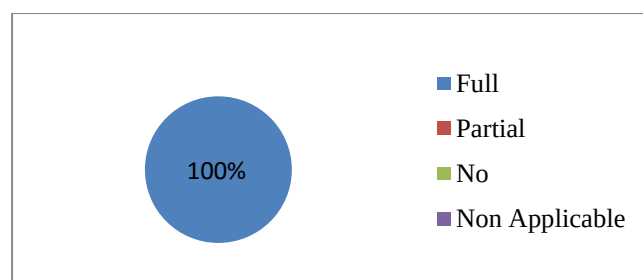
It has been observed that 98 percent farmer's farm entrance and the access way is free from any litter & waste materials. 2 percent farmer's farm have it at partial level.

4.1.2. Do Producers follow technical specifications for the proper use, maintenance and calibration of equipment?



It has been observed that 44 percent farmers follow technical specifications for the proper use, maintenance and calibration of equipment and 56 percent farmers were following at partial level..

4.1.3. Any equipment and containers coming into contact with fresh fruits and vegetables must be made of non-toxic materials. They must be constructed so that they may be thoroughly cleaned and disinfected if they are to be reused. ?



All the farmers were not used toxic equipment and containers which may come in contact with fresh fruits and vegetables.

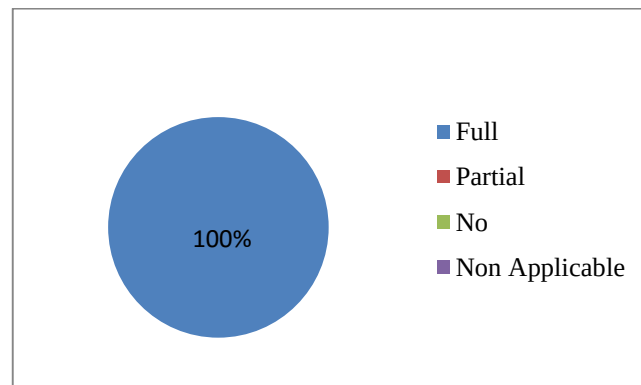
4.1.4. Lighting on farming equipment and handling equipment and in storage must be shatterproof or protected. ?

Not Applicable

4.1.5 Whether Coatings and lubricants applied to materials that may come into contact with produce are of food grade quality?

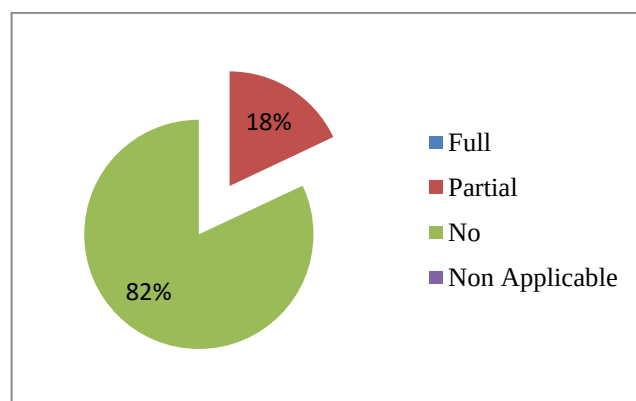
Not Applicable

4.1.6 When wood is used in the storage handling or transportation of product surfaces must be cleaned, maintained, repaired and inspected in a manner that minimizes sources of contamination.?



All the farmers farm wood was used in the storage handling or transportation of product surfaces must be cleaned, maintained, repaired and inspected in a manner that minimizes sources of contamination.

4.1.7 Vehicles used for chemical application must carry information according to government regulations such as: 1) hazardous substance warning plate 2) the chemical information sheet and label from the supplier 3) the application and calibration records?



It has been observed that 82 percent farmers were not using any kind of vehicles for chemical application. 18 percent farmers were using it at some level

4.1.8 Any vehicles used for chemical application must be in regulatory compliance for chemical spillage containment

Not Applicable

4.2 PRODUCT STORAGE

4.2.1 Any containers of waste products, by-products, inedible or dangerous substances must be of a suitable construction and be clearly identified. These containers must be stored such that malicious or accidental contamination of fresh fruits or vegetables cannot occur. They must not be used as containers for harvesting?

Not Applicable

4.2.2. Fresh fruits and vegetables must be stored in clean, dry conditions. The storage facilities must be of sound construction to prevent any contamination with chemicals, invasive wildlife or foreign material. All storage and equipment for storing products must be cleaned and inspected before storage. ?

Not Applicable

4.2.3. Genetically Modified (GM) crops must be stored separately from other crops?

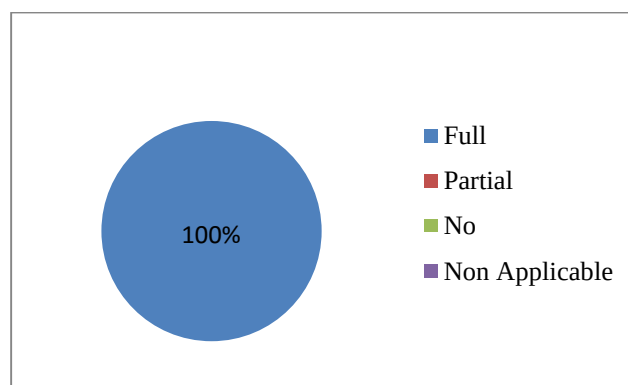
Not Applicable

4.2.4 Whether Walls, floors and ceilings of storage building are easy accessible for cleaning purposes?

Not Applicable

4.3 TRANSPORT FACILITIES

4.3.1 Whether Crops and produce transported from the farm are covered once loaded and trailers used during transit are inspected, clean, and in good condition to prevent contamination of the product?

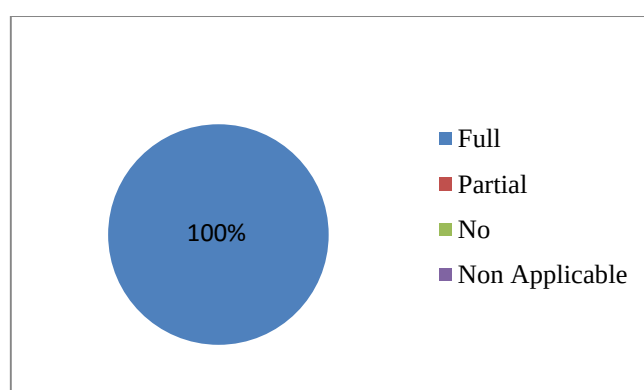


All the farmers crops and produce transported from the farm was covered once loaded and trailers used during transit had inspected, clean, and in good condition to prevent contamination of the product.

5. AGRONOMY

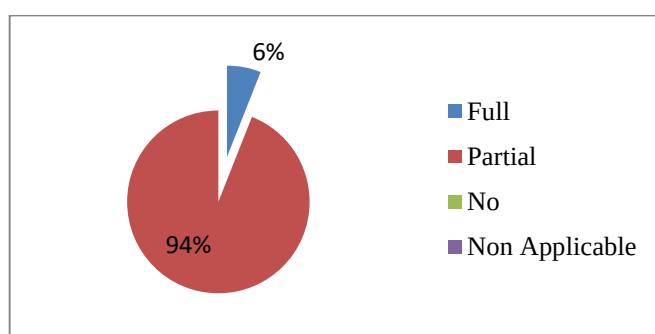
5.1 AGRONOMY PLAN

5.1.1 Producers must be able to demonstrate that they have taken account of the guidance on crop production given in the McCain (or University) Crop Management Profile documents when available?



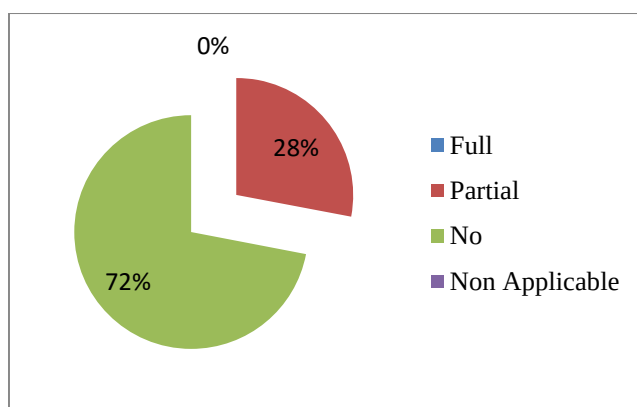
All the farmers follows the McCain recommendations/guidance on crop production.

5.1.2. A system must be in place on farm to record the cropping history and agronomic activity of each field, greenhouse or area of land?



It has been observed that 6 percent farmers were having a record of cropping history and agronomic activities of each field. Another 94 percent farmers at partial level.

5.1.3/4 Is records regarding the sowing and planting times, irrigation and harvesting of at least 3 years maintained on farm?



It has been observed that 28 percent farmers have all records regarding the sowing and planting times, irrigation and harvesting of at least 3 years maintained on farm. 72 percent farmers have only one to two year record data with them.

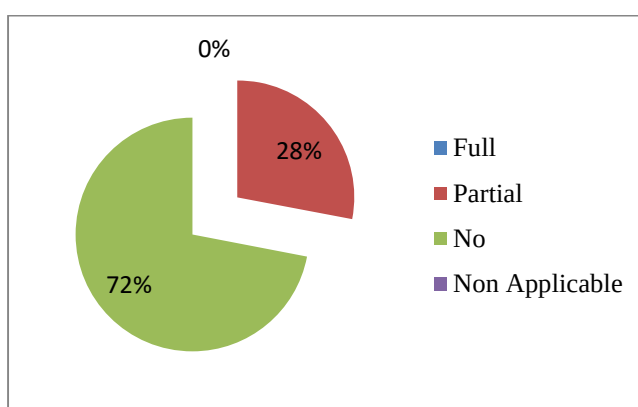
5.1.5 Whether records for the fumigation of soil are maintained in the agronomy plan?

Not Applicable

5.1.6 The use of untreated sewage water for irrigation is prohibited.

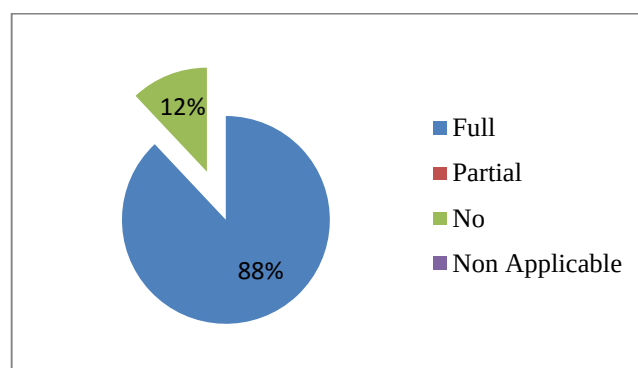
Not Applicable

5.1.7 Whether written plans in place regarding the control of invasive wildlife in fields and storages?



It has been observed that 72 percent farmers were not having any written plans in place regarding the control of invasive wildlife in fields and storages whereas 28 percent farmers have it but partially.

5.1.8. A decision support system must be incorporated into the agronomy plan. This might include e.g. Justification of irrigation timing and volume, fungicide application and timing.

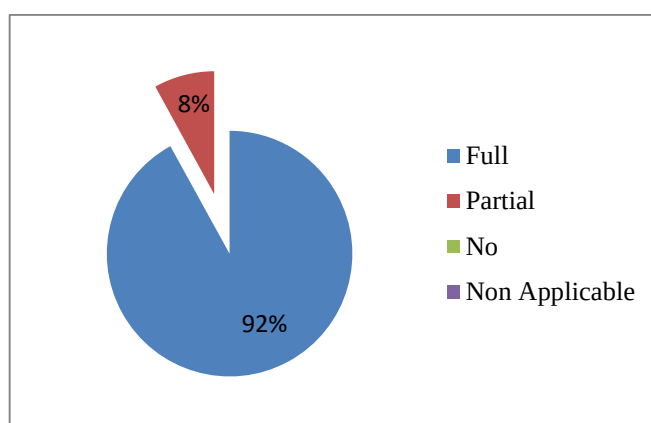


It has been observed that 88 percent farmers incorporated DSS provided by the McCain. In case of 12 percent farmers DSS was not incorporated.

5.1.9. The agronomy plan must target the phasing out of methyl bromide.?

Not Applicable

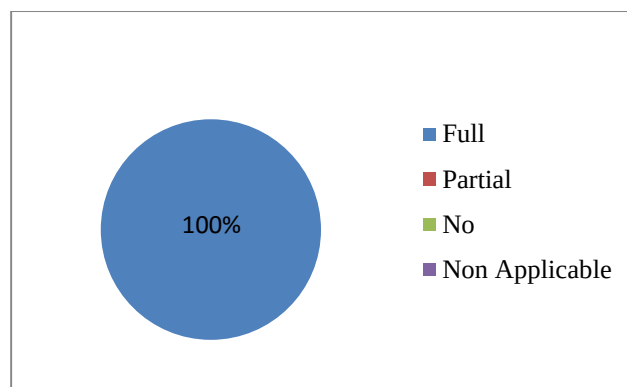
5.1.10 Whether crop rotation done for pests and diseases minimization and for maintaining soil structure?



It was observed that 92 percent farmers were doing crop rotation in their field.8 percent farmers were doing it but partially.

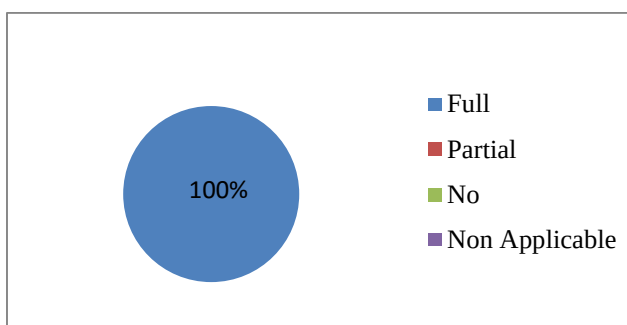
5.2 PESTICIDES

5.2.1 Only pesticides licensed for use in the country or by local legislation may be used. Label instructions are strictly followed. Pesticides used in the production of products destined for export must comply with legislative requirements (MRL) in the importing country.?



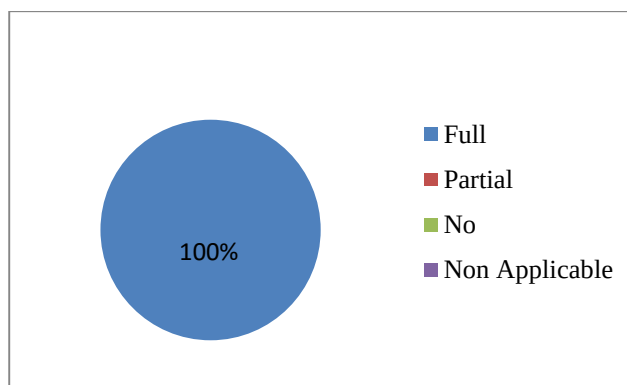
All the farmers were used licensed pesticides of the country and strictly followed the label instruction.

5.2.2 Whether producers are able to demonstrate that pesticides are used at minimum levels & are according to Integrated Pest Management techniques to maintain crop health?



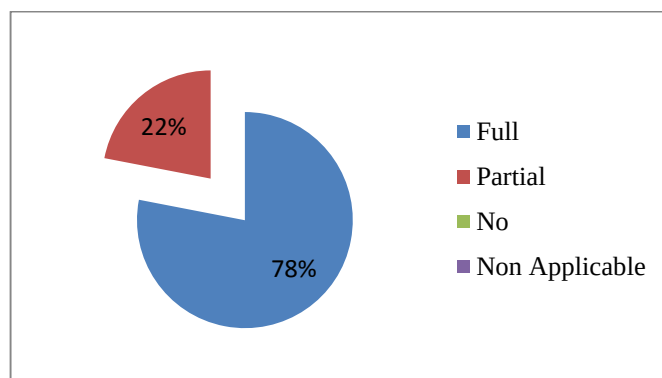
All the farmers were used pesticides at minimum levels & had accorded to Integrated Pest Management techniques to maintain crop health.

5.2.3. Whether decisions about the application of pesticides are based on the recommendations of a competent advisor?



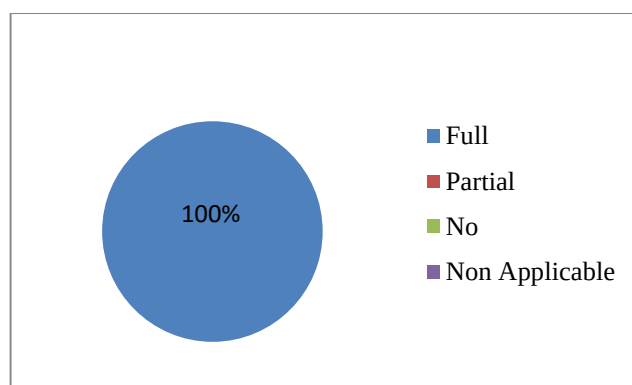
All the farmers were applied pesticides based on the recommendations of a competent advisor.

5.2.4. Whether applications of pesticides are recorded in a crop diary or the equivalent?



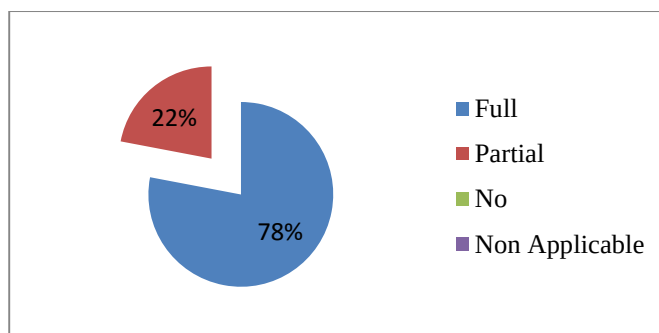
It has been observed that 78 percent farmers followed the McCain's schedule for application of pesticides, so they had a schedule record with them. 22 percent farmers had self-made schedules.

5.2.5 After application of pesticides pre-harvest intervals must be strictly observed and may under no circumstances be ignored. This also applies to any storage chemical applications eg. Sprout inhibitors. For crops that are continuously harvested over a period of time there must be a plan for crop protection that does not compromise pre-harvest intervals.



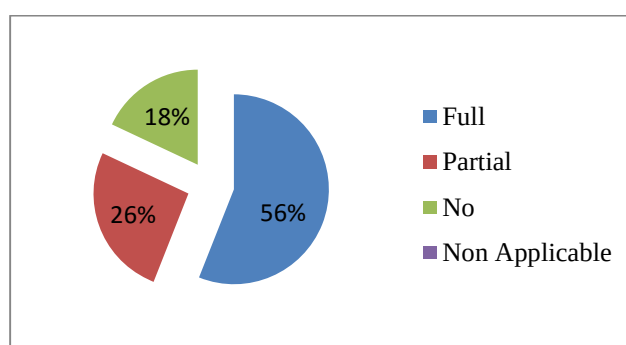
All the farmers strictly followed the McCain schedule regarding application of pesticides or other chemicals.

5.2.6 Whether special care taken to prevent drift of pesticide or vapour onto field margins, other areas or crops, animals, water courses or humans by using the right spraying techniques?



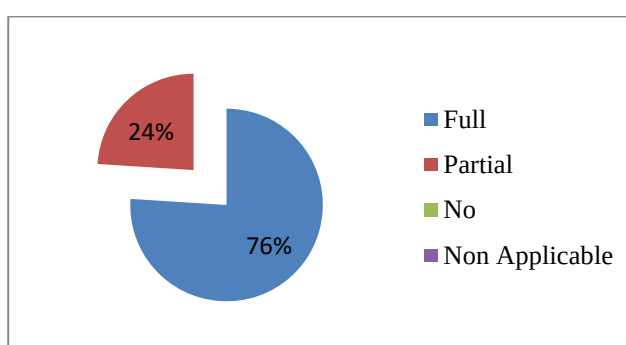
It has been observed that 78 percent farmers were using the right spraying techniques for taking care to prevent drift of pesticides or vapour onto field margins, other areas or crops, animals, water courses or humans. 22 percent were following it at partial level.

5.2.7 Fertilisers and pesticides must be stored separately.?



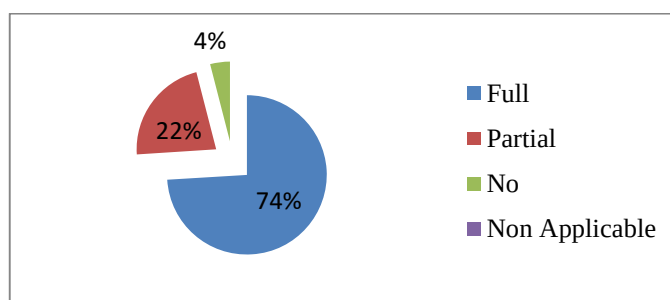
It has been observed that 56 percent farmers stored fertilizers and pesticides separately. 26 percent farmers store fertilizers and pesticides separately at partial level. 18 percent farmers were not storing fertilizers and pesticides separately.

5.2.8. Whether equipment for spraying pesticides and applying fertilizer are kept in good condition and have annual calibration to ensure accurate delivery?



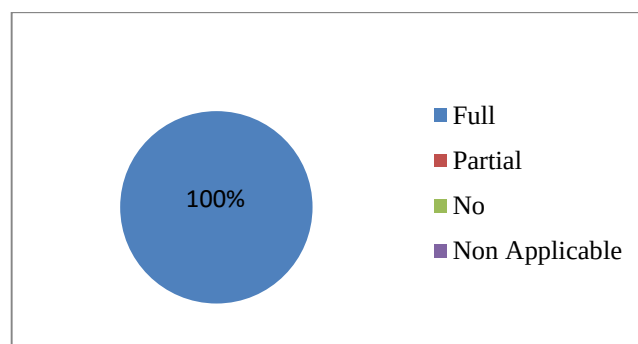
It has been observed that 76 percent farmer's farm equipment for spraying pesticides and applying fertilizer were kept in good condition and have annual calibration to ensure accurate delivery. 24 percent farmers farm follow it partially.

5.2.9. Whether the velocity of application, surface area to be covered and pressure of application system must be taken into consideration while calculating the quantity of pesticide spray?



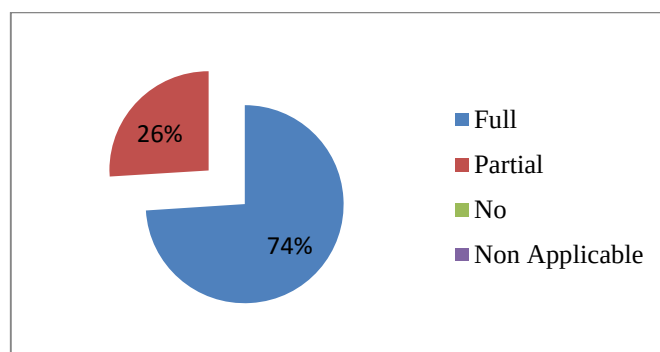
It has been observed that 74 percent growers were considering velocity of application, surface area to be covered and pressure of application system while calculating the quantity of pesticide spray. 22 percent farmers were considering at partial level.

5.2.10. Is surplus spray mix or container washings disposed of in a proper way?



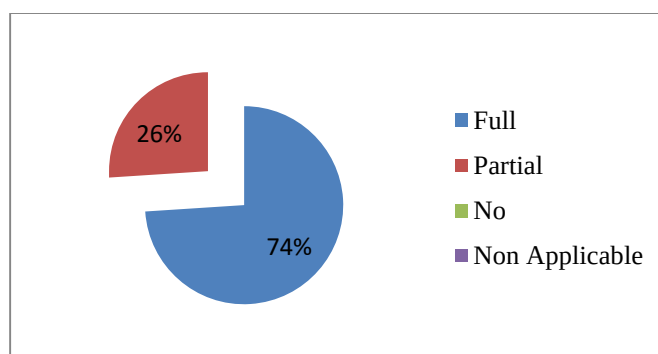
All the farmers disposed of surplus spray mix or container washings in a proper way.

5.2.11. Whether Pesticides stored are in secure, lockable, well ventilated, frost-proof, fire-resistant and well lit location?



It has been observed that 74 percent farmers were properly storing pesticides in secure, lockable, well ventilated, frost-proof, fire-resistant and well lit location. 26 percent farmers were following it partially.

5.2.12 Fertilisers must be stored in a clean, dry and secure location with no risk of contaminating water sources?

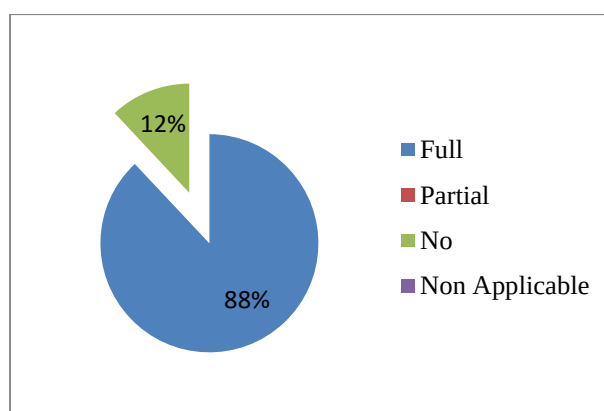


It has been observed that 74 percent farmer's farm fertilisers were stored in a clean, dry and secure location with no risk of contaminating water sources. 24 percent farmers were following it partially.

5.2.13 Produce stores must not be used to store pesticides or should not be used to store fertilisers.

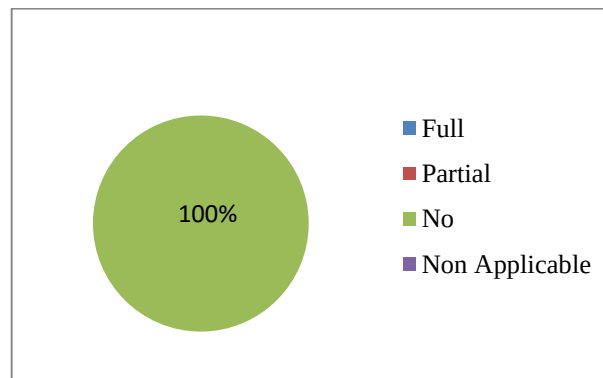
Not Applicable

5.2.14 Shelving in the pesticide store must be of nonabsorbent materials. Pesticides must remain in original packaging. Liquids must not be stored above powders to prevent contamination. There must be facilities and equipment for measuring and mixing pesticides. An inventory must be kept of the contents of the pesticide store.



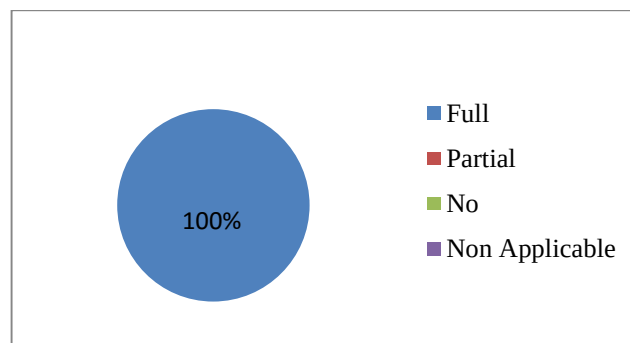
It has been observed that 88 percent farmers were storing farm pesticides in original packages in a non-absorbent metallic rack. 12 percent farmers were not following it.

5.2.15. Whether De-registered or expired pesticides are disposed of using a certified or approved chemical waste contractor or the supplying company?



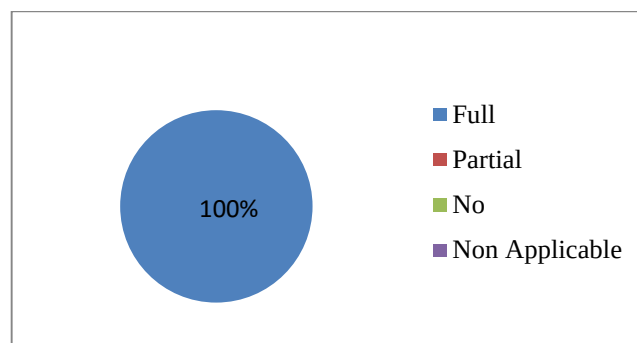
Growers were aware about De-registered or expired pesticides and makes use of pesticides before their expiry dates.

5.2.16. A list of all the products approved for use on crops must be available on farm. The list must take into account any changes in pesticide legislation.?



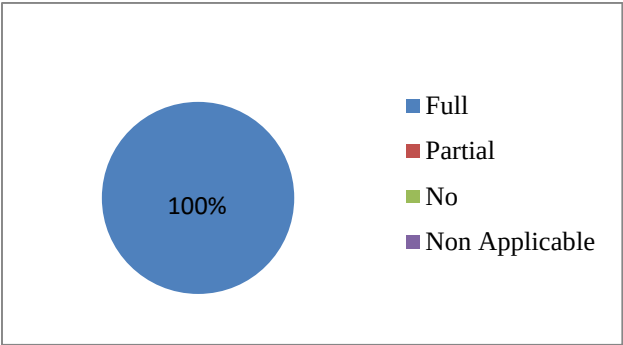
In case of all the farmers products approved for use on crops must be available on farm

5.2.17 Pesticides are selected and applied to reduce risks to applicator, beneficial, aquatic, avian and nontarget organisms.



All the farmers were used pesticides in a way that reduce risks to applicator, beneficial, aquatic, avian and non-target organisms.

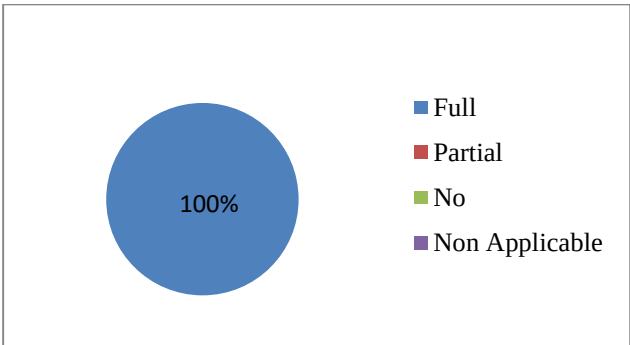
5.2.18 Pesticide are selected to reduce the development of resistance.



All the farmersselected to reduce the development of resistance.

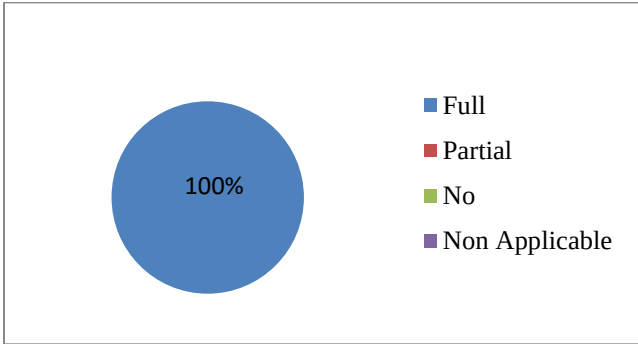
5.3 FERTILIZERS

5.3.1 Fields where non-composted manure was applied can be harvested only when the interval between manure application and harvest is greater than 90 days?



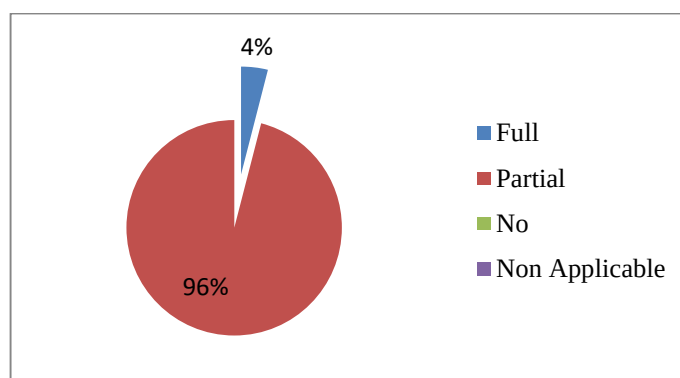
All the farmers fields non-composted manure was applied.It can be harvested only when the interval between manure application and harvest is greater than 90 days.

5.3.2 Whether precautions taken to minimize microbial contamination of bio-solids, bio-fertilizers?



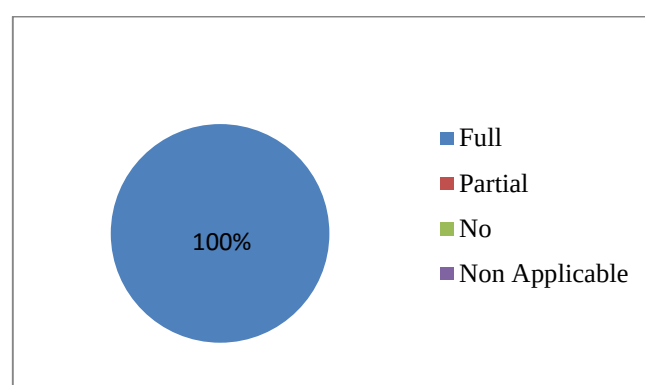
All the farmers were taken the precautions to minimize microbial contamination of bio-solids, bio-fertilizers.

5.3.3. Where manure, bio-solids and other natural fertilisers are purchased, documentation and details of any treatments to reduce microbial or chemical contamination must be supplied where this is possible?



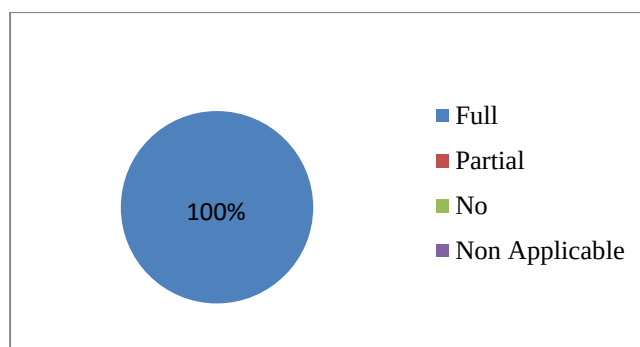
It has been observed that in case of 96 percent farmers, land manure and natural fertilizers are obtained from the farm and livestock it self and there was no documentation available as such. Only 4 percent farmers have all documents.

5.3.4. Whether Contamination of fresh produce by manure, bio-solids or other natural fertilisers is minimised?



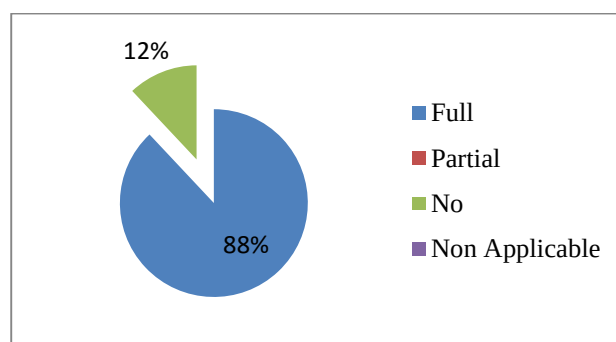
All the farmers field harvested produce do not come in contact with manure, bio-solids or other natural fertilisers and the produce was immediately taken by the McCain from the field at the time of harvest.

5.3.5. Are manures, bio-solids etc stored at secure sites?



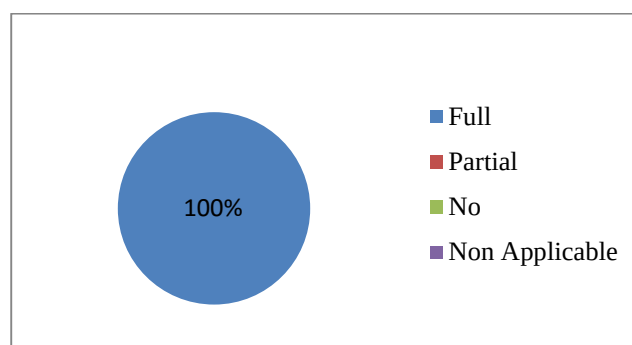
All the farmers were storing manures, bio-solids etc at secure sites.

5.3.6. Whether soil and/or plant analysis/testing carried out for correct and right amounts of fertiliser application?



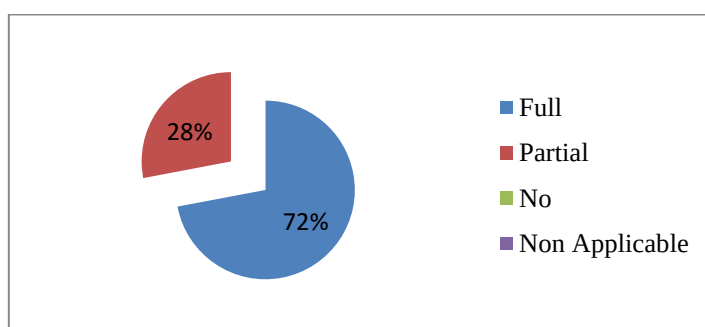
It has been observed that in case of 88 percent farmers soil testing was done for the analysis of nutrients on the field and also visual inspection for deficiency of any nutrient in the plants was done by McCain personnel regularly. 12 percent farmers were not doing any kind of analysis on their land.

5.3.7. Whether decisions about the application of fertilizer are based on the recommendations of a competent advisor?



All the farmers were taken the decisions about application of fertilizer based on the recommendations of a competent advisor.

5.3.8. Are Seeds, nursery stock or fresh produce stored separately from the fertilizers?



It has been observed that 72 percent farmers store seeds, nursery stock or fresh produce separately from the fertilizers. 28 farmers were following it partially.

5.4 PROCEDURES

5.4.1 Whether Workers and sub-contractors receive basic instruction for personal hygiene requirements?

Not Applicable

5.4.2. Whether Packaging or containers stored properly to avoid contamination by rodents, birds, chemical or physical hazards?

Not Applicable

5.4.3 Post harvest treatments must be kept to a minimum. Where they are necessary they must be used in accordance with their statutory targets. Use must be recorded in the crop diary or equivalent to show the crop or product, justification for use, location, date of application, trade name, quantity used and name of operator.

Not Applicable

5.4.4 Producers must carry out regular crop inspections and record the outcome of these inspections. Pests must be monitored and recorded e.g. using test/trap results. Weather conditions must be monitored and recorded.

Not Applicable

5.5.5 A protocol must be put in place to document the occurrence of contamination and disposal of contaminated crops. Employees must be instructed to report any incidence of contamination. ?

Not Applicable

5.5.6. A bio-security policy must be in place and include controlled access areas, visitor security policy and employee security training where required by regulation. Where such regulations do not exist growers should restrict access to storages.?

Not Applicable

5.5.7 Medical screening procedures, to prevent ill workers from entering the premises until non contagious, should be in place?

Not Applicable

OBJECTIVE 2 :TO DOCUMENT THE GAP FOLLOWED BY MCCAIN’S CONTRACTUAL FARMERS				
	McCain Good Agricultural Practice		<i>Third party audit =</i> <i>National Assurance Scheme =</i> <i>National Legislation =</i> <i>Quality Assurance =</i>	
	4.00			
	Working document			
	25-Mar-13			
Sub Section	Components updated for SAI P&P and GFSI key elements of GAP	Explanations for auditing	Comments from auditor	Pictures collected during auditing
	FARMER NAME			
	VILLAGE			
	TERRITORY			
1	STAFF			
1.1	HEALTH & SAFETY			

1	A first aid box must be present and properly equipped on all producer holdings and be available for staff use.	Individually wrapped sterile adhesive bandages (Band-Aid, assorted sizes), sterile eye pad, individually wrapped triangular bandages (preferably sterile), safety pins, medium sized individually wrapped sterile unmediated wound dressings (approx. 12cm × 12cm), large sterile individually wrapped unmediated wound dressings (approx. 18cm × 18cm), 1 pair of disposable gloves, roll sterile gauze bandage (50 mm x 9 m), pair bandage scissors	A well equiped First aid box was not present on producers land but some medicine were available for use	
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2	Workers who handle pesticides must be equipped with suitable protective clothing in accordance with any label instructions and any health and safety risks. Growers must be able to demonstrate compliance with label instructions.	Discussion needed to check how label instructions are followed and check nb of people handling pesticides at the same time. There must be on site minimum same nb of suitable slips, gloves (nitrile type) and mask(s) for handling insecticides	Workers used protective cloths for health safety while handling pesticides.	
3	Does the farm have a written risk assessment for safe and healthy working conditions?	The written risk assessment can be a generic one but it must be appropriate for conditions on the farm. The risk assessment must be reviewed and updated when changes in the organisation (e.g. other activities) occur. No N/A	Farm does not have have a written risk assessment for safe and healthy working conditions	

4	General warning signs must be placed on access doors to the pesticide store.	One sign stucked outside on the door is enough. Generally one door/store	All the farmers farm have warning signs placed on access doors and pesticides are stored inside the room	
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6	Protective clothing and equipment must be stored separately from pesticides and from food, feed, living quarters and food preparation and consumption areas	Outside the pesticide store.	Mostly all the famers have stored the protective cloths purely separated from pesticides and from food, feed, living quarters and food preparation and consumption areas	
7	Producers must implement and comply with all applicable local or regional worker health and safety regulations.	NA if no worker. Check 2 different elements of the regulations.	Yes,all the producers implement and comply with all applicable local or regional worker health and safety regulations.	
8	All mechanical equipment for the purpose of unloading/transfer/and storage of the crop is properly maintained to manufacturers standards.	Guards are in place, training in operation has been completed, operation of equipment does not exceed manufacturers guidelines.	only few farmers followed manufacture standards to maintain the mechanical equipments.	

9	Access to and within the building provides easy and safe passage.	Adequate lighting, mechanical equipment in operation can be shut down, access must be secured.	Most of the farmers's land have an good adequate lighting in place with safe passage and access was secured.	
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10	Air quality is adequate to allow access to the storage.	Employee must be trained in the risk associated with air quality.	Most of the farmers land had adequate quality of air to allow access to the storage. Storage units were semi ventilated	
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11	Are on site living quarters habitable and have the basic services and facilities?	The living quarters for the workers on farm are habitable, have a sound roof, windows and doors, and have the basic services of running water, toilets, drains. In case of no drains, septic pits can be accepted when proven to be hermetic	Most of the farmers farm have good basic service facility for the labours in living quarters,toilets etc.	
1.2	Training			
1	Producers must be able to demonstrate that those persons undertaking operations involving risk of pollution (fertilizer application and manure spreading) have the relevant training.	Either through a document justifying the suitable training or through a discussion with the given people to check experience, knowledge on effects and side -effects of pesticides and fertilizers.	Producers were able to ensure that person dealing with pollution risk operation had the relevant training but didn't have any document for justifying the same	

2	Producers must be able to demonstrate that those persons making decisions on the use of pesticides (external or in house) have the relevant training.	idem preceding component (focused on effects and side-effects of pesticides on health and environment)	Persons who make decisions on the use of pesticides had relevant training by McCain and knew about effect and side-effect of pesticides on health and environment	
3	Workers who handle and apply pesticides (spraying and granule application) must be trained or be able to demonstrate competence and knowledge in correct pesticide handling.	idem preceding component	Workers who handle and apply pesticides were trained and had knowledge about correct pesticide usage	
4	Have all workers received adequate health and safety training and are they instructed according to the risk	Workers can demonstrate competency in responsibilities and tasks through visual observation. If at time of	NA	

	assessment (see component 1.1.3 above)?	inspection there are no activities, there must be evidence of instructions. No N/A.		
5	Do you regularly seek external advice, training and/or capacity building on sustainable production, technologies and human resource management?	Farmer must demonstrate that they sought external advice, attended training and /or capacity building sessions	External advice, training, technologies and human resource management were regularly sought by farmer	
1.3	Emergency Action Plans			
1	Farms must have plans in place to deal with emergencies in the case of: 1) accidental injuries 2) fire,3) flood, 4)power failure, 5) freezing, 6)failure of water supply, 7) chemical or effluent spillage.	"Quality/SOP" farm document listing the different possible risks and how these risks are addressed	No such kind of plan to deal with emergency cases. Only few farmers had some action plan in case of failure of water supply.	

2	A list of telephone numbers which can be used in cases of emergency must be available at all times on farms and produce storage facilities.		List of Emergency telephone numbers are available on the farm .	
3	The emergency action plan and list of emergency telephone numbers must be kept near a telephone point. There must also be written instructions for locating the farm.		List of Emergency telephone numbers are available on the farm at near the telephone point.	
4	Fire prevention precautions must include; restricted access to buildings; routine machinery maintenance; safe use and storage of	Can be only demonstrated by signs properly located and visual observation at time of audit	Most of the farmers land had no such kind of signs located but they were aware about the fire prevention precautions at restricted access buildings, routine	

	flammable materials; escape routes and passageways kept free at all times.		machinery maintenance, safe use and storage of flammable materials undertaken.	
5	Smoking inside any storage facilities used for produce or chemicals is permitted.?	Demonstrated by signs in- or out-side facilities and visual observation at time of audit	Smoking inside any storage facilities used for produce or chemicals was not permitted.	
1.4	Child Labour			

1	Do you prohibit employing children under 15 years (other than producer family members) as permanent and seasonal workers.	If local legislation has established a higher minimum age, this higher age applies. On family farms, children can participate in farming practices under the following conditions (and where local laws do not prohibit it): only for light work, for a limited number of hours (max. 14 hours a week) and if the work does not jeopardize their physical and mental well-being or interfere with their schooling. They do not conduct hazardous work and are always accompanied by an adult relative.	No children under 15 years were employed into farm work as permanent or seasonal workers	
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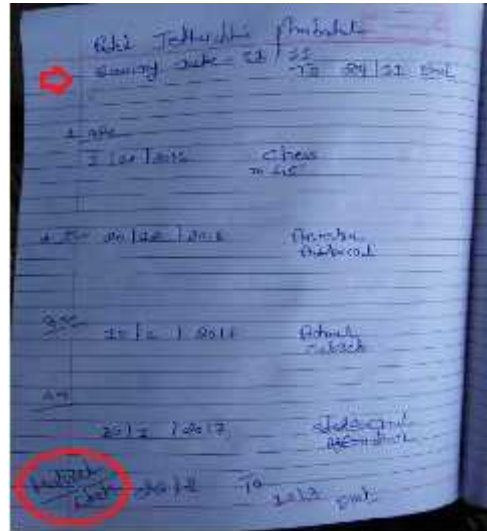
2	If children under the age of 15 are working on the farm, have you considered the individual situation of each child involved and ensured that any measures taken are designed to actually improve the wellbeing of the individual child?	In the case that you were honestly not aware that some of your employees are under-aged, you have to consider the individual situation of each child in relation to its wellbeing. These children shall be supported e.g. through education and training.	N.A	
3	Do you ensure that Children or minors (below 18) do not conduct hazardous work or any work that jeopardizes their physical, mental or moral well being, even more so than any other workers?	Children or minors (below 18) do not work in dangerous locations, in unhealthy situations, at night, or with dangerous substances or equipment, nor do they carry heavy loads. Children or minors (below 18) are not exposed to any form of abuse and there is no	N.A	

		evidence of trafficked, bonded or forced labor.		
4	Do you ensure that all children living on the farm can go to school or receive schooling at home?	Schooling at home is only admissable if it is done according to a recognised program.	N.A	
2	IDENTIFICATION AND ORIGIN			
2.1	Genetic Origin			
1	The growing of any Genetically Modified Plants for consumption must comply with all the regulations in place relating to GMO's for both the country of production and the country of consumption. The use of any GMO cultivars must be agreed with McCain before planting.		NA	

2	Only Certified seed is used . Seed origin is known and documented		Farmer uses truthful seed which were provided by McCain	
2.2 Identification				
1	A system for identification of each field, yard, plot, etc in production under these standards must be established and referenced on a farm plan/map.	Reference can be done on any type of support (farm management software, satellite or airplane pictures, local map...); Reference/plan can be indicated/drawn manually on simple paper. Auditor should be able to find the field, yard, plot by his own.	Farmer possesses a farm reference map for yard, field identification purposes	

2	Before any new land is used for growing crops research into the prior use of the land must be carried out to establish any history of; domestic land fill; chemical diffusion or burial of any potentially hazardous materials.	In case of new land, risk assessment is only focused on the 2 elements cited (different from GlobalGAP approach)	Whenever farmers used any new land for growing the crops they do not follow any assessment test but were aware about the condition of land.	
3	Production fields located near areas where non-agricultural activities contribute to air, water or soil pollution (i.e. industrial activities, roadside debris, road salt or foreign objects) must be assessed prior to planting and harvesting for potential contaminants	Assessment must be done for potential contamination. If chemical contamination is suspected, soil tests must be done to ensure that there is no contamination above legal levels. Soil test can be done at the regional level.	Some types of non-agricultural activities contribute to air, water or soil pollution located near production fields	

4	Products must be traceable back to the farm and batch of origin. A unique identity number, name or mark must be given to each batch of seed planted (per variety) at the time they are placed in the field. This identity number or name must accompany the seed on dispatch to the producer so that the production history of that produce is traceable back to the farm of origin.	Grower simply records (and locate on a field map or in field, if different seed origins) the seed number or name of lot(s) planted per field or parts of fields	Most of the producer had a simple records for the seed name and numbers.	
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5	Pesticide application records must accompany or precede consignments leaving the production site and have details of the utilisation interval (interval between treatment and consumption) which must be adhered to.	Details of the utilisation interval are not necessarily indicated, but they can be calculated based on application dates and harvest date. Grower must demonstrate knowledge of the PHI.	Simple pesticide application records were maintained by the growers. Further the growers had a well defined spray schedule provided by the company regarding pesticide application rates	
6	A chemical application history record sheet must be kept for all crops for a minimum of 3 years.	Auditor will only check one or two potato fields for current year and year before.	Farmers do not keep any record of chemical application history for all the crops over the years. Few farmers had it but only for three year.	
7	For each storage cell of the farm; the register name(s) or code(s) of each field harvested, as	On paper or electronical format.	NA	

	well as the date of harvest or entrance into the farm storage, must be recorded.			
2.3	Testing Procedures			
1	Risk for microbial, chemical and mineral pollutants in the irrigation, spraying, fluming and washing water sources must be assessed. Tests must be performed if risks is supposed. Frequency must be increased where particular risks have been identified The results of any testing must be compared to accepted national standards or WHO guidelines where	Discussion needed with the producer to check possible risk on water quality. Auditor must be aware of the potential local risks. Assessment of water sources must be done for potential contamination. If bacteriological contamination is suspected, water tests must be done to ensure that there is no contamination above legal levels. Water test can be done at the regional level.	No irrigation water tests was conducted.	

	national standards do not exist (fecal coliforms <1000/100mls). Remedial action must be taken when these standards are not met.			
2	All McCain Companies are required to implement the McCain Global Pesticide Safety Testing Programme.	No responsibility required for the growers. McCain can rely on external pesticide safety programmes. Grower must be aware that the company can test raw material for pesticide residues	All McCain Companies implement the McCain Global Pesticide Safety Testing Programme. Grower were aware about the testing of raw material for pesticide residues.	
3	ENVIRONMENTAL PROTECTION			
3.1	Air, Soil & Water Management			
1	Farming systems and cultivation techniques used on farm must not cause permanent	Auditor to look for evidence of measures taken to prevent pollution or erosion. Including the	No cases of soil erosion and pesticide pollution noticed on the farm	

	damage to the environment e.g. soil erosion and pollution.	effect of pesticides on soil and water.		
2	Measures are in place to prevent soil erosion	Special attention should be given to sloping fields and when the soil is exposed. Measures that prevent erosion: follow contours with operations for soil preparation, use terracing, plant trees or cover crops, minimum tillage	Producer have their farm land levelled and there was adequate vegetation cover that doesn't permit any soil erosion	
3	Measures are in place to improve soil structure and fertility	Incorporation of crop residues, green manure crops, extended rotation, organic manure and compost application and cover crops	All the farmer uses crop residues, green manure crops, organic manure and doing crop rotation for improving the soil structure and fertility	

4	Measures are in place to avoid soil compaction	This may include: using low pressure tires, avoiding cultivating under wet conditions, minimising passes on the field (chemigation, aerial spraying, fertigation), GPS	All activities were in place to avoid soil compaction problems. Few farmers land found the low pressure tires problem near to the farm.	
5	Farmers must be aware of their status as nitrate vulnerable zones under government legislation where this exists.	Unique question to be asked.	NA	
6	Producers must document and implement plans with the objective of reducing pollution by nitrates. These must include the following information regarding fertiliser use:1. Periods when	Document can be generic information showing the list of GAP's related to N management. Audit of the GAP's through checking timing of N application either mineral and organic, based on at least one field recording form.	NA	

	land application of fertiliser is inappropriate. 2. Identification and methodology of land application of fertiliser to steeply sloping ground. 3. The avoidance of application of fertiliser to water-saturated, flooded, frozen or snow covered ground. 4. The identification and application of fertiliser near to water courses. 5. The capacity and construction of storage vessels for livestock manures including measures to prevent water pollution by run	Auditor is to determine risk activity on the farm. Not a food safety component, Third party-audits to be conducted at a later date.		
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	off and seepage into the groundwater and surface water of liquids containing livestock manures and effluents from stored plant materials such as silage. 6. Procedures for the land application, including rate and uniformity of spreading of both chemical fertiliser and livestock manure that will maintain nutrient losses to water to an acceptable level. 7. Recorded levels of livestock manure (including grazing animals) applied to the ground not exceeding nutrient management recommendations.			
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7	When fertilisers (organic or inorganic) are applied techniques must be used which prevent pollution of ditches, streams, ponds, hedges, adjacent crops etc.	Auditor to ensure that proper buffers or techniques to reduce surface erosion are in place when manure and chemical fertilizers are applied?	Growers use fertilizers in a way that prevent the adjacent crops from pollution and there were no water body near to the field so it prevents the pollution of ditches, streams & ponds etc	
8	Fertilisers, organic and inorganic and effluents as well as wastewater shall be properly managed in order to preserve surrounding water sources.	Auditor to ensure that proper containment, buffers or techniques are in place to prevent contamination of water sources?	Proper fertilizer application and waste water management was not done properly at the growers farm to prevent contamination of surrounding water sources, as the picture shows that the fertilizer drum(in red circle) is placed near the water source and waste water	
9	Organic fertilisers contaminated with	Audited through questioning (or letter of	There was lack of awareness regarding the	

	heavy metals, other chemicals and dangerous foreign material (i.e. glass and metal chard) at levels which may pose a hazard to human health must not be used.	assurance from the provider) the producer about his awareness of specific hazards related to the use of organic fertilizers. NA if no organic fert. used.	presence of heavy metals, foreign materials in the organic fertilizers	
10	The pollution of ground and surface water by substances deemed harmful must be prevented. A plan identifying high risk areas and how these will be managed must be documented and implemented.	Auditor to check for documentation of high risk areas and discussion of what is done to prevent contamination	No documentation regarding identification of high pollution risk areas as such.	

11	Where sewage sludge is applied the heavy metal content of the soil must not exceed levels laid down in the governmental regulations.	Based on the method prescribed by the governmental regulations.	NA	
12	Drainage systems must be such that rain water and run off do not dilute dirty water systems.	Visual assessment on farm yards looking at dirty water systems, if present (pesticide mixtures, any type of liquid or solid organic manures, waste water)?	Some farmers' land had well isolated drainage systems but at some farm dirty water systems was present.	
13	The use of untreated sewage sludge is not permitted. Treated sewage sludge must not be used within 4 years of growing a food crop and there must be evidence that recognized	Auditor to ask questions probing the practice	NA	

	codes of practice have been applied so that there is no risks to human health and the environment.			
14	Permission to abstract water from water sources must be obtained from the relevant regulatory authority.	Producer must be able to show relevant documents (declaration, authorization,...) when relevant	All the farmers had irrigation facilities on their land beause they all had tubewells.	

15	Water resources are managed in a sustainable way	Do you avoid depletion of water sources, beyond the recharge capacity of the watershed/catchment? Do you cooperate with other water users in the catchment to balance the needs? Soil water should be managed by drainage maintenance in wet climates and by soil moisture conservation practices, e.g. rainwater harvesting, mulching, in dry conditions. An assessment of the hydrologic characteristics of the soil should be performed before adopting any irrigation system.	Through the drip and spinkler irrigation farmers minimised the use of water and it was maintained properly.	
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16	Irrigation delivery systems ensure efficient water use	The most efficient and commercially practical water delivery system is used. In addition, water saving practices should be adopted and water should be re-used or re-cycled where possible.	Well installed sprinkler irrigation system were in place ensuring efficient water use.	
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17	Irrigation management plan are in place to optimize crop water delivery	An irrigation management plan shall be used to ensure that: Timing and amount of irrigation is tailored to crop requirements. Irrigation is only used when it can enhance the yield and quality of crops produced, Irrigation takes into account predicted rainfall and evaporation, using either daily rainfall records or weather forecasts to plan irrigation schedules.	Grower applies the irrigation water by following specific irrigation schedule for the crop.	
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18	Air quality at the farm is assessed to minimise negative effects on the farm's surroundings	The farmer shall identify all sources of emissions which effect air quality. The following should be considered as potential sources: Manure storage, Waste storage, Burning waste, Pesticide application, Manure application, Dust from harvest or cultivation, Machinery exhaust fumes, Noise pollution from machinery, particularly at night	At some farms burning waste were found at produces land,which can affect the quality of air.	
3.2	Waste Management			
1	All sites must have a written Waste Management plan and map which shows areas of risk and demonstrates how risk to humans and	Included in the "Quality farm document" listing (and mapping if necessary) all possible wastes and how they are adressed . (risks can be	Grower doesn't have any written waste management plan through which risk to human through pollution cab be minimised as far	

	of pollution will be addressed. Areas which must be addressed are 1. Application of fertilisers, pesticides. 2. Disposal of carcasses, animal waste, used containers, plastics, used disinfectants, silage effluent, milk waste, out of date/used medicines, used needles and syringes, pesticides, metal and any other waste products. 3. Storage of fuels, fertilisers, pesticides, disinfectants, medicines, manures and any other substances likely to cause pollution.	properly addressed only if local management solutions exist). Waste motor oil should be addressed. Also to include batteries, tires, oil filters etc.	as possible	
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2	Used containers which have held substances which are potentially hazardous e.g. pesticides, antimicrobials must be disposed of in a proper manner which removes the hazard.	The producer can demonstrate the safe way for environment and human health he is disposing of used containers if specific collects do exist. Note to auditor: Need to know if burning is tolerated in country of audit?	Growers never burn the containers of hazardous chemicals. Although containers are disposed off properly yet few containers were found lying near the farm.	
3	Waste and by-products of harvesting and processing must be handled according to the principles of reduction, reuse and recycling.	Such wastes and by-products are generally spread on farm fields and account for organic manure. This is GAP.	Plant waste residues were left on the field to decompose as an organic manure for the next crop.	
4	Crop burning where permitted is done in accordance to best management practices.		NA	

3.3	Biodiversity			
1	Producers should adhere to good farming practice for the region (defined as the standard of farming which a reasonable farmer would follow in the region concerned). This includes the protection of natural resources: air, water, soil and plant and animal species.	Instruction to auditors: Look for field husbandry that protects natural resources (riparian buffer zones, wetlands, woodlots, species at risk and diversity and soil)	Farming was done through judicious use of natural resources and protection of plant and animal species was ensured.	
2	Where a producer enters into an agri-environmental commitment with the government in relation to part of the farm, he shall adhere to at least the standard of good farming practice in relation to the whole of the farm.	Follow Best Management Practices (Standard of farming) for all farming operations	NA	

3	A biodiversity assessment been made	A biodiversity assessment includes: An assessment of any particular biodiversity issues on and around the farm, A periodic review to assess biodiversity improvements	Periodic reviews were not undertaken by the grower around the farm for biodiversity improvements purposes.	
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4	Farm maintains biological diversity	Farmers are encouraged to have a biodiversity action plan for their farm which includes: A map of the location of areas or features important to biodiversity on and around the farm, details of how provision is made for wildlife habitats and food sources through hedges, field margins, extensive pasture, etc.	Farmers were maintaining the biological diversity on their farm. like map etc..	
5	When required, the farm practice habitat restoration	Restoration of vegetation or habitat is encouraged in swales or degraded areas that have been prone to water logging, soil erosion or loss of fertility, preferably by using native species.	NA	

6	Invasive plant species are not cultivated on the farm		Invasive plant species were not allowed to grow on the farm.	
7	Baits used to control invasive wildlife must not be positioned where a nontarget species has access.	Observe position of baits to ensure it is not accessible to non-target species	Baits were not used on the farm, though grower uses scarecrows to scare the wildlife species.	

3.4	Energy Efficiency			
1	Sites are encouraged to minimize waste and optimise energy use.	Instruction to auditors: Look for evidence of reducing packaging material (mini-bulk), auto-steer (GPS guidance-system), conversion to biofuel, low energy lighting, Variable frequency drives, wind/solar energy, calibration and adjustment of equipment, one pass hilling, size of spray equipment, No/low tillage etc.	Some of the farmers were using energy optimising practices on the land.	
2	Producers should perform an energy or GHG assessment in order to identify any areas where the use of non-renewable resources	Producer must be able at least to quantify non renewable resources used per year and identify most demanding areas. Then discussion with the	No quantification of non-renewable resources was done for the GHG assessment.	

	can be minimised and renewable energy use can be maximised (eg organic fuels).	producer to check whether positive evolution towards reduction of non renewable resources and alternative energy has been challenged.		
4	BUILDING AND EQUIPMENTS			
4.1	Construction & Maintenance			
1	The farm as a whole must present a clean and tidy appearance.	Focus on visitor access way and farm entrance. They must be clean of litter and storage of diverse materials and equipments. Take into account possible current fieldwork, weather conditions (possible mud) in the evaluation. Storage of raw material, iron... can be located at an other place of the farm.	The farm entrance and the access way was free from any litter & waste materials and no storage of raw material was located on the farm way.	

2	Producers must follow any technical specifications which are recommended by equipment manufacturers for the proper use, maintenance and calibration of equipment (e.g. Vehicles, trailers etc. including pesticide sprayer)	Producer must show at least maintenance book of the fertilizer spreader and of the sprayer if those equipments are present on the farm.	Producer were following the technical specifications which was recommended by equipment manufacturers for the proper use, maintenance and calibration of equipment like nozzel check etc.	
3	Any equipment and containers coming into contact with fresh fruits and vegetables must be made of non-toxic materials. They must be constructed so that they may be thoroughly cleaned and disinfected if they are to be reused.	Visual assessment on farm: wooden pallet /boxes are admitted if they are in good shape without any risk of wood pieces being mixed with the raw material. Condition of equipment should be frequently assessed	No use of toxic equipment and containers was made which may come in contact with fresh fruits and vegetables,they used only polybags.	

4	Lighting on farming equipment and handling equipment and in storage must be shatterproof or protected.	Lighting in storage and lighting above the product flow zones (storage, handling and harvesting equipment) must be shatterproof or protected to contain glass fragment. Factory standard headlight and taillight are acceptable	NA	
5	Coatings and lubricants applied to materials that may come into contact with produce must be of food grade quality.	Concerns mainly last roller of the bin-piler. Producer must be able to demonstrate that food grade quality lubricant is used when applicable and that the surface coming in contact with the produce is made or coated with non-toxic products.	NA	

6	When wood is used in the storage handling or transportation of product surfaces must be cleaned, maintained, repaired and inspected in a manner that minimizes sources of contamination.	Visual assessment in the potato storage (including pallet boxes if some) and discussion with the producer concerning procedure of maintenance of such equipment.	Wooden boxes used for storage or transportation purpose are well cleaned and inspected for any contamination.	
7	Vehicles used for chemical application must carry information according to government regulations such as: 1) hazardous substance warning plate 2) the chemical information sheet and label from the supplier 3) the application and calibration records	Auditor must be well aware of the regulations: in many countries, chemical information sheets and labels as well as application and calibration records are not mandatory and/or must be visible on farm.	Some grower make use of vehicle that carries the chemical for application.	

8	Any vehicles used for chemical application must be in regulatory compliance for chemical spillage containment	Auditor must be aware of regulations	Not applicable	
4.2	Product Storage			
1	Any containers of waste products, by-products, inedible or dangerous substances must be of a suitable construction and be clearly identified. These containers must be stored such that malicious or accidental contamination of fresh fruits or vegetables cannot occur. They must not be used as containers for harvesting.	Auditor to check by visual assessment.	NA	

2	Fresh fruits and vegetables must be stored in clean, dry conditions. The storage facilities must be of sound construction to prevent any contamination with chemicals, invasive wildlife or foreign material. All storage and equipment for storing products must be cleaned and inspected before storage.	Pre-season inspection must be documented. Visual assessment and questioning the producer on the procedure to clean storage facilities and equipment prior to store loading and after de-loading. Auditor must be aware that potato storage is a high humidity environment and may not be completely dry.	NA	
3	Genetically Modified (GM) crops must be stored separately from other crops	Focus checking only on crop of interest (process by McCain).	NA	
4	Walls, floors and ceilings of storage building should have		NA	

	easy access and be easy to clean and impervious			
4.3	Transport Facilities			
1	Crops and produce transported from the farm must be covered once loaded and during transit and trailers used must be inspected, clean, and in good condition to prevent contamination of the product. If they have previously been used to transport waste, metal, livestock etc, trailer must be power washed and certified clean by owner/operator.	On-farm visual assesment should be performed if possible. Auditor to ask grower about contamination potential and procedures adopted before loading fresh raw material in any trailer to minimize contamination (owned and external company) --> must refer to self inspection procedure. Certificate from external trucking company is a plus but not mandatory.	Crop and produce transported from the field was well covered and inspected to prevent contamination of the same.	

5	AGRONOMY			
5.1	Agronomy Plan			
1	Producers must be able to demonstrate that they have taken account of the guidance on crop production given in the McCain (or University) Crop Management Profile documents when available	Producer to give at least one example of advice (ex: specific planting density, N management...) extracted from McCain management profiles, when available.	Producer follows the McCain recommendations/guidance on crop production.	
2	A system must be in place on farm to record the cropping history and agronomic activity of each field, greenhouse or area of land.	Can be on any support (paper, farm management software). Visual assessment of one current potato field/plot record.	Most of the producers had record of the cropping history and agronomic activity of each field, greenhouse or area of land on farm	
3	Records of the amount of water used for the irrigation of each field must be kept. Irrigation systems should be able	Amount of water applied can be the result of a calculation (time* equipment flow) or equipment setting, not	Producer follows the McCain schedule and has orally remembered the time period of water irrigation, that is every	

	to apply specific amounts of water to each area.	necessarily based on a water-meter. Data to be checked on document for one field at least. Auditor needs to know that equipment delivering water can be managed.	third day until the 10 days before harvesting in case of potato but only few farmer's have records.	
4	Records must be kept on farm of sowing and planting times, irrigation and harvesting. Records must be kept and be available for inspection for at least 3 years.	Check if document is available for the crop of interests for one field for Y-2 with required elements. Retroactivity before crop 08 may be difficult on some farms, but must not be counted as non compliance.	Producer have orally remembered but only few farmers have records on farm of sowing and planting times, irrigation and harvesting	
5	The use of any chemicals for fumigation of soil must be justified and this must be recorded in the agronomy plan.	Producer must give evidence of potential crop losses either qualitative or quantitative by experience. Auditor to monitor for crop of interest only	NA	

6	The use of untreated sewage water for irrigation is prohibited.	Note to the auditors, sewage water refers to waste water containing human waste.	NA	
7	Producers must have written plans for the control of invasive wildlife in fields and storages. The plan must require the use of trained personnel or licensed contractors to implement the plans. Any baits or treatments must be used strictly in accordance with the manufacturers recommendations.	Written plan must include name and experience/ training of person or licensed contractor that is responsible for this task. Must also include on a farm map the place of the baits. Recording of trapping may not be mandatory in every regions.	The field was well fenced so there were no chance of entry of any wild species. Further there were no written plan for wildlife control.	

8	A decision support system must be incorporated into the agronomy plan. This might include e.g. Justification of irrigation timing and volume, fungicide application and timing.	Grower must show evidence of usage of at least one DSS for at least one crop of the farm. Receiving updated technical information from external entities (consultants, technical groups, McCain) or disease/pest modelling systems is possible if not issued by pesticide and fertilizer companies or dealers. Auditor must be able to see documented evidence of DSS use for current seson. The hand feel method is accepted for irrigation.	Grower had no documents regarding DSS although he receives technical information from McCain.	
9	The agronomy plan must target the phasing out of methyl bromide.		Grower were not aware about the usage of methyl bromide.	

10	Appropriate crop rotation is used to minimize pests and diseases and to maintain soil structure		Grower used crop rotation thrice in the year to minimize pests and diseases and to maintain soil structure.	
5.2	Pesticides			
1	Only pesticides licensed for use in the country or by local legislation may be used. Label instructions are strictly followed. Pesticides used in the production of products destined for export must comply with legislative requirements (MRL) in the importing country.	Checked through field recording forms: at least one current year field form (if complete) or one preceding year potato field form taken at random must show compliance. Growers are not required to know the MRL of exporting country.	Grower uses licensed pesticides of the country and strictly follows the label instruction.	

2	Producers must be able to demonstrate that pesticides are used at minimum levels or according to Integrated Pest Management techniques to maintain crop health. Alternative pesticides and methods (biological, mechanical, benefials) which do not harm animals, people or the environment and reduce the risk of resistance are preferred.	Examples can be: scouting, use of threshold levels, weed mapping, located in the field treatments (planting furrow, part of the field) against pests, use of less harmful pesticides when available, alternating a.i. to limit resistance development, crop rotation,...	Producers were able to demonstrate that pesticides used at minimum levels or are according to Integrated Pest Management techniques to maintain crop health and do not harm animals, people or the environment.	
3	Decisions about the application of pesticides must be based on the recommendations of a competent advisor who holds a nationally recognised certificate or	Recommendations provided by McCain staff can fit to this requirement.	McCain staff provides the recommendation about the application of pesticides to the grower.	

	qualification. Where this is not possible growers must be able to demonstrate their own competence and knowledge of integrated pest management principles and practices, e.g. through training.			
4	All applications of pesticides (e.g. seed treatments, soil fumigants, pesticides, herbicides, desiccants or storage treatments) and fertilisers must be recorded in a crop diary or the equivalent. The records must include; crop; location; date of application; reason for application trade name;	Visual check of at least one record (one potato field) for the current crop season	Grower makes pesticides application based on McCain schedule but doesn't have any record of crop, location, date of application, reason for application trade name, quantity of pesticide or fertiliser used, method of application, name of operator and pre-harvest interval.	

	quantity of pesticide or fertiliser used; method of application; name of operator; and pre-harvest interval. Records must be held for 3 years.			
5	After application of pesticides pre-harvest intervals must be strictly observed and may under no circumstances be ignored. This also applies to any storage chemical applications eg. Sprout inhibitors. For crops that are continuously harvested over a period of time there must be a plan for crop protection that does not compromise pre-harvest intervals.	Visual check of at least one record (one potato field) for the current crop season or previous crop season if current one not yet harvested	No records were available for this purpose, although the grower strictly follows the McCain schedule regarding application of pesticides or other chemicals.	

6	When pesticides are applied using spray methods (special care must be taken to prevent drift of pesticide or vapour onto field margins, other areas or crops, animals, water courses or humans by using the right spraying techniques eg droplet size and taking weather conditions into account, especially wind speed and direction. Spray methods includes seed treatment, backpack sprayer, ground rig, aerial, chemigation, in line and fogging	Through a discussion, producer can demonstrate how he is complying: knowledge of Non Treated Zone per pesticide if it does exist, nozzles used to limit drifting, influence of weather conditions on spraying result depending on pesticides, local regulation where it does exist... Recording weather conditions at time of spraying is a plus but not mandatory. This is Mandatory under Sysco???	Grower takes good care during application of pesticides to prevent drift of pesticide or vapour onto field margins, other areas or crops, animals, water courses or humans but doesn't take weather conditions especially wind speed and direction into account.	
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7	Fertilisers and pesticides must be stored separately.	Visual assessment.	Producers stored fertilizers and pesticides seperately.	
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8	Equipment for spraying pesticides and applying fertilizer must be kept in good condition and have annual calibration to ensure accurate delivery. Where any part of the spray delivery system is replaced the sprayer must be recalibrated.	Producer should show record of such annual calibration. The output of every nozzles (unless new) must be checked and pressure and speed recorded.	Most of the farm equipments for spraying pesticides and applying fertilizer were kept in good condition.	
9	When calculating the quantity of pesticide spray required the velocity of application, surface area to be covered and pressure of application system must be taken into consideration.	Question can be asked to the grower: Grower/applicator must demonstrate that he understands the label rate to be used and determines the volume of pesticide to be mixed based on area to be covered.	Grower understand the label rate to be used and determines the volume of pesticide to be mixed based on area to be covered and there experience.	
10	Any surplus spray mix or container washings must be disposed of in a	Discussion with the grower/pesticide applicator: how does he	In case of surplus spray mix, grower / pesticide applicator spray that mix	

	proper way.	manage? Auditor must be aware of what is common GAP/ minimal legislation if it does exist in the given area.	on the same field again.	
11	Pesticides must be stored in secure, lockable, well ventilated, frost-proof, fire-resistant and well lit location. The store must be able to contain any spillages and have adequate sump to prevent contamination of water courses. There must be facilities to deal with accidental spillage eg absorbent granules or sand.	Visual assessment of the pesticide store.	Grower stores pesticide in secure, frost-proof, well ventilated and fire-resistant location.	

12	Fertilisers must be stored in a clean, dry and secure location with no risk of contaminating water sources.	Visual assessment of the fertilizer store.	Grower stores fertilizers in a clean, dry location with no risk of contaminating water sources.	
13	Produce stores must not be used to store pesticides or should not be used to store fertilisers.	Visual assessment of the produce store.	Producer doesn't store the produce as the total produce was given to McCain from the field at the time of harvest.	

14	Shelving in the pesticide store must be of non-absorbent materials. Pesticides must remain in original packaging. Liquids must not be stored above powders to prevent contamination. There must be facilities and equipment for measuring and mixing pesticides. An inventory must be kept of the contents of the pesticide store.	Visual assessment. At the time of audit growers must present an inventory and pesticides must remain in original container.	The pesticides were stored in original packages in a non-absorbent metallic rack. Few liquid chemical bottles were stored adjacent to powdered packages.	
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15	De-registered or expired pesticides must only be disposed of using a certified or approved chemical waste contractor or the supplying company.	Check certificate if available. Generally legislation requires to store the de-registered products and expired pesticides, before they are disposed in a proper way, in the pesticide store, aside, with a specific sign. Or question growers how he disposes of de-registered or obsolete chemicals.	Growers were aware about De-registered or expired pesticides and makes use of pesticides before their expiry dates.	
16	A list of all the products approved for use on crops must be available on farm. The list must take into account any changes in pesticide legislation.	Visual assessment of the list(s) for potatoes or for crops grown for McCain if present on the farm or demonstration of sourcing information.	Products (approved) used for crop were available on the farm but no list was available.	
17	Pesticides are selected and applied to reduce		Grower use pesticides in a way that reduce risks to	

	risks to applicator, beneficial, aquatic, avian and non-target organisms.		applicator, beneficial, aquatic, avian and non-target organisms.	
18	Pesticide are selected to reduce the development of resistance.		Grower has no knowledge about the development of pesticide resistance in the crop.	
5.3	Fertilisers			
1	Fields where non-composted manure was applied can be harvested only when the interval between manure application and harvest is greater than 90 days.	Visual assessment of manure application and harvest documentation.	NA	
2	When using manure, bio-solids or other natural fertilisers precautions must be taken to minimise microbial contamination	In case of untreated or partially untreated organic manure use, check interval between application and potential harvest date and cross with crop microbial	Grower use farm yard compost only, the residues were left on the field for sundrying and decomposition.	

	by adopting treatment procedures to reduce or eliminate pathogens eg. composting, pasteurisation, heat drying, UV radiation, alkali digestion, sun drying. The ability of different treatments to reduce pathogen levels must be taken into account when considering the suitability of each fertiliser. Untreated or partially untreated fertilisers may only be used if other corrective action is taken such as maximising the time between application and harvest.	risk.		
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3	Where manure, bio-solids and other natural fertilisers are purchased, documentation and details of any treatments to reduce microbial or chemical contamination must be supplied where this is possible.	Check documentation	Manure and natural fertilizers were obtained from the farm and livestock itself and there were no documentation available as such.	
4	Contamination of fresh produce by manure, bio-solids or other natural fertilisers must be minimised, especially close to harvest. Contamination of adjoining fields must also be minimised e.g. careful application and run-off controls.	Assessment through discussion with the producer or review of risk assessment from adjacent fields.	The harvested produce don't come into contact with manure, bio-solids or other natural fertilisers and the produce was immediately taken by the McCain from the field at the time of harvest.	

5	The areas where manure, bio-solids and other natural fertilisers are stored or treated must be secure and not allow contamination of fresh produce, stored crops or surrounding areas.	Visual assessment of places where organic fertilizers are stored (can be checked even if no org. Fertilizers are currently stored)	Manures, biosolids and other natural fertilizers were stored in secured and separate places, avoiding any contamination of the fresh produce and surrounding areas.	
6	A soil and/or plant analysis for pH, nitrogen, phosphorus and potassium must be carried out as per regional need so that the correct types and amounts of fertiliser can be applied.	Visual assessment of soil and/or plant analysis results for some potato fields. Nitrogen soil testing should be set, where relevant, annually per field/crop and homogeneous type of soil/preceding crop on the farm. Nutrient contribution from manure application must be incorporated in fertility	Soil testing was done for the analysis of nutrients on the field. Also visual inspection for defeciency of any nutrient in the plants was done by McCain personnel regularly.	

		plan. Soil analysis results for P and K must be less than 6 years old.		
7	Decisions about the application of fertilizer must be based on the recommendations of a competent advisor who holds a regulatory recognized certificate or qualification.		Fertilizers application decisions were made as per the recommendations made by the McCain authority.	
8	Seeds, nursery stock or fresh produce must not be stored in the same location as fertilisers at the same time.	Ask for the question + visual assessment.	All Seeds, nursery stock, fresh produce or fertilizers were stored separately by the growers.	
5.4	Procedures			
1	Workers and sub-contractors who come directly, or indirectly, into contact with fresh fruits and vegetables	Producer must demonstrate/ explain the basics he is telling to employees. Toilet facilities can be producer	NA	

	must receive basic instruction in personal hygiene requirements. All subcontractors and visitors are made aware of the relevant procedures on personal safety and hygiene. Toilet facilities must be provided within the vicinity of field work which allow washing and drying of hands. These facilities must be maintained under sanitary conditions and in good repair. Workers must not; smoke, spit, chew gum or food; sneeze or cough when handling fresh fruit and vegetables. Jewellery,	private ones. Ideal is to check this through employee discussion and visual assessment. Record of training and material used must be available		
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	watches or other similar items must not be worn, long or painted fingernails must be covered where this is appropriate. Mobile phone and other loose items must be secured. (e.g. in a zipped pocket or holder). Where appropriate, relevant cleaning schedules and records should be in place. Adequate covering of cuts, grazes and boils should be in place			
2	Packaging or containers must be stored to avoid contamination by rodents, birds, chemical or physical hazards.	Question and visual assessment if possible.	NA	

	Where products are field packed they must be removed from the field overnight and stored hygienically.			
3	Post harvest treatments must be kept to a minimum. Where they are necessary they must be used in accordance with their statutory targets. Use must be recorded in the crop diary or equivalent to show the crop or product, justification for use, location, date of application, trade name, quantity used and name of operator.	Visual assessment based on storage document. Check one potato storage form of the current or preceding crop season.	NA	

4	Producers must carry out regular crop inspections and record the outcome of these inspections. Pests must be monitored and recorded e.g. using test/trap results. Weather conditions must be monitored and recorded.	Minimal documents to check for current crop season: Rainfalls and counts of pest (if some) must be recorded.	NA	
5	A protocol must be put in place to document the occurrence of contamination and disposal of contaminated crops. Employees must be instructed to report any incidence of contamination.	Written procedure must demonstrate that employees are trained to common risks and show how to report and react to such risks.	NA	

6	A bio-security policy must be in place and include controlled access areas, visitor security policy and employee security training where required by regulation. Where such regulations do not exist growers should restrict access to storages.	Written procedure must inform visitors of bio-security policy. In case of no regulations, restricted access to storages should be done by proper signs.	NA	
7	Medical screening procedures, to prevent ill workers from entering the premises until noncontagious, should be in place		NA	

OBJECTIVE 3: To Study the Socio-Economic Profile of Contractual Farmers Engaged with McCain's

Socio-economic survey will give an idea about the farmers' socio-economic status before and after associating with McCain.

3.1 AGE OF THE FARMER'S

Table No: 3.1 Age of the Farmer's

Farmer's Age	No. of Farmer's
30-40	4
41-50	7
51-60	10
61-70	1
Above70	3

According to survey of farmers, 40% of the farmers come under the age group of 51 to 60 years, 28% (7) falls under the age group of 41 to 50 years, 16%(4) falls under the age group of 30 to 40 years and 12%(3) farmers were above 70 years.

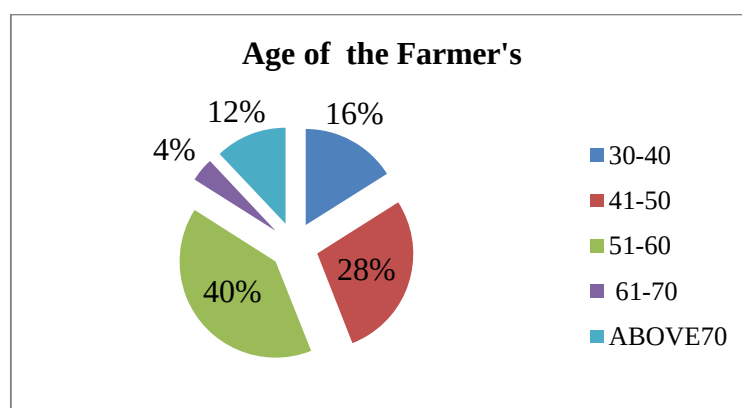


Chart 3.1 Age of the Farmer's

3.2 FARMERS EDUCATION

Table No: 3.2 Farmers Education

Farmers Education	No. of Farmer's
Below 10th	10
10th-12th	3
Diploma	1
Graduation	7
Post Graduation	4

According to survey it was observed that the educational background of the farmers varies from below 10th to graduation. Out of 25 farmers 40%(10) farmers were below 10th, 12%(3) has between 10th to 12th, 4%(1) has Diploma Education, 28%(7) has Graduate and 12%(3) has post Graduate.

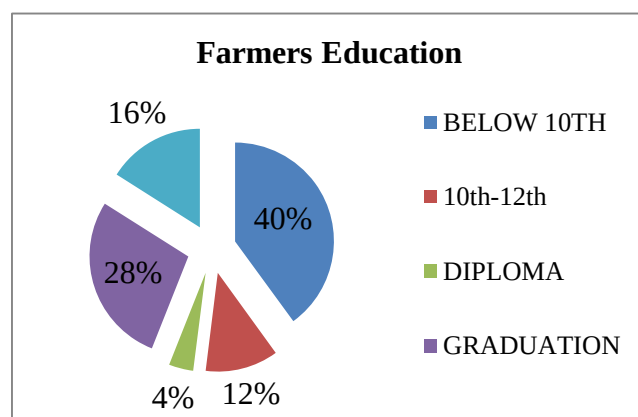


Chart 3.2 Farmers Education

3.3 HIGHEST EDUCATIONS IN THE FARMERS FAMILY

Table No: 3.3 Highest Educations in Family

Highest Education in family	No. of farmer's
10th pass	5
12th pass	1
Graduation	14
Post graduation	5

According to survey it was observed that the highest educational background of the farmer's family varies from 10th to post graduation. Out of 25 farmers 20%(5) farmers were 10th pass, 4%(1) has 12th pass, 56%(14) has Graduate, and 20%(5) has post Graduate.

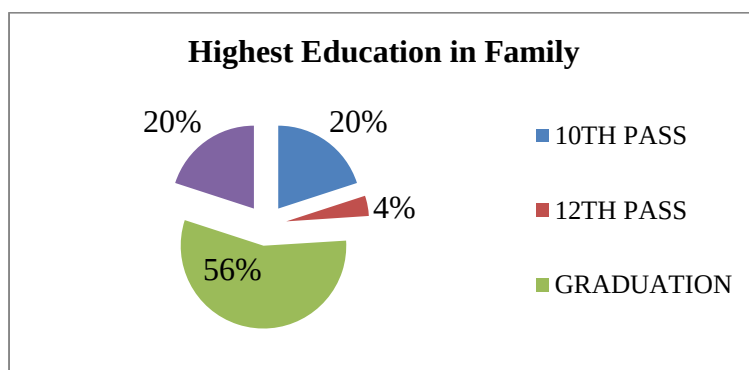


Chart 3.3 Highest Education in Family

3.4 NO. OF FAMILY MEMBERS

Table No: 3.4 No. of Family Members

No. of Family Members	No. of Farmer's
1-3	0
4-6	17
7-9	7
Above 9	1

It was observed that 68%(17)of the farmers were having 4 to 6 numbers of persons, 28% (7)family have 7 to 9 family members, 4 %(1) family have more than 9 member in family.

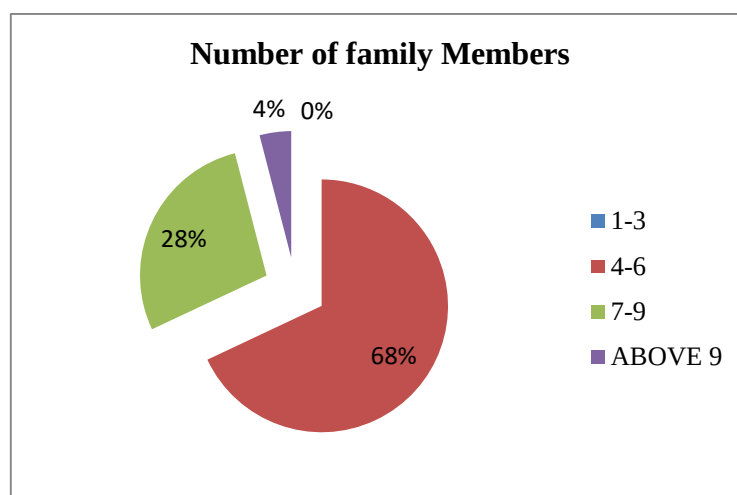


Chart 3.4 Number of family Members

3.5 TOTAL NO. OF FEMALE IN THE FARMERS FAMILY

Table No: 3.5 No. of Female in Family

Total no. of Female	No. of Farmer's
0-1	2
1-2	11
2-3	8
3-4	4

It was observed that 44%(11)of the farmers were having 1 to 2 female persons in family, 32% (8)farmers family have 2 to 3 female persons, 16 %(4)farmers family have more than 3 female member in family

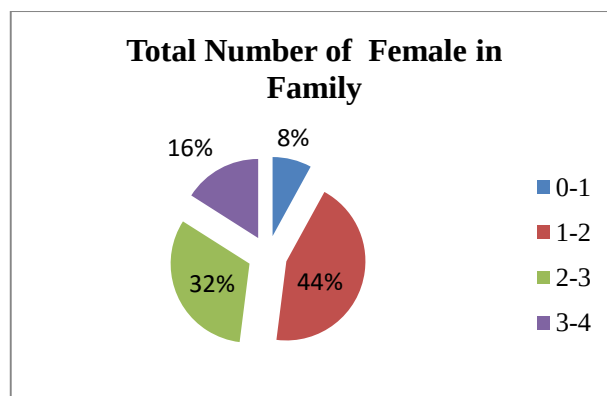


Chart 3.5 Total Number of Female in Family

3.6 UNDER 16 YEARS MEMBERS IN THE FARMERS FAMILY

Table No: 3.6 Under 16 year Members

Under 16 year	No. of Farmer's
None	10
0-1	7
1-2	6
2-3	1
3-4	1

It was observed that 28%(7)of the farmers family were having one persons under the 16 years , 24% (7)family have 1to 2 members under 16 year, 4 %(1) family have more than 3 members under 16 years in family.

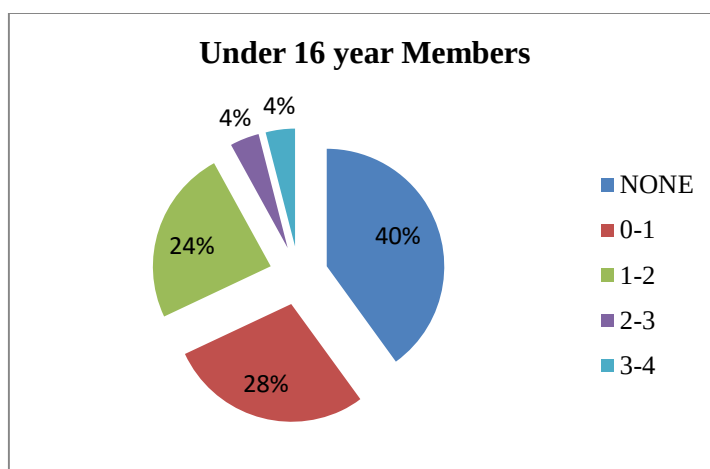


Chart 3.6 Under 16 year Members

3.7 ABOVE 60 YEARS OLD MEMBERS IN THE FARMERS FAMILY

Table No: 3.7 Above 60 year Old Members

Above 60 year	No. of Farmer's
1	10
2	5
None	10

It was observed that 40%(10) family of farmers were having one persons above the 60 years old , 40% (10)family having no members above the 60 years, 20 %(5) family have 2 members above the 60 years in family.

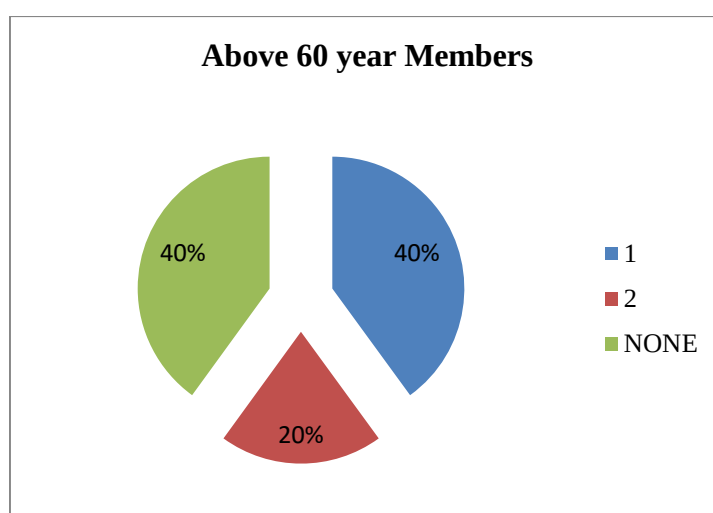


Chart 3.7 Above 60 year Members

3.8 TOTAL LAND

Table No: 3.8 Total Land

Total land (acre)	No. of Farmer's
6-12	5
13-19	9
20-26	3
Above 26	8

It was observed during the survey that the total land holding was evenly distributed. 20%(5) farmers were having land holding between 6 to 12 Acre , 36% (9) farmers have 13 to19 Acre land , 12 % (3) farmers have 20 to 26 Acre land ,32% (8)farmers have more than 26 Acre Land.

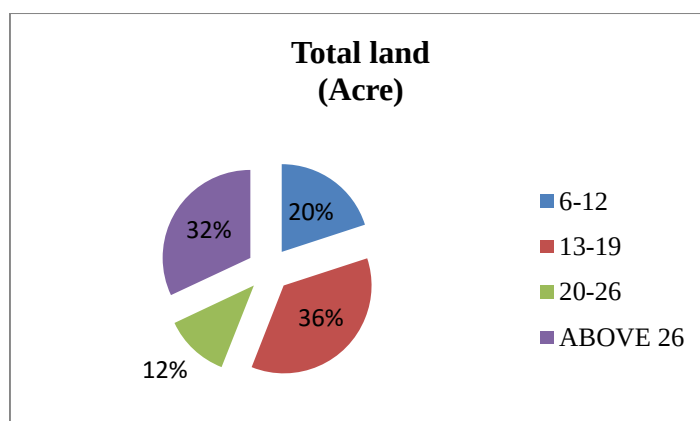


Chart 3.8 Total Land (Acre)

3.9 FARMING LAND WITH MCCAIN'S

Table No: 3.9 Farming Land with McCain's

Land with McCain's (Acre)	No. of Farmer's
2-5	8
6-9	15
10-13	1
ABOVE 13	1

It was observed during the survey that 32% (8) farmers were having land holding between 6 to 12 Acre , 36% (9) farmers have 13 to 19 Acre land , 12 % (3) farmers have 20 to 26 Acre land , 32% (8) farmers have more than 26 Acre Land.

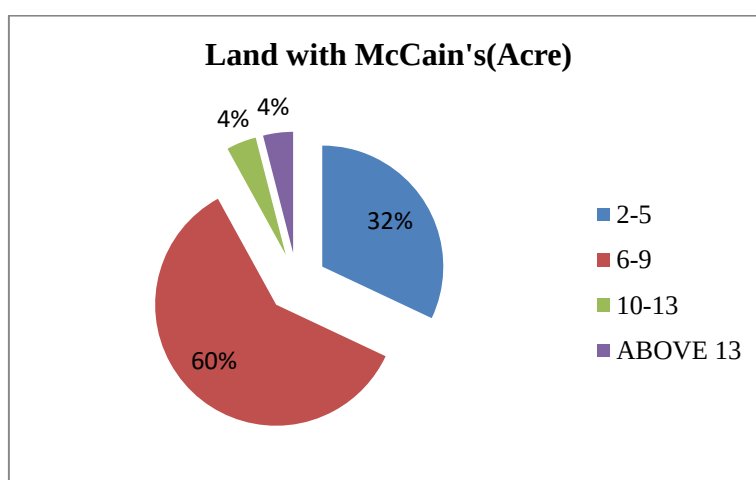


Chart 3.9 Land with McCain's (Acre)

3.10 VARIETY GROWN WITH MCCAIN'S

Table No: 3.10 Variety Grown with McCain's

Variety Grown with McCain's	No. of Farmer's
Innovator,shefudi hill	1
Innovator,shefudi hill,frysona	1
Santana	11
Innovator,Santana	1
Shefudi hill,shefudi plan	1
Chipasona,Santana	1
Santana,chipsona,badhshah	1
Bafana,Santana	1
Santana,LR	1
Bafana	1
Innovator, frysona,sarfomila,cenabek	1
Sarfomila,safodi hill	1
Santana,shefudi hill, sarfomila	1
Innovator, bafana	1
Innovator,santana,cenabek	1

It was observed during the survey that majority 44%(11) farmers were growing same variety of crop which was Santana, and rest of all 56%(14) farmers were Growing one, two and three different varieties of crops like Innovator, Bafana, Shefudi Hill, Chipsona, Frysona, Cena back, Sarfomila, LR, Badshah etc..

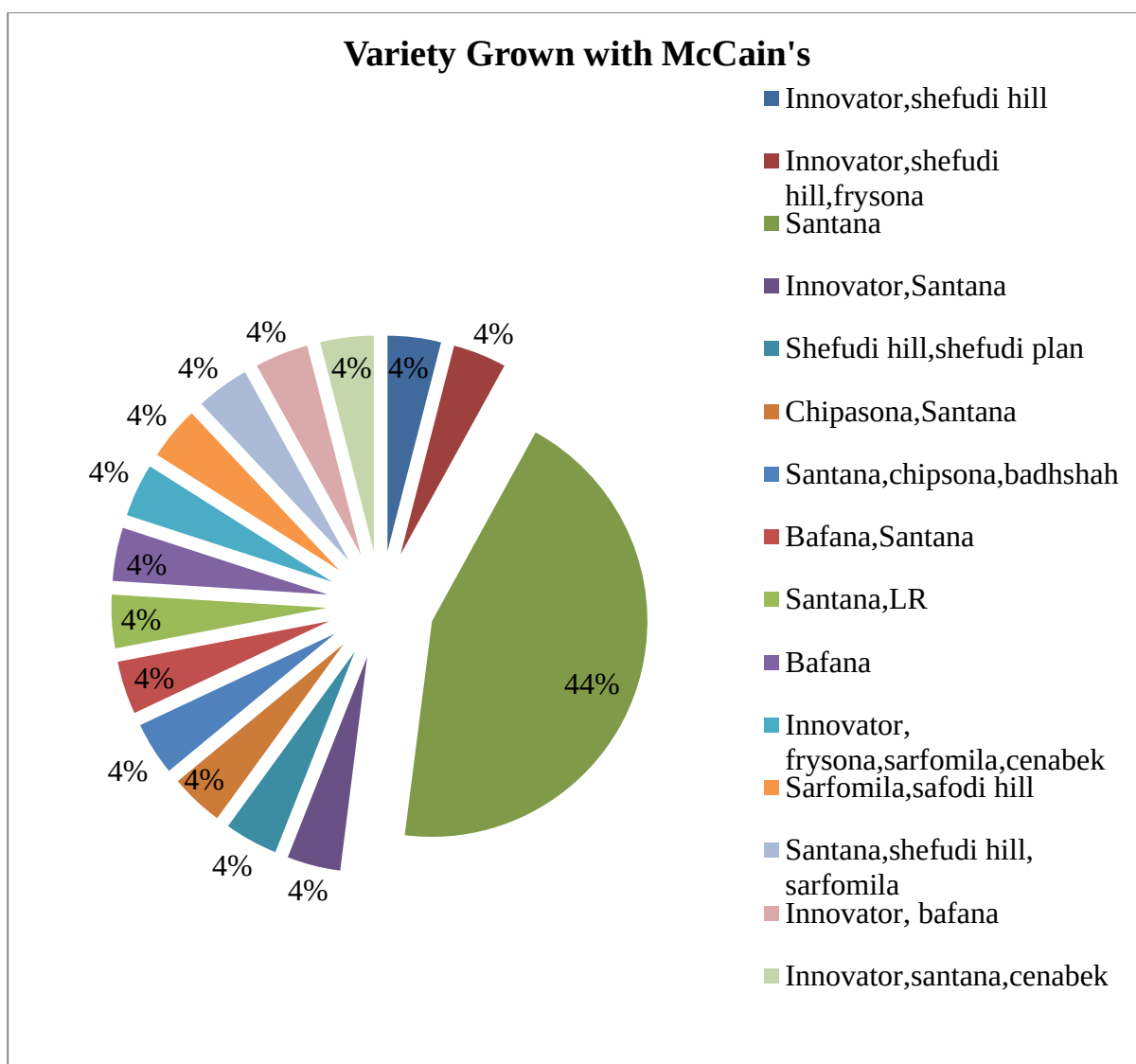


Chart 3.10 Variety Grown with McCain's

3.11 POTATO PRODUCTION PER ACRE

Table No: 3.11 Potato production per Acre

Productions/Acre in (Tonns)	No. of Farmer's
10-12	10
13-15	10
16-17	3
ABOVE 17	2

It was observed during the survey that 40%(10) farmers were having the production between 10 to 12 tonns/Acre, 40%(10) farmers were having between 13 to 15 tonns/Acre,

12%(3) farmers were having between 16 to 17 tonns/Acre, and rest of 8%(2) farmers where having more than 17 tonns/Acre production.

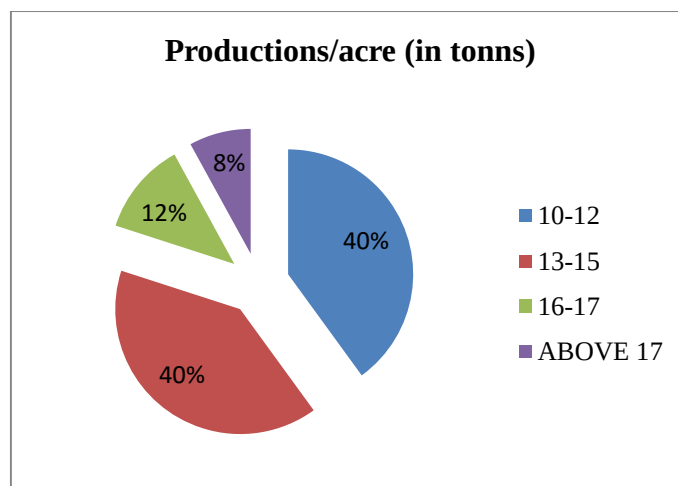


Chart 3.11 Production per Acre (in tonns)

3.12 OTHER VARIETY GROWN BY FARMERS

Table No: 3.12 Other variety of Crop

Other variety of crop	No. of Farmer's
G'nut,chilli	1
G'nut,watermelon,cotton	2
Watermelon,g'nut	3
Soyabean,g'nut	1
Cotton,g'nut	1
Wheat,g'nut,bajra	2
Wheat,oat	1
Wheat,g'nut	3
G'nut	1
G'nut,bajra	3
Wheat, lemon	1
Mustard,g'nut,wheat,bajra	1
Wheat	1
G'nut,bajra,mung	1
Castor,cotton	1
Castor,g'nut,sapodilla	1
Wheat, lemon	1

It was observed during the survey that 12 %(3) farmers were sowing the combination of the crops like watermelon and G'nut.12 %(3) farmers were sowing the combination of the crops like G'nut and Bajra.8 %(2) farmers had sowing the combination of crop like G'nut, Watermelon, cotton etc.

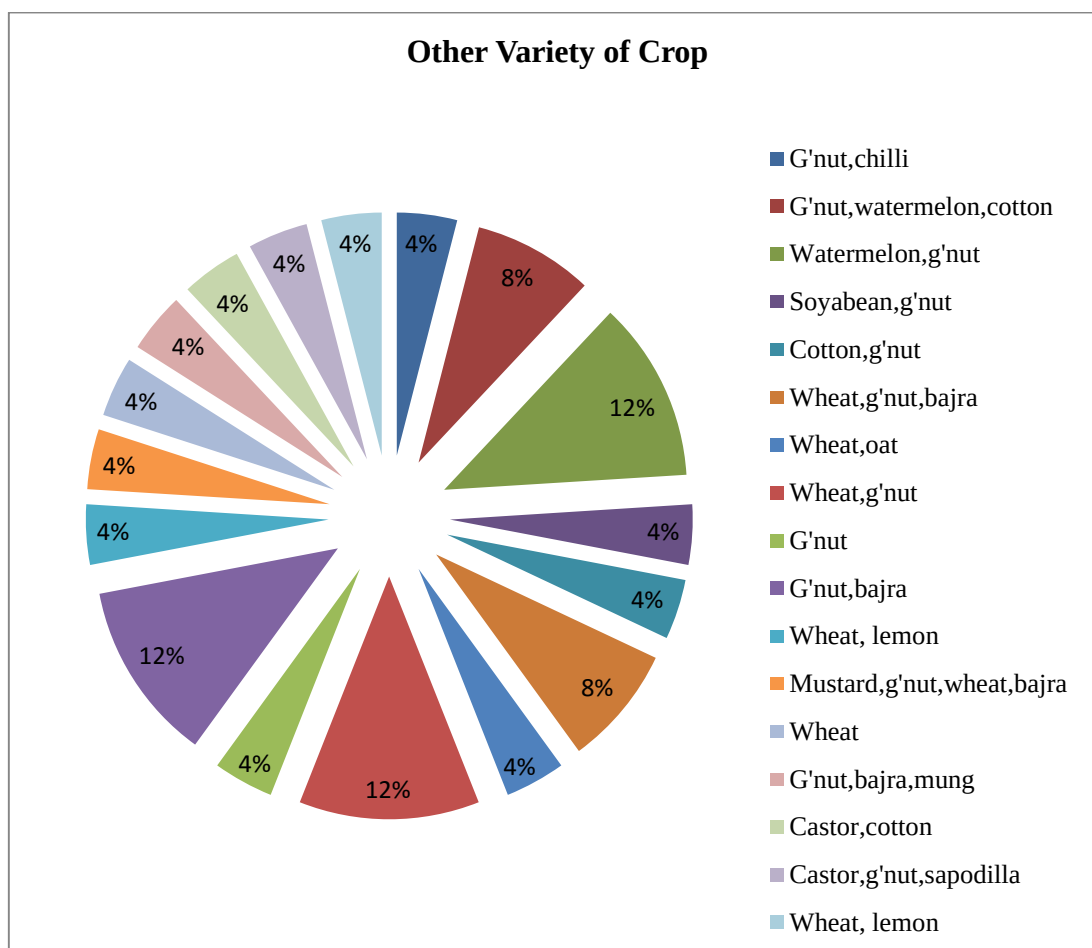


Chart 3.12 Other variety of Crop

3.13 HOW LONG ASSOCIATED WITH MCCAIN'S

Table No: 3.13 Year of associated with McCain's

Year of associated with McCain's	No. of Farmer's
2-3	4
4-5	4
6-7	8
Above 7	9

It was observed during the survey that 16 % (4) farmers were associated with McCain last 2 to 3 years. 32%(8) farmers were associated with McCain since 6 to 7 years and 36%(9) farmers had associated with McCain more than years 7 years.

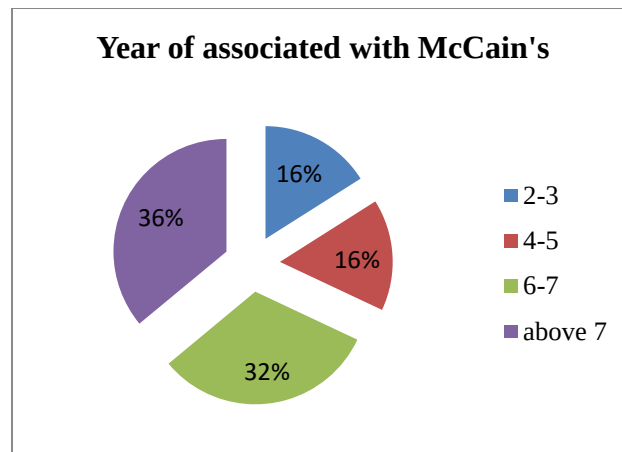


Chart 3.13 Year of associated with McCain's

3.14 CROP LOAN

Table No: 3.14 Crop Loan

Crop loan	No. of Farmer's
Yes (KCC farming)	21
No	3
Other	1

It was observed during the survey that majority 84% (21) farmers have taken the KCC loan for the farming. 12 % (3) farmers were not using the any kind of loan and only 4% (1) farmer was taken the loan from cooperative bank.

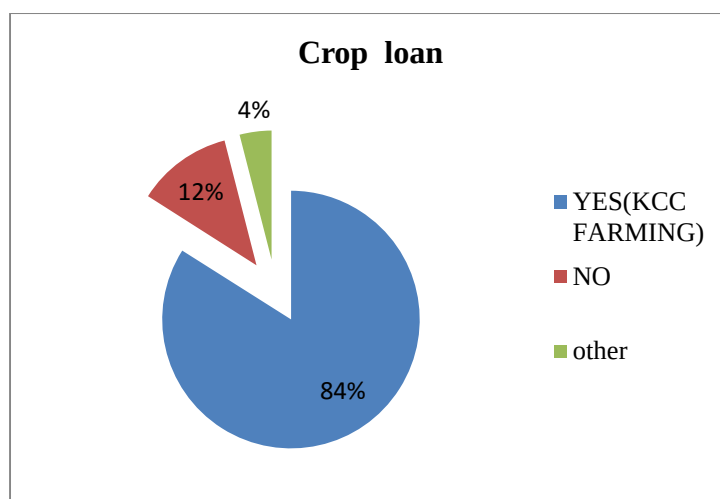


Chart 3.14 Crop Loan

3.15 OTHER BUSINESS

Table No: 3.15 Other Business

Other business	No. of Farmer's
Vetenary	2
Animal husbandry	1
Private business	6
Government service	1
Dairy	1
None	14

It was observed during the survey that majority 56%(14) farmers did not have other kind of business. 24 %(6) were having private business and 8 %(2) farmers had an Animal Husbandry business.

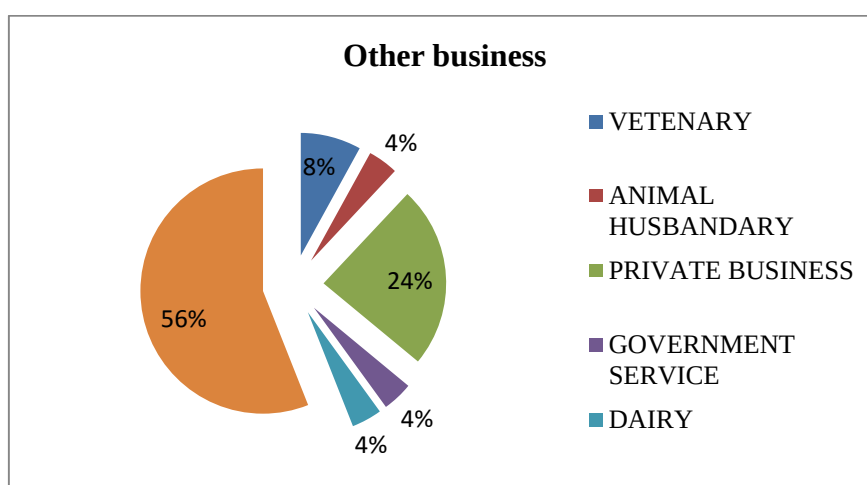


Chart 3.15 Other Business

3.16 CHANGES AFTER JOIN WITH MCCAIN OR PURCHASE ITEM

Table No: 3.16 Changes after join with McCain's or Purchase item

Changes after join with McCain's or Purchased Item	No. of farmer's
Digger,planter,pump	1
Tractor,digger,planter	4
Tractor,digger,planter,plough,land on lease 75 acre	1
Digger,planter	2
Digger	1
Tractor,planter	1
Planter,Digger,Trolley,Cultivator	1
Car,tractor,land	1
Tractor,digger,planter,plough,lessor land leveler	1
Tractor	1
Tractor,digger	1
Drip irrigation,Tubewell	1
Rotavator,Digger,Planter,plough	1
Sprinkler	1
Digger	1
Tractor,digger	1
Car,Tractor,Cattle	1
Car,Tractor,implement	1
2 Car, 2 Tractor, implements	1
Car,Tractor,implement,Cattle	1
Car,digger	1

It was observed during the survey that major of 16%(4) farmers purchased tractor and Digger. 8%(2) farmers purchased Digger and Planter and rest of all 76% farmers purchased different equipments likes Digger, planter, pump, tractor, trolley, rotavator, Digger, land ,car, sprinkler system, cattles, lesser land leveller etc.

Changes after join with McCain's or Purchased Item

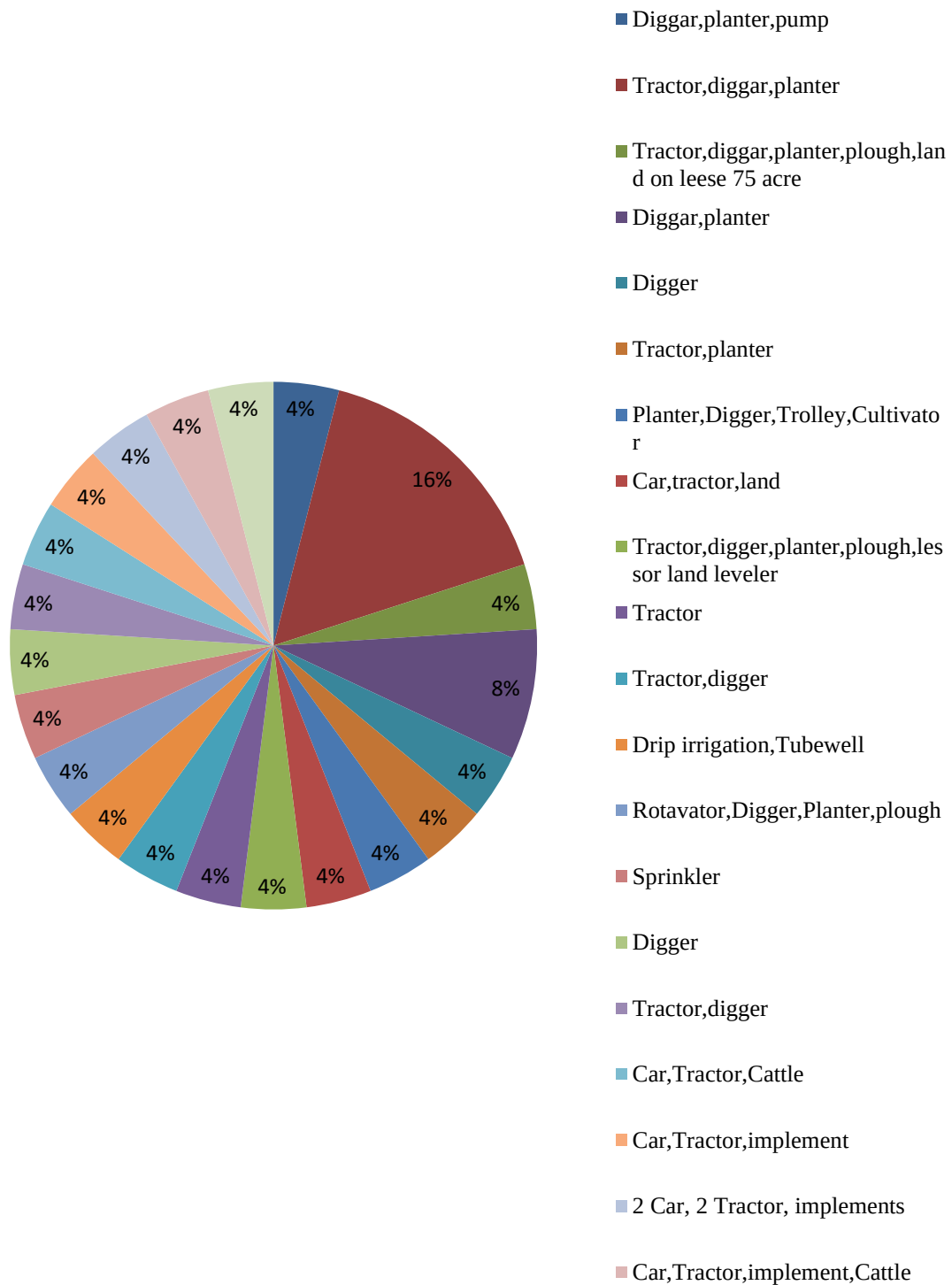


Chart 3.16 Changes after join with McCain's or purchased item

5. SUMMARY AND CONCLUSION

The study entitled “McCain’s Good Agricultural practices and their documentation in selected villages of Mehsana and Banaskantha”. The aim of the study was to formulate strategy that can reduce the risk of contamination through prevention and to find out the awareness level and adoption level about to taken the GAP by the farmers.

For this study the respondent farmers were selected from the Mehsana and Banaskantha districts of Gujarat state. From two districts 25 farmers were selected and survey was conducted by using semi structured schedules. Out of 25 farmers 90 percent farmers not having well equipped First aid box on land but some medicine was available for use.74 percent farmer’s response their workers used protective cloths for health safety while handling pesticides and grower comply with label instruction properly.100 percent farmers having a warning signs placed on access doors and pesticides stored inside the room.84 percent grower stored the protective cloths purely separated from pesticides and from food, feed, living quarters and food preparation and consumption areas. Only 26 percent farmers properly maintained all mechanical equipment for the purpose of unloading/transfer/and storage of the crop is properly as per the manufacturer’s standards.80 percent producers having good adequate lighting, mechanical equipment in operation can be shut down, and access must be secured on their farm.74 percent producers having good semi ventilated storage units on their farm.88 percent farmers site having living quarters habitable and have the basic services and facilities for the workers.82 percent producers are able to ensure that person dealing with pollution risk operation has the relevant training but have no document for justifying the same.100 percent farmers responded their workers who handle and apply pesticides are trained and have knowledge about correct pesticide usage.88 percent farmers did not having any emergencies action plan in the case of: 1) accidental injuries 2) fire,3) flood, 4)power failure, 5) freezing, 6)failure of water supply, 7) chemical or effluent spillage.100 percent producer land having a list of emergency telephone numbers are available on the farm but only 6 percent farmers having emergency telephone numbers near to the telephone point.100 percent farmers strictly prohibited smoking inside the storage facilities.82 percent farmers prohibit employing children under 15 years (other than producer family members) as permanent and seasonal workers.

All of 100 percent farmers did not used certified seeds but they used truthful seeds which are provided by McCains Company. Out of 25 farmers 38 percent farmers having a

referenced map for identification of their field/yard/plot etc. 76 percent farmer's production fields not nearer to the any types of non-agricultural activities are done, which contribute to air, water or soil pollution. 34 percent farmers having a simple pesticide application records are maintained. Only 4 percent farmers having a chemical application history record sheet for all crops for a minimum of 3 years. Only 2 percent farmers done the water test at the regional level. 100 percent farmers are aware about the testing of raw material for pesticide residues through the McCain Global Pesticide Safety Testing Programme.

98 percent farmers farming systems and cultivation techniques used on farm are eco-friendly. 100 percent farmers are preventing the soil erosion and soil fertility to improve the soil structure. 84 percent farmers avoids the soil compaction. 94 percent farmers fertilizer (organic or inorganic) application techniques are fully prevent pollution of ditches, streams, ponds, hedges, adjacent crops etc. 76 percent producer are aware of specific hazards related to the use of organic fertilizers. Out of 25 farmers no one can incorporated Sewage sludge in their field. Only 50 percent farmer's drainage systems are well isolated from the dirty water system if any near by. 100 percent grower meets the irrigation requirements through fully owned water pumps (Tubewell) and it's managed in sustainable way with use of efficient water delivery system. Out of 25 farmers 22 percent farmers have minimise negative effects on the farm's surroundings. Only 34 percent farmers have disposed used container of in a proper manner which removes the hazard. 98 percent farmers are properly reuse the waste and by-products after harvest. 94 percent farmers are doing good farming practice for the region to protect the natural resources like air, water, soil and plant and animal species. 80 percent farmers have biodiversity action plan for their farm to maintain biological diversity. 6 percent farmers are not allow to grow Invasive plant species on their farm. 100 percent farmers are not used baits on the farm because of there were no nedeed. 22 percent farmers are followed energy optimization & waste reduction practices.

98 percent farmer's farms have present a clean and tidy appearance. 44 percent Producers follow technical specifications for the proper use, maintenance and calibration of equipment. All the farmers are used poly bags for storage of fresh produce from the farm. Crops and produce transported from the farm are covered once loaded and trailers used during transit are inspected clean, and in good condition to prevent contamination of the product as per the company guidelines.

6 percent farmers have record the cropping history and agronomic activity of each field, greenhouse or area of land on farm. 28 percent farmers have the records regarding the sowing and planting times, irrigation and harvesting of at least 3 years maintained on farm. Out of 25 farmers no one can doing fumigation on the farm. All 25 farmer's farm did not have any written plans in place regarding the control of invasive wildlife in fields and storages. All 25 farmers have not any DSS plan activity, it's followed or maintains by the company it's self. Out of 25 farmers no one can used methyl bromide.

Out of 25 farmers 92 percent farmers' are doing crop rotation for pests and diseases minimization and for maintaining soil structure. All the 25 farmers are fully following the competent advisory for application fertilizer and pesticides. 78 percent farmers using the right spraying techniques for prevent drift of pesticide or vapour onto field margins, other areas or crops, animals, water courses or humans. 56 percent farmers are stored fertilizers and pesticides separately. 76 percent farmers having equipment for spraying of pesticides and applying fertilizer are kept in good condition. 74 percent farmers are spraying pesticides based on their experience or traditional methods. All the 25 farmers disposed surplus spray mix or container washings in a proper way. Out of 25 farmers 74 percent farmers are stored pesticides and fertilizer in secure, lockable, well ventilated, frost-proof, fire-resistant and well lit location. 88 percent farmers farm have a pesticides in it's original container. All 25 farmers are taken precautions to minimize microbial contamination of bio-solids, bio-fertilizers. 88 percent farmers were doing soil and/or plant analysis/testing carried out for correct and right amounts of fertiliser application. 72 percent farmers are stored seed separately from the fertilizer.

Socio-economic survey will give an idea about the farmers' socio-economic status before and after associating with McCain. . Out of 25 farmers' 40 percent farmers' age between the 51 to 60 years old, 28 percent farmers have an age between 41 to 50 years and 12 percent farmers have an age above the 70 years old. Out of 25 farmers 40 percent of the farmers have a below the 10th pass education. 28 percent farmers are the Graduate and 16 percent farmers are the post Graduate. Only 4 percent farmers have an education up to the Diploma. Out of 25 farmers 56 percent of the farmer's family highest educations up to the Graduate. 20 percent are the Post Graduate and another 20 percent have a highest education up to the 10th standards. Out of 25 farmers 68 percent of the Farmers have the 4 to 6 members in their family. 28 percent of the farmers have seven to nine family members. Only 4 percent of the farmers have more than nine members in their family. Out of 25 farmers 44 percent of the Farmers have the 1 to 2 Ladies in their family. 32

percent of the farmers have 2 to 3 Ladies in their family. Only 8 percent of the farmers have one Ladies in their family. Out of 25 farmers 40 percent farmers didn't have less than 16 year's members in their family. 28 percent of the farmers have only one person under the sixteen years old and 24 percent of the farmers have two persons under the sixteen years old. Out of 25 farmers 40 percent farmers didn't have any members above sixty years old but other side 40 percent farmers have one member in their family who has above sixty years old. Rest of 20 percent farmers have two people in their family who has above sixty years old. Out of 25 farmers 36 percent farmers have the land between 13 to 19 Acre. 32 percent farmers have land above the 26 Acre and 20 percent farmers have the land between 6 to 12 Acre. Out of 25 farmers 60 percent farmers have land with McCain's between 6 to 9 Acre. 32 percent farmers have land with McCain's between 2 to 5 Acre. Rest of 4 percent, 4 percent, are between 10 to 13 Acre and Above 13 Acre.

Out of 25 farmers 44 percent farmers are growing same variety of crop which is Santana, and rest of 56 percent farmers Growing different variety of crop like Innovator, Bafana, Shefudi Hill, Chipsona, Frysona, Cena back, Sarfomila, LR, Badshah etc.. Out of 25 farmers 40 percent farmers have the production between 10 to 12 tonns/Acre and other 40 percent farmers have the production between 13 to 15 tonns/Acre. Rest of 12 percent and 8 percent of farmers have the productions between 16 to 17 tonns/Acre and above 17 tonns/Acre. Out of 25 farmers 36 percent of the farmers are so far associated with McCain's since above seven years. 32 percent farmers are associated with McCain's since six to seven years. Followed by 16 percent & 16 percent farmers associated with McCain last four to five years & two to three year. Out of 25 farmers 84 percent of the farmers have taken the KCC loan for the farming. 12 percent farmers didn't not adopted the any kind of loan and only 4 percent farmers have taken the loan from cooperative bank. Out of 25 farmers 56 percent of the farmers have not any kind of other business. 24 percent farmers have its own private business and 8 percent farmers have an Animal Husbandry business. 4 percent, 4 percent & 4 percent farmers have the some other kind of service and business.

CONCLUSION

Many of the farmers adhere fully to the Good Agricultural Practices. Though some farmers are still not aware of GAP and related guidelines. Company needs to pitch in more efforts to acquaint the farming community about the GAP and its usefulness. Ultimately that will see cent percent farmers following GAP for a sustainable &

economic productivity. There seems certainly scope and opportunity for the GAP adoption in near future provided efforts in this regards are consistent, timely and efficient. This study has given the overview on the basis needed to plan, execute and document good agricultural practices in the farm that will ultimately provide the public with a safe and nutritious product in a manner that sustains agricultural productivity. It is also written to help conscientious growers examine and improve production practices to ensure they are generally accepted standards of good agricultural practices.

SUGGESTIONS

Findings from this study suggest that farmer training is an important tool in disseminating information on GAP. This will help improve farmers' awareness of GAP and eventually improve GAP adoption.

One of the implications for this is for research organizations and government to actively involve farmer organizations in disseminating information on GAP. More farmers have to be encouraged to join such farmer organizations and be actively involved.

Farmer training on GAP should emphasize on lowland rain-fed areas and irrigated areas where farmers are not trained in GAP. It would be important to have such farmer training for a couple of years while evaluating the groups after each growing season to check whether there is effect of training or not. More farmers are included in GAP trainings. Farmer organizations be encouraged and well structured.

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ANNEXURE

SCHEDULE

DETAILS OF THE FARMER	
Name of the farmer	
Village	
District	
Land holding	
Education	
Age	
Mobile No.	

1. STAFF

1.1 HEALTH & SAFETY

1. A. Whether first aid box is present on Producer's land?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

- B. If yes, is it well equipped?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

2. A. Whether protective clothing used for handling pesticides?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

- B. Do Growers comply with Label instructions?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

3. Does the farm have a written risk assessment for safe and healthy working conditions?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

4. Warning signs boards placed on access doors to the pesticide store?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

5. Are Emergency first aid facilities present?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

6. Are food items, living quarters, food preparation and consumption areas segregated from chemicals and equipments?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

7. Do Producers comply with all applicable local or regional worker health and safety regulations?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

8. Is all mechanical equipment properly maintained to manufacturers standards for the purpose of unloading/transfer/and storage of the crop?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

9. Whether access to and within the building provides easy and safe passage?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

10. Whether Air quality is adequate to allow access to the storage?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

11. Are on site living quarters habitable and have the basic services and facilities?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

1.2 TRAINING

1. Whether Producers are able to ensure that person dealing with pollution risk operation has the relevant training?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

2. Whether those Persons making decisions on the use of pesticides (external or in house) have the relevant training and Certificate?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

4. Have all workers received adequate health and safety training and are they instructed according to the risk assessment?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

6. Whether External advice, training, technologies and human resource management regularly sought?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

1.3 EMERGENCY ACTION PLAN

1. Whether Farm have plan in place to deal with emergencies in the case of:

1) Accident	☐	2) fire,	☐
3) Flood	☐	4) Chemical or effluent spillage	☐
5) Freezing	☐	6) failure of water supply	☐
7) Power failure	☐		

Remarks.....

2. Is list of emergency telephone numbers available at near Telephonic point?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

3. Whether Fire prevention precautions at restricted access to buildings, routine machinery maintenance, safe use and storage of flammable materials undertaken?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

4. Whether Smoking inside any storage facilities used for produce or chemicals is permitted?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

1.4 CHILD LABOUR

1. Do you prohibit employing children less than 15 years (other than producer family members) as permanent and seasonal workers?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

A. If children under the age of 15 are working on the farm, have you considered the individual situation of each child involved?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

B. If yes, then have been any measures designed to actually improve the wellbeing of the individual child taken?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

2. Do you ensure that Children or minors (below 18) are not involves in hazardous work or any work that jeopardizes their physical, mental or moral well being?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

3. Do you ensure that all children living on the farm can go to school or receive schooling at home?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

2. IDENTIFICATION & ORIGIN

2.1 GENETIC ORIGIN

1. A. Whether Seed used is certified?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

- B. Whether certified Seed origin is known and documented?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

2.2 IDENTIFICATION

1. Is system for identification of each field, yard, plot, etc well established and referenced on a farm plan/map?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

2. Is Research carried out to establish any history of, domestic land fill, chemical diffusion or burial of any potentially hazardous materials on the new land to be used for growing crops?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

4. Are Production fields located near pollution prone areas (i.e. industrial activities, roadside debris, road salt or foreign objects etc)?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

5. Is the information regarding the seed numbers or name of lots planted per field recorded by growers?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

6. Do Pesticide application records accompany or precede consignments leaving the production site and have details of the utilisation interval (interval between treatment and consumption)?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

7. Is chemical application history record sheet kept for all crops for a minimum of 3 years?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

8. Whether records are kept regarding each storage cell of the farm including; the register name(s) or code(s) of each field harvested, as well as the date of harvest?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

2.3 PROCEDURES

1. A. Whether assessment is done for risk of microbial, chemical and mineral pollutants in the irrigation, spraying, fluming and washing water sources?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

B. If risk is supposed, are tested performed?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

3. ENVIRONMENTAL PROTECTION

3.1 AIR, SOIL & WATER MANAGEMENT

1. Whether Farming systems and cultivation techniques used on farm are eco-friendly?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

2. Are measures in place to prevent the soil erosion?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

3. Are measures in place to improve soil structure and fertility?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

4. Are Measures in place to avoid soil compaction?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

5. Whether awareness among farmers regarding the status as nitrate vulnerable zones under government legislation?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

6. If yes, whether producers document and implement plans with the objectives of reducing pollution by nitrates?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

7. Are techniques used to prevent pollution of ditches, streams, ponds, hedges, adjacent crops etc. during application of fertilizers?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

8. Are producers aware of specific hazards related to the use of organic fertilizers?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

10. Whether plan has been documented & implemented to identify high pollution risk areas and their management?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

12. Whether Drainage systems in place to prevent dilution of dirty water systems by rain water & runoff?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

13. A. Whether untreated sewage sludge is used on the farm?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

- B. Whether ensure to not use treated sewage sludge within 4 years of growing a food crop?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

14. Whether permission to abstract water from water sources obtained from the relevant regulatory authority?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

15. Are Water resources managed in a sustainable way?
FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

16. Whether Irrigation delivery systems ensure efficient water use?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

19. Whether assessment of air quality at the farm is done to minimize negative effects on the farm's surroundings?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

3.2 WASTE MANAGEMENT

1. Is Waste Management plan and map showing areas of risk well documented on the farm site?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

2. Whether used containers which have held hazardous chemicals disposed off in a proper manner?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

3. Are after harvest, waste and by-products reuse and recycled properly?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

4. A. Whether Crop burning permitted in the area?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

B. If yes, then do you go for crop burning practices?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

3.3 BIODIVERSITY

1. Whether producer adhere to good farming practice for the region to protect the natural resources like air, water, soil and plant and animal species?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

2. Whether producer entered into an agri-environmental commitment with the government in relation to his farm?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

3. Whether biodiversity assessment been made?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

4. Whether farmer has a biodiversity action plan for their farm to maintain biological diversity?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

5. Whether farm practice habitat restoration being carried out?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

6. Whether Invasive plant species cultivation done?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....
...

7. Whether position of baits ensured to make it not accessible to non target species?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....
...

3.4 ENERGY EFFICIENCY

1. Are energy optimization & waste reduction practices followed?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....
...

2. Is energy or GHG assessment done for identification of areas where the use of non-renewable resources can be minimised?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

4. BUILDINGS & EQUIPMENT

a. CONSTRUCTION & MAINTENANCE

1. Whether sanitization of the farm as a whole ensured?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....
.....

2. Do Producers follow technical specifications for the proper use, maintenance and calibration of equipment?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....
.....

4. Whether Lighting on farming equipment and handling equipment and in storage are shatterproof or protected?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....
.....

9. Whether Coatings and lubricants applied to materials that may come into contact with produce are of food grade quality?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....
...

10. Whether the wood used in the storage handling or transportation of product surfaces is cleaned, maintained, repaired and inspected in a manner that minimizes sources of contamination?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

11. Do Vehicles that are used for chemical application carry information according to government regulations?

Such as:

-) hazardous substance warning plate
-) the chemical information sheet and label from the supplier
-) the application and calibration records

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....
...

4.2 PRODUCT STORAGE

1. Is Pre-season inspection regarding storage documented?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

2. Whether clean storage facilities and equipment prior to store loading and after de-loading are in place?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

3. Whether the crops are stored separately from other Genetically Modified (GM) crop?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

4. Whether Walls, floors and ceilings of storage building are easy accessible for cleaning purposes?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

4.3 TRANSPORT FACILITIES

1. Whether Crops and produce transported from the farm are covered once loaded and trailers used during transit are inspected, clean, and in good condition to prevent contamination of the product?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

5. AGRONOMY

a. AGRONOMY PLAN

1. Whether Producers conforms to the guidelines on crop production given in the McCain (or University) Crop Management Profile documents?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

...

2. Whether system is in place on farm to record the cropping history and agronomic activity of each field, greenhouse or area of land?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....
...

4. Is records regarding the sowing and planting times, irrigation and harvesting of at least 3 years maintained on farm?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....
...

5. Whether records for the fumigation of soil are maintained in the agronomy plan?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....
...

7. Whether written plans in place regarding the control of invasive wildlife in fields and storages?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....
...

9. Does the agronomy plan exist aimed at targeting the phasing out of methyl bromide?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....
...

10. Whether crop rotation done for pests and diseases minimization and for maintaining soil structure?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

b. PESTICIDES

2. Whether producers are able to demonstrate that pesticides are used at minimum levels & are according to Integrated Pest Management techniques to maintain crop health?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

3. Whether decisions about the application of pesticides are based on the recommendations of a competent advisor?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

4. Whether applications of pesticides are recorded in a crop diary or the equivalent?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

12. Whether special care taken to prevent drift of pesticide or vapour onto field margins, other areas or crops, animals, water courses or humans by using the right spraying techniques?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

13. Does the growers stored fertilizers & pesticides separately?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

14. Whether equipment for spraying pesticides and applying fertilizer are kept in good condition and have annual calibration to ensure accurate delivery?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

15. Whether the velocity of application, surface area to be covered and pressure of application system must be taken into consideration while calculating the quantity of pesticide spray?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

16. Is surplus spray mix or container washings disposed of in a proper way?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

17. Whether Pesticides stored are in secure, lockable, well ventilated, frost-proof, fire-resistant and well lit location?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

17. Whether De-registered or expired pesticides are disposed of using a certified or approved chemical waste contractor or the supplying company?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

18. Whether list of all the products approved for use on crops is available on farm?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

5.3 FERTILIZERS

2. Whether precautions taken to minimize microbial contamination of bio-solids, bio-fertilizers?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

3. Whether manure, bio-solids and other natural fertilisers are purchased, documented to reduce microbial or chemical contamination?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

4. Whether Contamination of fresh produce by manure, bio-solids or other natural fertilisers is minimised?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

5. Are manures, bio-solids etc stored at secure sites?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

6. Whether soil and/or plant analysis/testing carried out for correct and right amounts of fertiliser application?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

7. Whether decisions about the application of fertilizer are based on the recommendations of a competent advisor?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

8. Are Seeds, nursery stock or fresh produce stored separately from the fertilizers?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

5.4 PROCEDURES

1. A. Whether Workers and sub-contractors receive basic instruction for personal hygiene requirements?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

- B. Are sanitary measures & facilities in place for the working people in the farm?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

3. Whether Packaging or containers stored properly to avoid contamination by rodents, birds, chemical or physical hazards?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

5. Whether Producers carries out regular crop inspections and record the outcome of these inspections?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

6. Whether a protocol is in place to document the occurrence of contamination and disposal of contaminated crops?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

7. Whether bio-security policy is in place for restricted access to storage and other areas?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

8. Is Medical screening procedures in place to prevent ill workers from entering the premises?

FULL ☐ NO ☐ PARTIAL ☐ NON APPLICABLE ☐

Remarks.....

SCHEDULE: Socio Economic Status of Farmers

Name of the farmer

Village

District

Age

Education

Mobile No.

1. Information of the family member who has the highest education (if different from respondent or HH head)

2. How many family member (with the following categories)

Categories	Quantity
Total member	 Persons Female
Under 16 years old	 Persons
Above 60 years old	 Persons

3. How much total land you have Acre.

4. How much farming land with McCain.....Acre

5. Name of Grown variety of potato with McCain.....

6. Name of other variety of crop grown

7. How much was your Production/Acre?

8. How many years have you experienced in potato contract farming with McCain?
Years

14. Has your household had borrowed loan from following sources?

		Yes	No	Purpose
a.	Moneylenders			
b.	Micro-finances			
c.	Contract farming company			
d.	Middlemen connected to contract farming			
e.	Other(.....)			

15. What is you other business out of farming?

.....

16. What are the effects on the quantity of durable assets of farmer after engaging in contract farming with McCain?

	Durable Assets	Before	After	Increased	Same	Decreased
1.	Cars/van					
2.	Bikes					
3.	Land					
4.	House					
5.	Phones					
6.	Television					
7.	Bullock Cart					
8.	Tractor					
9.	Implement					
10.	Cattle					
11.	Others (specify)					