CHAPTER - II
REVIEW OF LITERATURE

Literature review purposes to characterize the grave points of current and collected knowledge on the topic under study. It pursues to describe, abridge, appraise, clarify and participate the content of primary reports. Moreover it forms the basis for the explanation for future research in the area. As such, review of literature has become an inevitable part of any scientific exploration. Hence a brief review of available literature, related to the study is presented in this chapter.

1. To study the pattern of fertilizer use in major crops
2. To study the awareness of farmers about the NPK liquid (bio-fertilizer) in Amreli district
3. To examine the growth rate and instability in selling of major fertilizer in Gujarat state and India
4. To identify the factor which are influencing the farmer to use of NPK liquid (bio-fertilizer)
5. To identify competitive advantages and marketing constraints of NPK (bio-fertilizer)

2.1 FERTILIZER USE OF PATTERN

Ali et al. (2010) analyzed the crop productivity as affected by fertilizer management option and boro–T.aman cropping pattern at farmers-fields. Total grain yield of rice was increased by about (16 %) in the IPNS fertilizer package compared to farmers practice. It was found that highest grain yield of boro rice 5.37 t/ ha and boro-T.aman 4.49 /ha were obtained from integrated plant nutrient system IPNS were farmers practice gave yield of 4.55 and 3.94 t/ha. The highest average gross margin 70385 tk/ha and marginal benefit cost ratio 3.78 was also obtained from IPNS plots.

Singh (2013) conduct study on water logging and its effect on cropping pattern and crop productivity in south-west Punjab. An attempt to focuses on worrisome issue of water logging that has been dogging the farmers in south west region of Punjab for a long time. Water logging is adversely affecting the cropping pattern and crop productivity in irrigation command area of South-west part of resulting in huge socio-economic loss. This increase the cost of production because farmers are used more pesticides and insecticides to increase productivity of crops.
Kaushik and Pahariya (2014) analyzed the pattern of fertilizer use on major crops grown in Hisar district of Haryana. In small farms one hectare in size of holding and one hectare increase in the irrigated area increased the expenditure on fertilizer by Rs.1598.24 and 2397.36 respectively. Large holdings the one hectare increase in size of holding resulted in an increase of Rs.1541.65 on fertilizer expenditure. Whereas one hectare increase in irrigated area on these farm increased the fertilizer expenditure by Rs. 2158.31. The percentage of irrigated area on small farms was more as compared with large farms, the expenditure on fertilizer per hectare of net area shown is also more on large farms than the small farms.

Sangral (2015) examined the changes in cropping pattern and crop diversification in Jammu and Kashmir. The farmers are gradually diversifying to commercial crops for the sake of higher earnings. The area under different food crops has been analyzed and interpreted through tabulation and simple percentage method. The area under other cereal and millets and pulses and other was 57 and 44 thousand hectares respectively which accounted 7.05 and 5.44 per cent of the total area sown. The area under fruits and vegetables was 22 thousand hectares (2.72 %) in 1956-66. The area under oilseeds and fodder crops was 38 thousand hectares (4.70 %) and 16 thousand hectares (1.98 %) respectively.

12.2 AWARENESS AMONG FARMERS

Shadiadeh (2011) studied the cucumber farmers' awareness and perception in 'Jordan valley' toward fertigation technology. Random sample of 250 farmers was selected for participation in the study. Data were collected through personal interviews with participants at their farms. Overall, farmers tended not to be aware or have low levels of awareness with respect to fertigation technology. Farmers tended to agree or were unsure about fertigation technology. Concerns over awareness of fertigation practices, technology and responsibility for conservation are discussed. The study recommends strengthening the role of agricultural extension in educating cucumber farmers through the preparation of the plan dealing with the detailed results of this study. the globalization define as the "rapidly increasing social, cultural, political and economic process of awareness, though not necessarily acceptance, of a global consciousness and interdependence by which people make decisions about their life and their work, decisions affected or influenced by expansion and interconnectedness of linkages throughout the whole world, not just the region or
country in which they live and work and decisions that over time collectively result in social, cultural, political and economic consequences, both intended and unintended”.

Kavitha and Vanitha (2012) analyzed the customer satisfaction towards toothpaste with special reference to Colgate. The main objective of to identify the various factor influencing customer in purchase of the toothpaste, to know the customer satisfaction level about the toothpaste. The research design used in this study is descriptive research design. Data was collected from 50 sample respondents. Data was collected by survey method, the survey was collected erode city in Tamil Nadu, through structured questionnaire with five point rating scale questions. Secondary data were collected from the available literature sources. For distribution of questionnaire to the respondents random sampling method was used and to collect the respondents opinion, survey was taken among the selected sample respondents. After collecting the data from the respondents, it was analyzed using factor analysis, percentage analysis ,and chi square method The collected data include customer satisfaction towards Colgate toothpaste personal product details.

Gupta and Kaur (2013) studied the brand awareness in rural area and to study the attitude of consumer in branded products of daily consumption goods. The brand awareness is showing increasing trend every were and Jagraon Region of Punjab state. The paper throws light on behavior of rural consumers regarding brands of daily consuming goods.

12.3 COMPOUND GROWTH RATE AND INSTABILITY

Wasim (2011) conducted study on trends, growth and variability of major crops in Baluchistan-Pakistan (1889-90 to 1998-99) .The increase in production growth in majority of fruit crops, is mostly due to its area growth rather than productivity growth. Growth of production of all fruit recorded a positive growth. Dates recorded highest growth rate of (21.84 %) per annum followed by all fruits. The production growth in grapes, apricot, peach and plums were mainly due to increase in its area growth rather than productivity growth. All the fruits except plums recorded negative and significant growth in period II compared to period I.

Narala and Reddy (2012) estimated growth and instability of cotton production in India for period of 1951-52 to 2010-11. It was found that growth of cotton area and production was significant during 1950s, 1990s and 2001-10. Growth rate of cotton production and productivity was the highest during the period 2001-10. Cotton
productivity also recorded positive growth during all the periods except during 1961-70, which has showed a negative growth rate. Among all the decades, the positive growth rate was found statically significant except the 1971-80 periods.

Paltasingh and Phanindra (2013) analyzed the performance of agriculture in terms of growth and instability of yield, area and production of major crops in Odisha. The growth analysis has shown a gloomy picture in the post-reform era, as instability has augmented during this period, rendering the agricultural sector of Odisha as unsustainable. The various causes of low growth rate have been identified. The study has discarded the hypothesis of direct relation between high growth and high instability. Weather variability and price risk as prime source of instability have been analyzed and the study has shown that mainly weather variability plays a pivotal role than price fluctuations in augmenting risk. The paper has suggested some policy implications to augment agricultural production in Odisha.

Sitaramababu et al. (2014) examined the trends in area, production and productivity of Bengal gram in Andhra Pradesh over a period of 1987-88 to 2006-2007. Compound growth rates of area, production and productivity were estimated by fitting semi log trend equation. Decomposition of output growth of groundnut was examined by fitting component analysis model. The compound growth rates of area production and productivity of Bengal gram over the period shows positively significant. The study also confirms the magnitude of variability in production of Bengal gram. The synchronized movements in area and productivity both was responsible for low instability / variability in Bengal gram of Andhra Pradesh. Further, the study conducted a decomposition analysis to determine the contribution total of different components to the growth rate. The decomposition analysis revealed that in the production of Bengal gram was completely due to the change in area under the crop as the yield and interaction effects were very small.

12.4 FACTOR WHICH ARE INFLUENCING THE FARMER TO USE OF NPK LIQUID BIO-FERTILIZER

Aji et al. (2001) revealed availability of seed and farm production factors, i.e., land and farm labour, formed a single factor that was found to be the most important factor influencing East-Javanese farmers’ decision to purchase seed. They concluded that farmers are unwilling to purchase seed, unless they believe that the seed will substantially generate profit. Since a large volume is needed, seed is usually the costliest single input in potato production.
Zaltman (2003) defined that, the brand liking is an overall positive evaluation of a brand. Liking is crucial to brand equity and is meant to depend on large number of favorable brand association in memory. He concluded that there are two prospective of the underlying mechanism that drives decision and preference. One is cognitive brand management perspective and another is the affective perspective which is more in line with the neuroscientific school of thought.

Aidoo et al. (2014) examined the key factors that explain the use or non-use of certified maize seeds by farmers in the Ejura-Sekyedumasi Municipal Area in Ghana. A standardized structured questionnaire was used to interview 106 farmers selected from five communities through a simple random sampling method. The data were analyzed using descriptive tools such as frequency distribution tables, percentages and arithmetic mean. Binary logistic regression model was used to examine the main factors that determine the use of certified seeds. Even though (95 %) of maize farmers were aware of certified seed maize, only (27 %) of them used certified seeds to produce maize. Results from the study showed that farm size, level of education, extension contact and access to credit were the main factors that significantly influenced the use of certified maize seed by farmers. Whereas educational level, extension contact and credit access had positive effect on the probability of using certified maize seeds, farmers with larger farm sizes were found to have a higher probability of not using certified seeds to produce maize.

Sivakumar and Kaliyamoorthy (2014) the studied on the factors influencing the purchase of agricultural tractors and to evaluate the most important factors like brand name, subsidy, horsepower, maintenance etc considered for the purchase of agricultural tractors. The study was carried out in Sivaganga district of Tamilnadu state. Descriptive research design has been used in this study. The researcher has used both primary and secondary data for this research. The researcher has collected primary data from the tractor owners who had bought their tractor for service to the dealer point during the study period in savaging district. The researcher has tried his level best to describe the facts that are prevailing in the market. The research output may help the manufacturer, and dealers of tractors and an insight about the consumer’s perception and it will further help them in promoting their product in a more effective way.
12.5 COMPETITIVE ADVANTAGES AND MARKETING CONSTRAINTS

Shashidhara et al. (2007) conducted study on the benefits and constraints in adoption of drip irrigation among the plantation crop growers in 2003-04 among areca nut and banana growers of Shimoga and Davanagere districts of Karnataka. Majority of drip irrigation farmers had expressed the advantages like saving of water (95.55 %) saving in labour cost for irrigation (92.22 %) and uniform application of water (91.11%). Improved quality of the produce was expressed by (70 %) of farmers. Drip irrigation had sown increased yield in recount and banana to the extent of 5.94 and 3.54 per cent respectively as compared to surface irrigation.

Namdev et al. (2011) examined the socio-economic and production hindering constraints in organic farming practices for paddy cultivation in Jabalpur district of M.P. The required primary data were collected by survey method through personal interview of the respondent. Ranking, average and per centage techniques were used to canalized the collected data. Owing to constraints regarding use of manure and bio-fertilizers, about (83 %) of sample respondents. Reported having unavailability of desired manure and bio-fertilizer as regards. The plant protection measure constraints that (84 %) incidents towards use of chemical pesticides, (68 %) of unavailability of bio-pesticides, respectively were reported by sample farmers. major constraints that the unavailability of government facilities (60 %), lack of proper guidance (72 %), irregular visit of agriculture officers and lack of testing facilities (72 %) of the total all size farms, respectively. Sincere efforts are made by the extension personnel to motivate the farmers to adopt improved production technology to minimize the yield gap and solution of constraints be provided in time to farmers.

Kashish et al. (2014) examined the marketed surplus, disposal pattern of milk and constraints faced by smallholder dairy farmers in Amritsar district of Punjab. For the study purpose, a sample of 80 dairy farmers consisting of 20 dairy farmers each from landless (LL), marginal (MR), small (SM) and others (OT) categories were selected from two blocks and four villages of Amritser district. It was found that milk production, consumption and marketed surplus has direct relationship with farm size. The average production of milk was 27.55, 37.05, 40.95 and 45.2 liters/day for LL, MR, and SM respectively and OT dairy farm and per capita availability of milk was 690, 843, 869 and 935 gm/day which were quiet above the national average of 290 gm. /day and minimum recommendation of ICMR of 250 gm/day. On an overall basis 11.26, 6.40, 7.40 and 18.12 liters of milk/day was sold by sample household through
dairy cooperatives, private milk processors, milk vendors, consumers and halwaiis, respectively. Except MR farmers, rest all of the selected dairy farmers sold their produce through modern milk marketing channels which includes milk cooperatives and private milk processor in the study area. Thus SM holder dairy farmers have equal access to modern milk marketing channel in the study area. Various constraints ranked by dairy farmers were costly feed and fodder ranked first followed by lack of A.I. and veterinary facilities in villages. The lack of organized milk marketing was at the bottom of the constraints identified by dairy households. The sample dairy farmers faced all the constraints with almost equal intensity irrespective of the size categories. Sanmukh and Koripalli (2015) analyzed the constraints of rice mills in West Godavari District of Andhra Pradesh during the year 2010-11 using “Garret's ranking techniques”. The prime constraints as faced by the rice mill were irregular power supply, non-availability of adequate labour, scarcity as (75 %) of the total production is submitted to Government as levy. The other minor constraints faced by the rice millers were lack of storage facilitates, high transportation cost, lack of timely service for repair and maintenance.