A BRIEF REVIEW OF LITERATURE

A thorough review of literature is necessary to acquaint with the research area and was felt essential in developing sound research methodology. This also helps to find out the available information related to the objectives of the proposed research and provides a basis for interpretation of findings. It helps to identify the gaps in research findings, the documentation and the events relating to a particular aspect of investigation. As such the literature on research studies related to feedback and feedback mechanisms was scanty a sincere attempt has been made to review the relevant literature under the following sub heads:

2.1 Profile characteristics of respondents
2.2 Documentation of the present feedback mechanism
2.3 Awareness and perception of respondents about feedback mechanism
2.4 Extent of participation in and utilization of feedback mechanism
2.5 Factors influencing the extent of participation in and utilization of feedback mechanism in Agricultural Extension Services
2.6 Problems and suggestions given by the respondents in giving and receiving feedback through feedback mechanism.

2.1.1 Feedback

Dewett (2003) suggested that individual feedback provided in groups is a complex phenomena necessitating an understanding of the multiple ways in which information in groups may be processed.

Sarada (2004) revealed that 40.00 per cent of research scientists perceived that feedback effectiveness of the extensionists was medium, followed by high and low groups. 38.00 per cent of extensionists perceived that feedback effectiveness of farmers was low.
Singh and Jha (2005) described that feedback is an error correction device which enables a system to adapt over a period of time. There has been extensive research on how feedback affects the behaviour of individuals but most of the work at the individual and group level has been highly theoretical with exceptions.

2.1.2 Feedback mechanism

Jagannadharaju (1997) indicated that the available facility of the extensionists is to pursue the person to person contact method in the management of agricultural farmers and non-involvement of scientists in supervision of field trials make job of extensionists still difficult in the present day agriculture.

Veerendranath (2000) reported that among the formal sources demonstrations were the most credible source and therefore ranked first followed by ANGRAU /KVK scientists, group meetings, field trips, voluntary organization, training programmes AEOs/VDOs, AOs, Agricultural consultants and ADAs.

Prasanna (2013) reported that the findings with regard to awareness of the respondents indicated that majority of the research scientists; extension personnel and farmers had high awareness about feedback mechanism. Further include with regard to perception of the respondents indicated medium perception for research scientists, extension personnel and farmers.

2.2 Documentation of present feedback mechanism.

Rajasekharan (1993) reported that after technology dissemination, feedbacks from farmers regarding the characteristics of the introduced technologies are rarely recorded. Development of technologies in research stations has become a continuous process without judging what is happening in the field.

Prasanna (2013) reported that various extension activities are being conducted by the state agriculture university and state department of agriculture under collaboration of ATMA in which research scientists, extension personnel and farmers are the stake holders for getting/ giving feedback.

2.3 Extent of participation in and utilization of feedback mechanism by the respondents

Reddy (1984) found that personal visits, telephone calls and trainings were most commonly used methods by research scientists for communication with farmers.
Ramprasad (2004) revealed that (45.30 per cent) of the research scientists had belonged to medium extent of participation in R-E-F linkage activities followed by high (28.00 per cent) and low (26.70 per cent). Whereas more than half (54.50 per cent) of the extensionists belonged to medium extent of participation followed by high (33.40 per cent) and low of (12.20 per cent) extent of participation. Further stated that 61.60 per cent of the farmers belonged to high participation group followed by medium (36.80 per cent) and low (1.60 per cent) extent of participation.

Sudharani (2004) revealed that majority of the extension scientists have conducted group discussions (54.29 per cent), training programmes (45.71 per cent) and slide show (28.58 per cent) and regularly used diagnostic filed visits (77.14 per cent), field trips (74.29 per cent), demonstrations (62.86 per cent), bimonthly workshops, ZREAC and field days (57.14 per cent). Further revealed that the majority of research scientists regularly participate in extension activities organized by other university centres and state development departments like ZREAC meetings (59.44 per cent), diagnostic field visits (49.65 per cent), bimonthly workshops (45.25 per cent).

Jahagirdhar and Balasubramanyam (2008) revealed that 70.00 per cent of the government extension personnel informed feedback through extension programmes to higher officers and 63.00 per cent of the respondents shared in monthly meetings. Feedback with UAS scientists was observed only in case of “Agriculture problems” in order to get possible solutions to solve the problems. The results revealed that majority (68.00 per cent) of the government extension personnel informed the agriculture problems to higher officers followed by sharing in monthly meetings(65.00 per cent).Further majority of the government extension personnel (76.00 per cent) belonged to medium feedback category, followed by (13.00 per cent) of the respondents found in low feedback category and a very meager percentage (11.00 per cent) in high feedback category.

Prasanna (2013) reported that the findings with regard to extent of participation in feedback mechanism by the respondents indicated medium participation by research scientists, extension personnel and low participation by farmers. And with regard to extent of utilization of feedback mechanism by the
respondents indicated that research scientists had medium utilization whereas extension personnel and farmers had low utilization of feedback mechanism.

2.4 Profile characteristics of respondents

2.4.1 Research scientist

2.4.1.1 Age

Jagannadharaju (1997) found that majority (70.17 per cent) of the research scientists were in middle age group followed by young (20.06 per cent) and old (8.77 per cent) age groups.

Sambireddy (1997) reported that majority of the research scientists were middle aged (52.50 per cent), followed by young age (35.00 per cent) and above middle age (12.50 per cent).

Ramprasad (2004) revealed that majority (58.60 per cent) of the research scientists were under middle age group of (35-45 years) and rest of them were under young (up to 35 years ) and above 45 years categories with (20.00 per cent ) and (21.40 per cent) respectively.

Sarada (2004) revealed that majority of the research scientists (60.00 per cent) were middle aged and remaining (40.00 per cent) of the research scientists were in above middle age group. But none were in young age.

Prasanna (2013) found that majority of the research scientists were categorized into middle aged (52.50 per cent), followed by young aged (32.50 per cent) and old aged (15.00 per cent).

2.4.1.2 Education

Prabha (1994) revealed that majority (59.50 per cent) of scientists were doctorates followed by post graduates (34.00 per cent) and post doctorates (6.50 per cent).

Jagannadharaju (1997) reported that majority (75.43 per cent) of the research scientists had doctoral degree followed by masters degree (17.56 per cent) and post doctoral degree (7.01 per cent).

Sambireddy (1997) found that majority (62.50 per cent) of them were doctorates and the rest of them were post graduates.
Ramprasad (2004) indicated that (65.30 per cent) of the research scientists were doctorates followed by post graduates (28.00 per cent) while (4.00 per cent) had doctoral degree with diploma and nearly (3.00 per cent) were Post graduates with diploma.

Sarada (2004) revealed that majority of the research scientists (54.00 per cent) had doctoral degree followed by masters degree (36.00 per cent). Only (10.00 per cent) had post doctoral degree.

Prasanna (2013) reported that majority of the research scientists had doctoral degree (62.50 per cent), followed by master degree (35.00 per cent) and post doctoral degree (2.50 per cent).

2.4.1.3 Experience

Prabha (1994) found that majority (56.00 per cent) of the scientists had medium experience followed by low (25.50 per cent) and high (18.50 per cent) experience.

Sambireddy (1997) found that majority (60.00 per cent) of the research scientists were under medium experience and the rest of them were equally (20.00 per cent) distributed under low and high experience groups.

Sarada (2004) revealed that research scientists (44.00 per cent) had high experience followed by almost equal (30.00 per cent and 26.00 per cent) with low and medium experience.

Prasanna (2013) indicated that research scientists were under very low experience (45.00 per cent), followed by low experience (35.00 per cent), high (15.00 per cent) and medium experience (5.00 per cent)

2.4.1.4 Training received

Prabha (1994) found that majority of the scientists (69.50 per cent) received low level of training, followed by no training (18.50 per cent) medium (9.50 per cent) and high levels (2.50 per cent) of training.

Jagannadharaju (1997) reported that majority (68.43 per cent) of the research scientists were less trained followed by high trained (31.57 per cent).
Sambireddy (1997) found that majority (82.50 per cent) of the research scientists had medium training followed by high (15.00 per cent) and low (2.50 per cent) training.

Ramprasad (2004) indicated that research scientists (98.70 per cent) had received 1 to 5 trainings and only (1.30 per cent) received more than 5 trainings and further he indicated that (42.70 per cent) of the research scientists had undergone up to 20 days of training followed by (34.60 per cent) more than 31 days and (22.70 per cent) for 21 to 30 days of training.

Sarada (2004) revealed that almost ¾ th of research scientists (70.00 per cent) were trained followed by ¼ th untrained research scientists (30.00 per cent) during last five years.

Prasanna (2013) found that majority of the research scientists were under very low training received (82.50 per cent), followed by low training received (12.50 per cent), high training received (5.00 per cent) and medium training received (0 per cent).

2.4.1.5 Extension contact

Prasanna (2013) found that majority of the research scientists were under low extension contact (57.50 per cent), followed by very low extension contact (20.00 per cent), medium extension contact (12.50 per cent) and high extension contact (10.00 per cent)

2.4.1.6 Socio-political participation

Prasanna (2013) found that majority of the research scientists were under medium socio political participation (55.00 per cent) followed by low socio political participation (30.00 per cent) and high socio political participation (15.00 per cent).

2.4.1.7 Reporting

Sambireddy (1997) found that majority of the sugarcane research scientists gave feedback through proper channel (extensionists) (50.00 per cent) while (25.00 per cent) gave feedback directly to the farmers, whereas the remaining (25.00 per cent) did not give feedback.
Prasanna (2013) found that majority of the research scientists fell under medium reporting (42.50 per cent), followed by high reporting (40.00 per cent) and low reporting (17.50 per cent).

2.4.1.8 Transport facilities

Prasanna (2013) found that majority of the research scientists were falling under low transport facilities (47.50 per cent), followed by medium transport facilities (42.50 per cent) and high transport facilities (10.00 per cent).

2.4.1.9 Job commitment

Sambireddy (1997) found that majority (67.50 per cent) of the research scientists were committed to their jobs to the medium extent followed by low (20.00 per cent) and high (12.50 per cent).

Sarada (2004) revealed that almost half (48.00 per cent) of the research scientists had medium job commitment whereas 1/3rd (30.00 per cent) of them had high followed by low (22.00 per cent) job commitment.

Prasanna (2013) found that majority of the research scientists were falling under medium job commitment (62.50 per cent), followed by low job commitment (20.00 per cent) and high job commitment (17.50 per cent).

2.4.1.10 Role awareness

Ramprasad (2004) inferred that 2/3rd of the research scientists had medium role awareness followed by high (18.65 per cent) and low (14.70 per cent) role awareness.

Sarada (2004) revealed that almost equal per cent (38.00 per cent and 36.00 per cent) of research scientists had high and low role awareness followed by (26.00 per cent) of them with medium role awareness.

Prasanna (2013) found that majority of the research scientists were falling under medium role awareness (50.00 per cent), followed by high role awareness (30.00 per cent) and low role awareness (20.00 per cent).
2.4.1.11 Achievement motivation

Ramprasad (2004) revealed that (76.00 per cent) had medium achievement motivation followed by high (13.30 per cent) and low (10.70 per cent) achievement motivation.

Sunil et al. (2009) reported that 53.34 per cent of cotton growers had medium achievement motivation followed by low (25.00 per cent) and high (21.66 per cent) levels respectively.

Prasanna (2013) found that research scientists were falling under low achievement motivation (45.00 per cent), followed by very low achievement motivation (32.50 per cent), medium achievement motivation (20.00 per cent) and high achievement motivation (2.50 per cent).

2.4.1.12 Participation behaviour in group

Ramprasad (2004) revealed that majority (77.30 per cent) of research scientists took part in discussion and also feedback.

Prasanna (2013) found that research scientists were falling under low participation behavior in a group (40.00 per cent), followed by high participation behavior in a group (30.00 per cent), medium participation behavior in a group (20.00 per cent) and very low participation behavior in a group (10.00 per cent)

2.4.1.13 Communication media used

Prasanna (2013) found that majority of the research scientists were falling under medium communication media used (57.50 per cent), followed by low communication media used (27.50 per cent) and high communication media used (15.00 per cent)

2.4.1.14 Level of interaction

Jaganndharaju (1997) indicated that majority (63.16 per cent) of the research scientists extensionists had medium interaction followed by low interaction (17.55 per cent).

Sarada (2004) revealed that forty four per cent of the research scientists had medium Research scientist –Extensionists interaction followed by high (36.00 per cent) and low (20.00 per cent).
Prasanna (2013) found that research scientists were falling under low level of interaction (35.00 per cent), followed by medium level of interaction (30.00 per cent), very low level of interaction (20.00 per cent) and high level of interaction (15.00 per cent).

2.4.2 Extension Personnel

2.4.2.1 Age

Ingale (1987) reported that 22 per cent of agricultural officers belonged to the advanced age group (above 50 years) (62.00 per cent) to the middle age group (41-50 years) and (16.00 per cent) belonged to the low age group (less than 40 years).

Jagannadhara (1997) found that majority (79.01 per cent) of the extensionists were in middle age group, followed by young (16.06 per cent) and old (4.93 per cent) age groups.

Khalil and Alsharajabi (1998) stated that majority of the respondents (53.00 per cent) and (72.00 per cent) were middle aged in both groups of extensionists and research scientists respectively. One fourth of the extensionists (25.00 per cent) were older as compared to their fellow research scientists falling in the same category (16.00 per cent). The same trend was observed in the young category where more extensionists (22.00 per cent) were found as compared to the research scientists (12.00 per cent).

Vidyasagar (1998) reported that majority of the respondents (52.85 per cent) fell in young age group (20-35 years) followed by (47.15 per cent) in older age group (above 35 years).

Sarada (2004) revealed that more than half (50.00 per cent) of the extensionists were in middle age (30 to 50 years) followed by (28.00 per cent) in above middle age (above 50 years) and only (16.00 per cent) were in the young age group (up to 30 years).

Sudharani (2004) indicated that majority of extension scientists (51.43 per cent) were middle aged followed by young age (31.43 per cent) and above middle age (17.14 per cent).
Prasanna (2013) found that majority of the extension personnel were categorized into young aged (52.50 per cent), followed by middle aged (35.00 per cent) and old aged (12.50 per cent).

2.4.2.2 Education

Ingale (1987) revealed that out of total respondents (AO s) (84.00 per cent) of them were B. Sc (Ag.) and (16.00 per cent) were M. Sc (Ag.) including Ph. D and post graduate diploma holders.

Jagannadharaju (1997) reported that majority of the extensionists had master degree, followed by doctoral and post-doctoral degree.

Sambireddy (1997) found that majority (86.60 per cent) of extensionists were graduates in agriculture, while (10.00 per cent) and (3.40 per cent) were having post graduate and doctorate qualifications respectively.

Ramprasad (2004) indicated that majority (72.20 per cent) of the extensionists were graduates, while (26.70 per cent) were Post graduates and only (1.10 per cent) had doctorate degree.

Sarada (2004) reveals that (56.00 per cent) of the extensionists had bachelor degree followed by (44.00 per cent) with post graduate degree, but none of them had doctorate degree.

Venkatarao (2004) observed that slightly more than half of the AOs (54.84 per cent) had the qualification of M. Sc (Ag.), followed by B. Sc (Ag.) (45.16 per cent) whereas among ADAs, (61.40 per cent) had the qualification of B. Sc (Ag.) followed by M. Sc (Ag.) (38.60 per cent).

Prasanna (2013) found that majority of the extension personnel had a graduate degree (62.50 per cent), followed by master degree (35.00 per cent) and doctoral degree (2.50 per cent).

2.4.2.3 Experience

Sampath (1994) found that (74.74 per cent) of the respondents possessed medium level of professional experience followed by low and high (15.26 per cent and 10.00 per cent).
Jagannadharaju (1997) reported that majority of extensionists (65.44 per cent) had medium experience followed by equal per cent of extensionists (17.28 per cent) with low and high experience respectively.

Sambireddy (1997) found that majority (68.34 per cent) of the extensionists were reported to put in medium level of service followed by high (16.66 per cent) and low (15.00 per cent) service.

Sarada (2004) revealed that equal per cent (40.00 per cent and 36.00 per cent) of extensionists had medium and low experience respectively, whereas only (24.00 per cent) had high experience.

Prasanna (2013) reported that majority of the extension personnel were under very low experience (62.50 per cent), followed by low experience (20.00 per cent), high (10.00 per cent) and medium experience (7.50 per cent).

### 2.4.2.4 Training received

Sampath (1994) revealed that three fourths of respondents (73.49 per cent) attended up to five training programmes.

Jagannadharaju (1997) reported that majority (68.43 per cent) of the extensionists were less trained followed by high trained (31.57 per cent).

Sambireddy (1997) found that majority (57.50 per cent) of the extensionists had medium training followed by low (30 per cent) and high (12.5 per cent) training.

Ramprasad (2004) indicated that (83.33 per cent) of the extensionists had received 1 to 5 trainings and only (16.67 per cent) received 6-10 trainings and further he indicated that (85.55 per cent) of the extensionists had undergone more than 31 days followed by (8.89 per cent) up to 20 days of training and 5.56 per cent for 21 to 30 days of training.

Prasanna (2013) found that majority of the extension personnel were under very low training received (67.50 per cent), followed by low training received (17.50 per cent), medium training received (12.50 per cent) and high training received (2.50 per cent).
2.4.2.5 Extension contact

Prasanna (2013) found that majority of the extension personnel were under low extension contact (57.50 per cent), followed by medium extension contact (30.00 per cent), very low extension contact (10.00 per cent) and high extension contact (2.50 per cent).

2.4.2.6 Socio-political participation

Prasanna (2013) found that majority of the extension personnel were under low socio political participation (85.00 per cent), followed by medium socio political participation (10.00 per cent) and high socio political participation (5.00 per cent).

2.4.2.7 Reporting

Sambireddy (1997) found that majority (60.00 per cent) of the extensionists given feedback through proper channel, (26.70 per cent) of them did not give feedback and (13.33 per cent) had given feedback direct to the source.

Prasanna (2013) found that majority of the extension personnel had tendency of medium reporting (72.50 per cent), followed by low reporting (20.00 per cent) and high reporting (7.50 per cent).

2.4.2.8 Transport facilities

Ingale (1987) revealed that among the total respondents 60 per cent were having better conveyance and nearly 40 per cent had with poor conveyance.

Prasanna (2013) found that majority of the extension personnel were under low transport facilities (70.00 per cent), followed by medium transport facilities (27.50 per cent) and high transport facilities (2.50 per cent).

2.4.2.9 Job commitment

Reddy (1986) found that half of the VEOs had medium job commitment followed by low (29.03 per cent) and high (20.97 per cent).

Sambireddy (1997) found that majority (70.00 per cent) of the extensionists were committed to their jobs to the medium extent followed by high and low extent.
Sarada (2004) revealed that equal per cent (36.00 per cent each) of extensionists had medium and high job commitment whereas (28.00 per cent) were with low job commitment.

Prasanna (2013) found that majority of the extension personnel were falling under medium job commitment (62.50 per cent), followed by high job commitment (27.50 per cent) and low job commitment (10.00 per cent).

2.4.2.10 Role awareness

Sarada (2004) revealed that extensionists almost equally (30.00 per cent, 34.00 per cent and 36.00 per cent) distributed in low, medium and high categories of role awareness.

Ramprasad (2004) inferred that the great majority (80.00 per cent) of the extensionists had belonged to medium role awareness followed by low (11.10 per cent) and high (8.90 per cent) role awareness categories.

Prasanna (2013) found that majority of the extension personnel were falling under high role awareness (57.50 per cent), followed by medium role awareness (30.00 per cent) and low role awareness (12.50 per cent).

2.4.2.11 Achievement motivation

Reddy (1986) reported that majority (80.00 per cent) of the agricultural officers in Guntur district of Andhra Pradesh had average achievement motivation.

Ravishankar (1998) observed that more than half (59.16 per cent) of the agricultural officers in the coastal districts of Andhra Pradesh possessed medium achievement motivation.

Ramprasad (2004) revealed that 72.2 per cent had medium achievement motivation followed by low 14.4 per cent and high 13.4 per cent achievement motivation.

Venkatarao (2004) depicted that majority (75.27 per cent) of AOs had medium achievement motivation followed by low (12.90 per cent) and high (11.83 per cent) and it is observed that (66.66 per cent) of ADAs had medium achievement motivation followed by low (19.30 per cent) and high (14.04 per cent).
Prasanna (2013) found that extension personnel were falling under medium achievement motivation (37.50 per cent), followed by low achievement motivation (30.00 per cent), high achievement motivation (27.50 per cent) and very low achievement motivation (5.00 per cent).

2.4.2.12 Participation behaviour in group

Ramprasad (2004) revealed that the extensionists have participated overwhelmingly in group discussions which clearly showed that the extensionists were making regular field visits to farmer fields and subsequent group discussions.

Prasanna (2013) found that majority of the extension personnel were falling under low participation behavior in a group (52.50 per cent), followed by medium participation behavior in a group (25.00 per cent), very low participation behavior in a group (17.50 per cent) and high participation behavior in a group (5.00 per cent).

2.4.2.13 Communication media used

Prasanna (2013) found that majority of the extension personnel majority of the extension personnel were falling under medium communication media used (60.00 per cent), followed by high communication media used (25.00 per cent) and low communication media used (15.00 per cent).

2.4.2.14 Level of interaction

Jaganndharaju (1997) indicated that majority (65.43 per cent) of the extensionists had medium interaction followed by low and high interaction (19.75 per cent and 14.82 per cent).

Sarada (2004) revealed that 42 per cent of the extensionists had medium interaction followed by 32 per cent and 26 per cent with high and low interaction with research scientists respectively. Further revealed that equal per cent (38.00 per cent) of extensionists had medium and high interaction. The remaining (24.00 per cent) had low interaction with the farmers.

Prasanna (2013) found that extension personnel were falling under medium level of interaction (42.50 per cent), followed by low level of interaction (22.50 per cent), high level of interaction (20.00 per cent) and very low level of interaction (15.00 per cent).
2.4.3 Farmers

2.4.3.1 Age

Jaganndharaju (1997) indicated that majority of the farmers (68.34 per cent) were middle aged (35-55 years) followed by young (20.06 per cent) and old age group (6.66 per cent).

Sambireddy (1997) reported that majority of the farmers (65.00 per cent) were middle aged followed by young (25 per cent) and old (10.00 per cent) aged.

Vijay kumar (2001) stated that majority of the respondents (50.83 per cent) were under middle aged category followed by young aged (30.84 per cent) and old age category (18.33 per cent).

Ramprasad (2004) stated that majority of the respondents (80.80 per cent) were under middle age category followed old age category (13.60 per cent) and young aged (5.60 per cent).

Sarada (2004) reveals that 44 per cent were of middle age group followed by 39.16 per cent and 16.67 per cent in old age and young age respectively.

Prasanna (2013) revealed that majority of the farmers were categorized into middle aged (45.00 per cent), followed by young aged (42.50 per cent) and old aged (12.50 per cent).

2.4.3.2 Education

Jagannadharaju (1997) reported that (21.60 per cent) farmers were having middle school education followed by functionally literates (18.33 per cent) and primary school education (11.66 per cent).

Sambiredy (1997) found that less than half (46.66 per cent) of the respondents possessed high school education followed by middle school education (30.00 per cent) followed by college education (15.00 per cent) and primary education (8.34 per cent).

Veerendranath (2000) revealed that majority of them (33.00 per cent) were illiterate. (18.89 per cent), (17.22 per cent), (16.11 per cent), (9.44 per cent), (6.67 per cent), (1.67 per cent) belonged to can read only, primary level of education, can
read and write, middle school of education, intermediate and belonged to graduates and post graduates respectively.

Ramprasad (2004) indicated that more than half (55.20 per cent) of the farmers possessed secondary education followed by degree (30.40 per cent), primary (8.80 per cent) and post graduate (4.80 per cent).

Sarada (2004) revealed that regarding the education of farmers 23.33 per cent were functionally literate, 20.83 per cent were illiterates, 19.16 per cent of them studied up to high school, 15 per cent had middle school education and 12.50 per cent studied up to primary school. Only 7.5 per cent had college education followed by 1.66 per cent with graduate degree.

Prasanna (2013) reported that majority of the farmers were of secondary education (32.50 per cent), followed by illiterate (27.50 per cent), primary education (15.00 per cent), functionally literate (10.00 per cent), graduate (7.50 per cent), intermediate (5.00 per cent) and master degree (2.50 per cent).

2.4.3.3 Experience

Jagannadharaju (1997) reported that majority (61.66 per cent) of farmers were having medium farming experience followed by low (25.00 per cent) and high (13.34 per cent) farming experience.

Sambireddy (1997) found that majority (65.00 per cent) of the farmers had medium experience followed by high (21.66 per cent) and low (13.34 per cent) experience in sugarcane cultivation.

Veerendranath (2000) revealed that majority of farmers (56.11 per cent) had medium farm experience and the rest of them (22.22 per cent) and (21.67 per cent) had high and low farming experience respectively.

Ramprasad (2004) indicated that majority (66.40 per cent) of farmers had more than 20 years of farming experience followed by 10-20 years (29.60 per cent) and less than 10 years (4.00 per cent) of farming experience.

Sarada (2004) revealed that equal per cent (37.50 per cent and 33.33 per cent) of farmers had high and low experience respectively whereas only (29.17 per cent) had medium experience.
Prasanna (2013) farmers were under medium experience (40.00 per cent), followed by low experience (27.50 per cent), very low experience (20.00 per cent) and high experience (12.5 per cent).

2.4.3.4 Training received

Sambireddy (1997) found that majority (66.66 per cent) of farmers had medium training and remaining were equally (16.67 per cent) each distributed under low and high categories of training received.

Ramprasad (2004) indicated that (67.20 per cent) of the farmers had received 1 to 3 trainings followed by (32.00 per cent) with 4-6 trainings and (0.80 per cent) had undergone more than 7 trainings and further indicated that majority (56.00 per cent) of the farmers had undergone 1-5 days of training whereas (29.60 per cent) had 6-10 days of training and 14.40 per cent with more than 10 days of training.

Sarada (2004) revealed that majority of farmers (64.17 per cent) were untrained remaining (35.83 per cent) were trained during last five years.

Prasanna (2013) reported that majority of the farmers were under medium training received (32.50 per cent), followed by low training received (30.00 per cent), very low training received (25.00 per cent) and high training received (12.50 per cent).

2.4.3.5 Farm size

Ramprasad (2004) indicated that (88.80 per cent) of the farmers possessed more than 5 acres of land followed by (9.60 per cent) with 2.5-5 acres and only (1.60 per cent) possessed less than 2.5 acres.

Sarada (2004) revealed that almost (47.00 per cent) half of the farmers were small followed by marginal (33.00 per cent) and big farmers (23.33 per cent).

Prasanna (2013) found that majority of the farmers that were falling under small farmers (42.50 per cent), followed by marginal farmers (37.50 per cent), and big farmers (20.00 per cent).
2.4.3.6 Extension contact

Kanani (1998) indicated that 64.17 per cent of the ground growers had medium extension contact whereas 15.23 per cent and 10.94 per cent of the respondents had high and low extension contact.

Ramprasad (2004) revealed that (68.80 per cent) of the farmers had medium extension contact followed by high (16.00 per cent) and low (15.20 per cent) extension contact.

Gopinath (2005) revealed that 46 per cent of the Bengal gram farmers had medium extension contact followed by those with low (32.67 per cent) and high (21.33 per cent) levels.

Chavada (2006) reported that 61.11 per cent of the respondents had medium extension contact whereas 25.56 per cent and 13.33 per cent of the respondents had low and high extension contact respectively.

Prasanna (2013) found that majority of the farmers that were falling under low extension contact (75.00 per cent), followed by very low extension contact (15.00 per cent), medium extension contact (7.50 per cent) and high extension contact (2.50 per cent).

2.4.3.7 Socio political participation

Veerendranath (2000) revealed that majority of castor growing farmers (50.00 per cent) had no membership in any organization, (32.22 per cent) had membership in one organization, (11.67 per cent) had membership in more than one organization, (4.44 per cent) of them were office bearers and rest (1.67 per cent) of them were public leaders.

Ramprasad (2004) revealed that great majority (80.80 per cent) of farmers had medium social participation followed by high (12.00 per cent) and low (7.20 per cent) social participation.

Natarajan (2004) started that 71.11 per cent of the respondents belonged to medium level of social participation followed by high (21.11 per cent) and low (7.78 per cent) social participation in case of beneficiaries, whereas 55.56 per cent belonged to medium level of social participation followed by low (25.56 per cent)
and high (18.88 per cent) social participation in case of non beneficiaries respectively.

Chandramouli (2005) observed that more than half of the farmers (55.83 per cent) had low social participation followed by medium social participation (32.17 per cent) and low (12.00 per cent) social participation respectively.

Prasanna (2013) found that majority of the farmers were under low socio political participation (82.5 per cent), followed by medium socio political participation (17.5 per cent) and had none high socio political participation.

2.4.3.8 Reporting

Sambireddy (1997) found that less than half (48.34 per cent) of farmers were found to have used extensionists for providing feedback. The rest of them (28.33 per cent) to have given feedback direct to the researchers where (23.33 per cent) did not give feedback to researchers.

Prasanna (2013) found that majority of the farmers were falling under medium reporting (65.00 per cent), followed by high reporting (22.50 per cent) and low reporting (12.50 per cent).

2.4.3.9 Job commitment

Prasanna (2013) found that majority of the farmers were falling under high job commitment (65.00 per cent), followed by medium job commitment (30.00 per cent) and low job commitment (5.00 per cent).

2.4.3.10 Role awareness

Prasanna (2013) found that majority of the farmers farmers were distributed equally under low role awareness (35.00 per cent), followed by medium role awareness and high role awareness equally (32.50 per cent).

2.4.3.11 Achievement motivation

Mrutyumjayam (1987) found that 68 per cent of farmers were having medium achievement motivation followed by 29 per cent high achievement motivation and only 3 per cent of the respondents were having low achievement motivation.
Kalyan (1990) revealed that among the small and medium farmers the majority belonged to the medium achievement motivation category (54.21 per cent and 43.01 per cent), while among the big farmers belonged to the high achievement motivation category (65.9 per cent).

Gopinath (2005) revealed that 70 per cent of the Bengal gram farmers had medium followed by farmers with low (13.33 per cent) and high (16.67 per cent) achievement motivation.

Prasanna (2013) found that slightly more than two-fifth (42.50 per cent) of the farmers had low achievement motivation, followed by 30.00 per cent, 22.50 per cent and 5.00 per cent of them were medium, very low and high level of achievement motivation, respectively.

2.4.3.12 Participation behavior in group

Prasanna (2013) found that majority of the farmers were falling under low participation behavior in a group (55.00 per cent), followed by medium participation behavior in a group (22.50 per cent), very low participation behavior in a group (12.50 per cent) and high participation behavior in a group (10.00 per cent).

2.4.3.13 Communication media used

Veerendranath (2000) revealed that 25.00 per cent of castor growing farmers had low mass media exposure, 52.78 per cent of them had medium mass media exposure and the rest of them 22.22 per cent had high mass media exposure.

Ramprasad (2004) revealed that majority (52.80 per cent) of the farmers belonged to high mass media participation followed by medium (30.40 per cent) and low (16.80 per cent) mass media participation.

Prasanna (2013) found that farmers were falling under low communication media used (42.50 per cent), followed by medium communication media used (35 per cent) and high communication media used (22.50 per cent).

2.4.3.14 Level of interaction

Jaganndharaju (1997) indicated that majority (56.66 per cent) of the farmers had medium interaction followed by high interaction (41.67 per cent) and low interaction (1.67 per cent).
Sarada (2004) revealed that (44.17 per cent) of the farmers had low interaction followed by (26.67 per cent) and (29.16 per cent) with medium and high level of interaction with extensionists.

Prasanna (2013) found that farmers were falling under medium level of interaction (42.50 per cent), followed by low level of interaction (37.50 per cent), very low level of interaction (15.00 per cent) and high level of interaction (5.00 per cent).

2.5 Factors influencing the participation and utilization of feedback mechanism

Jagannadharaju (1997) found that research scientist – farmer – interaction had significantly contributed towards technology management behaviour of research scientists. The age factor was found to be negatively significant, whereas information management orientation was found to be positively significant with information management behaviour of extensionists.

Oladele and Adu (2003) revealed that age, gender, marital status and frequency of contact with extension agents are significantly related to the constraint to feedback provision and inverse relationship of education and size with constraint to feedback provision.

Ramprasad (2004) revealed that the zero order correlation analysis of the variables like age, education, training received, self confidence, job experience, role awareness and role clarity were found significantly related to participation towards R-E-F linkages at 0.01 level of probability. The variables like job motivation and achievement motivation were not significantly related. Further he revealed that variables like age, education, training received, self confidence, job experience and organizational climate were significantly related to the participation of extension scientists at 0.01 level of probability whereas the variables role awareness and role clarity were significant at 0.05 level of probability and achievement motivation was found not significant towards R-E-F mechanism. While in case of farmers education training received, social participation, mass media participation, extension contact and communication behavior were significantly associated with the participation at 0.01 level of probability.
Sarada (2004) revealed that research scientists’ empathy, job commitment, role awareness, communicative initiative, communicative responsiveness and research extensionists interaction had positive significant relationship with their perceived feedback effectiveness of extensionists. Further extensionists education, training, empathy, job commitment, role awareness, communicative initiative, communicative responsiveness, extensionist-research interaction and extensionist-farmer interaction had significantly and positively related with their perceived feedback effectiveness of farmers.

Sudharani (2004) revealed that degree of participation and research scientist – farmer interaction was explained 29 per cent positive and significant variation in agricultural information dissemination behaviour of research scientists whereas degree of participation and age were negatively explained (28.00 per cent) of variation towards agricultural information management behaviour of research scientist. Job commitment was found to be contributing positively towards agricultural information acquisition behaviour of extension scientists.

Jahagirdhar and Balasubramanyam (2008) revealed that mass media, utilization, job satisfaction and achievement motivation were found to be significantly related to feedback behaviour of government extension personnel and only training is negatively significantly related at 5 per cent level of probability.

Prasanna (2013) found that the variables like education was negatively and significantly associated and extension teaching methods, communication media used, level of interaction, socio-political participation, reporting, extension service orientation were positively and significantly associated with extent of participation in feedback mechanism by research scientists. Whereas for extension personnel the analysis revealed that the variables like extension teaching methods, reporting were positively significant with extent of participation feedback mechanism. While for farmers the variables like education, experience, training received, reporting, participation behaviour in group, extension teaching methods, communication media used, farm size, ability to give feedback, level of interaction were positively significant with extent of participation in feedback mechanism.
2.6 Problems and suggestions elicited by the respondents about feedback and feedback mechanism

2.6.1 Problems faced by research scientists

Daivadeenam (1987) stated that lack of adequate subject matter knowledge among research scientists, improper functioning of diagnostic teams at research stations, administrative problems in use of mass media channels like printed material, radio and television, non-conducting of field days, farmer days, kisan melas at research stations as per schedule and non-involvement of research scientists in formulation of production and contingent plans of extension personnel were observed to be the major constraints.

Jagannadharaju (1997) revealed that inadequate staff, non-availability of needed facilities were the major constraints expressed by the research scientists in technology and information management.

Sarada (2004) revealed that majority of the research scientists perceived the problems like heavy work load due to diversified activities, lack of transport facilities to meet the extensionists, untimely feedback provided by diagnostic teams to research scientists, lack of encouragement from superiors for extension work and administrative procedures.

Prasanna (2013) found that during the study the major problems expressed by research scientists were inadequate feedback regarding the minikits is given by the farmers/extension personnel during the ZREACs and other meetings, less importance given to feedback after conducting meeting/programmes. The major suggestions offered by majority of the research scientists suggested that 'Coordination in arriving to the solution of farmers problems and in implementation of any programme', 'Fund allocation has to be specially allotted for transport facilities', 'Train the farmers and extension personnel in recording and updating the minikit results during ZREAC.'

2.6.2 Problems faced by the extension personnel

Jagannadharaju (1997) revealed that inadequate staff, non-availability of needed facilities and lack of plant doctoral advisory services were the constraints expressed by the extension personnel in technology and information management.
Reddy (1998) revealed that the problems encountered by agricultural officers were lack of qualified village extension officers, lack of inputs in time, political interference and additional charge of other posts in that order in terms of intensity.

Sarada (2004) revealed that majority of the extensionists perceived the problems like heavy work load due to diversified activities was a major constraint followed by logistic problems in visiting research stations, untimely supply of research publications, lack of short term and pre-seasonal training on locally relevant technologies, lack of opportunities to disseminate information through radio and television channels, timely feedback not received and inadequate materials and equipment to organize meals, exhibitions and campaigns.

Prasanna (2013) revealed that the major problems of the extension personnel were allotment of duties to the extension personnel other than works related to Agricultural Technology Management, contacts between the extension personnel and the research scientists were inadequate. The major suggestions offered by majority of the extension personnel (92.50 per cent) suggested that 'Reduce the allotment of other department duties for extension personnel or schedule the time without overlapping the timings of duties' followed by 'Develop good rapport between the extension & research scientists by conducting collaborative training session where presenters should be both (80.00 per cent)', 'Field level staff recruitment should be more which leads to transfer of technology from gross root level' (80.00 per cent), 'Funds allotment should be more to reach the farmers during crisis situation whenever required' (75.00 per cent).

2.6.3 Problems faced by the farmers

Oladeu and Adu (2003) revealed that the major constraints that were identified as affecting feedback provision on forestry related technologies include illiteracy, unstable government, busy schedule of extension agents and research scientists, low ratio of extension agents to farmers and poor infrastructure.

Sarada (2004) revealed that majority of the farmers perceived the problems like lack of information on location specific technologies as a major problem followed by insufficient number of extension workers, incomplete farm information on recent technologies, untimely messages, extensionists not paying attention to the farmers feedback, complexity of agricultural
information, irregular contacts of extensionists with farmers and inadequate training programmes for farmers on new farm technologies.

Prasanna (2013) observed that the problems faced by the farmers were lack of knowledge to identify the correct source of information for getting/giving feedback, lack of technical know–how and how to get/give feedback to the extension personnel/researchers. The major suggestions offered by majority of the farmers suggested that 'Importance of education has to be given to the farmers so that it may be helpful in getting/giving feedback. Educate the farmers about getting/giving feedback to the officials/scientists and whom to contact', followed by 'Unable to understand the technical words, so guide the farmers how to use the feedback mechanism in a proper way for maximum utilisation of the feedback' (67.50 per cent).