CHAPTER – VI

SUMMARY AND CONCLUSION
SUMMARY OF FINDINGS AND SUGGESTIONS

The present study makes a modest attempt to know the performance of dairy farming in a drought prone district and suggest some suitable measures for further improvement in the performance of dairy farming.

Objectives of the study

1. To know the progress of dairy farming in Andhra Pradesh in general and in Anantapur district in particular,
2. To assess the costs and benefits of dairy farming,
3. To outline the dairy development programmes,
4. To understand the problems of dairy farming and
5. To make suggestions for further development of dairy farming.

The study depended on primary and secondary data. The secondary data has been collected from various sources. To collect primary data random sampling method is followed. According to Animal Husbandry Department there are 5 divisions in the district, from each division one mandal is selected randomly. Again from each mandal 2 villages (one from rural, another is mandal headquarter) are selected. Altogether 100 farmers having dairy are selected.

The present study has been divided into six chapters.

- The first chapter introduces the subject of the study and also presents objectives, methodology and review of literature.
- The second chapter discusses the development of Dairy in Andhra Pradesh.
The third chapter presents the progress of Dairy farming and Dairy in Anantapur district.

The fourth chapter discusses the Dairy development programmes.

The fifth chapter analysis the status of dairy farming and the problems of sample farmers.

The sixth chapter presents the summary and conclusion.

Andhra Pradesh is the second largest milk producer state in the country. In 2008-09, Andhra Pradesh produced 254.56 lakh liters per day compared to the national total of 2,885.09 lakh liters per day. Andhra Pradesh stands first in buffalo population with 6959 lakh MTs of annual milk production. Presently about 24 lakh families in Andhra Pradesh are directly depending on livestock rearing for their livelihood. The contribution of this sector to GSDP is 7.29 percent. The total livestock in A.P. is 60174770. Livestock density per sq.km is high at 336 in Mahabubnagar district, while the same is low at 127 in East Godavari district. But the livestock density per sq.km in A.P. is 299. Number of livestock per human in A.P. is 0.79. Large number of livestock per human is 1.76 in Mahabubnagar district and low at 0.02 in Hyderabad district. In 1956 there were 38 lakh (56 %) cows and 29 lakh (44 %) she buffaloes, by 2007 the population of milch cows was 36 lakh (34 %) and that of she buffaloes was 70 lakh (66 %). It reveals that the percentage share of cows declined and that of she buffaloes increased significantly.

The population of she buffaloes is increasing due to high price for buffalo milk and the farmers need not take special care to maintain she buffaloes. In 1993 the total number of crossbreed cows is 377894 (7.98%). In 2007 the total number of Crossbreed cows is 1489989 (26.37%). In 1993 the total of female ND cattle was 4355582 (92.01%) and the total female cows was 4733476. The total ND cattle in 2007 was 4159529 (73.62), and total female cows were 5649518. It is evident that the percent of CB cows in milk rose to 40.66%
in 2003 to 43.11% in 2007 and also total CB cows from 7.98% in 2003 to 26.37% in 2007 and the percentage of ND cows in milk raised to 29.12% in 2003 to 36.79% in 2007. While the total female ND cattle decreased from 92.01% in 2003 to 73.62% in 2007. In 1993 the total buffalo population was 7800685.

The total buffalo population was 11164068 in 2007. It reveals that from 1993 to 2007 the share of buffaloes in milk population was more than 40% to total buffalo population and growth also positive in different categories but in two categories there was negative growth i.e., -0.59% in dry buffalo population. It is observed that the percentage share of crossbreed in Mahabubnagar, Khamamm, Medak, Nizamabad, Guntur, Kurnnol, Prakasam, Nalgonda and Warangal districts to total cattle population was less than 10 percent. The percentage share of CB in total cattle population falls between 10 and 25 percent in Krishna, Nellore, Kurnnool, Kadapa, Anantapur, Rangareddy and Karimnagar districts. The highest share of CB was in Chittor district and the lowest share was in Kurnnool district. Rural-wise there are huge number of households possessing livestock in Warangal district (533146) and lowest number of households possessing livestock in Rangareddy District (185097). Urban-wise there are large number of households possessing livestock in Kadapa district (209202) and lowest number of households possessing livestock in Kurnnool district (10325). As far as total number of households is concerned East Godavari district stands first with 1176930 households and Hyderabad district stands last with 151151 households. Thus the above analysis reveals that in rural areas 65.55 percent of total households possess livestock. In urban areas only 21.99 percent of urban households have livestock. Large number of milch animals (3540) were inducted in Nizamabad district while lowest milch animals (631) were inducted in Krishna district.
Anantapur district stood at 10th place with 1900 inductions. The total milch animals inducted in the state in 2009-10 were 38863. The price of crossbred cows over 2.5 years in milk varied from Rs.21857 in Krishna district to Rs. 8385 lowest in Anantapur district. While the average price of crossbred cows is Rs.13735. The price of Nondescript cows over 3 years in milk ranged from Rs.17342 in Prakasam district to Rs. 6086 in Kadapa district. The price of Graded Murrah buffalo is high at Rs.21797 in Krishna district and low at Rs.10170 in Chittor District. The price of Non Descript buffalo varied from Rs.17603 in Krishna district to Rs.7113 in Adilabad district. Cow milk production increased from 610000 MTs in 1979-80 to 2828000 MTS in 2009-10. But there is no continuous growth in cow milk production. The growth ranged from 0.46% in 1994-95 to 23.47% in 2002-03. While buffalo milk production rose from 1199000 MTs in 1979-80 to 7602000 MTs in 2009-10. In this case also the growth is not steady. The share of buffalo milk production in total milk production showed increasing trend from 62% in 1980-81 to 79% in 1996-97.

The total milk production in Andhra Pradesh increased from 1809000 MTs in 1979-80 to 10431000 MTs in 2009-10. It reveals that the milk production in Andhra Pradesh was raised by 5.76 times over a period from 1979-80 to 2009-10. In 2000-01, Guntur district with 568000 MTs of milk production was in the first position, Hyderabad district with 14000 MTs was in the last place. In 2009-10 the milk production is large i.e. 835000 MTs in Prakasam district and low at 7000 MTs in Hyderabad district. While Anantapur district stood at 12th place with 384000 MTs.

The average milk yield per non - descript cow in three seasons was 2 kg, per Crossbreed cow 7 kg, per Graded Murrah buffaloes it was 6 kg. In winter season the highest average milk yield was observed in the case of Cross breed cow and in summer season the
lowest average yield was noticed in the case of Graded Murrah buffaloes. In the case of nondescript cows and buffaloes the average milk yield was same in three seasons. It indicates that the milk production was high in winter season compared to other seasons. Cross breed cow milk production was high in Chittor District i.e., 496000 MTs which accounts for 21.55% of total crossbreed milk production in Andhra Pradesh and low in Adilabad district i.e., 7000 MTs accounts for just 0.38% of total crossbreed milk production.

Of the total cow milk production in A.P. the share of Chittor district is high 646000 MTs (22.83%), low in Hyderabad i.e.17000 MTs (0.60%). The Murrah buffalo milk production was high in Krishna district i.e. 539 thousand MTs that accounts for 13.44% while Murrah milk production was low at 38 thousand MTs (0.94%) in Nizamabad district. While Indigenous buffalo milk production was high in Prakasam district i.e. 367 thousand MTs (10.22%) and it was low in Hyderabad district i.e. 8 thousand MTs (0.22%). the graded Murrah buffalo milk production is more than that of indigenous buffalo milk production in A.P. The growth of cow milk production between 2000-01 and 2009-10 ranged from -8.04% in Mahabub Nagar district to 1600% in Hyderabad district, and the growth in total cow milk production in A.P. was 81.51% between 2000-01 & 2010-11. In A.P. the share of cow milk slightly declined from 28% in 2000-01 to 27% in 2009-10. It is observed that in A.P. the share of buffalo milk is higher than that of cow milk. The total cow milk production was high (646 thousand MTs) in Chittor district followed by Srikakulam district (202 thousand MTs) and East Godavari district (188 thousand MTs). In A.P the total cow milk production was 2827 thousand MTs. Out of these 1798 thousand MTs (67.60%) from CB and the remaining 1030 thousand MTs from Indigenous cows.
District-wise data reveals that in 2009-10 the Murrah buffalo milk production was high (539 thousand MTs) in Krishna district followed by Guntur district (441 thousand MTs) and Prakasam district (366 thousand MTs). While the Murrah buffalo milk production was very low in Nizamabad district (39 thousand MTs) followed by Adilabad district (42 thousand MTs), Hyderabad district and Srikakulam district (46 thousand MTs each). In 2009-10 the indigenous buffalo milk production was high (368 thousand MTs) in Prakasam district, while the indigenous buffalo milk production was very low (8 thousand MTs) in Hyderabad district. The total buffalo milk production was high (732 thousand MTs) in two districts i.e. Guntur and Prakasam. While the total buffalo milk production was very low (53 thousand MTs) in Hyderabad district. There are 167 BMCUs in A.P. Of these 33 are in Anantapur district followed by Medak (21), Kadapa (20). Scheme wise data reveals that more number of BMCUs is established under RKVY scheme. In 1990-91 the procurement was 222 lakh liters which increased to 277 lakh liters in 1991-92 registering a growth of 24.77%. By 2000-01 the milk procurement increased to 437 lakh liters (13.50% growth). In 2010-11 the milk procurement was 1300 lakh liters (10.07% growth). The growth ranged from 67.60% in 2007-08 to -27.94% in 1994-95. It means the milk procurement increased by 5.85 times over a period from 1990-91 to 2010-11.

The purchase price of cow milk at 13% (TS) total solids showed increasing trend from Rs.8.32 per liter in 2003 to Rs.15.06 per liter in 2010 registering a two fold increase. While the purchase price of buffalo milk at 10% fat increased from Rs. 16.50 per liter to Rs.35.02 per liter during the same period. It is observed that the purchase price of buffalo milk is nearly two times grater than that of cow milk. It is evident that per capita availability of milk
in A.P. increased from 185 grams in 1998-99 to 299 grams in 2007-08. In terms of per capita availability of milk, Andhra Pradesh ranks 8th position in India.

The number of animals given curative treatment is high at 42 lakh (7.58%) in Kurnool district, and low at Hyderabad district 2 lakh (0.36%). Anantapur district stood in 14th place in A.P. with 19 lakh (3.42%). Total animals given curative treatment in Andhra Pradesh are 554 lakh. The total animals given preventive treatments in Andhra Pradesh are 807 lakh. The total number of animals treated (curative, Preventive) is high at 116 lakh (8.52%) in Mahabubnagar district, low at 8 lakh (0.58%) in Hyderabad district. The total castrations done in A.P. are 1100000. The castrations done in 2009-10 was high (71281) in Mahabubnagar district and low in Hyderabad district (210). The total castrations done in A.P. were 9725252. In 2009-10 the vaccinations done are high at 75 lakh in Mahabub Nagar district and low at 1 lakh in Hyderabad district. While the total vaccinations done in A.P. are 891 lakh. In 2009-10 the highest number of 594415 (11.88%) artificial inseminations were done in Chittor district, and the lowest at 1555 (0.03%) in Hyderabad district (-61.125% growth). In A.P., Anantapur district stood at 9th place with 203892 (4.07%) Artificial Inseminations. The total number of artificial inseminations done in A.P. was 5003441. Calf births are highest at 110709 (17.64%) in Chittor district, lowest at 1341 (0.21%) in Hyderabad district. In A.P., Anantapur district stood at 12th place with 17989 (2.86%) calf births.

In 2009-10 the area under fodder development was large i.e. 8629 acres in Krishna district. Anantapur district stood at 7th place with 57653 acres. While the total area under fodder cultivation in A.P. was 958765 acres. The highest number of Gopala Mitra centers (289, 11.60%) are functioning in Chittor district. While the lowest number (19, 0.76 %) is
working in Rangareddy district. The highest number of artificial inseminations were done in Chittor district 201020 (13.13% to total) and the lowest in Rangareddy district with 8454 (0.55% to total). Chittor district ranks first in Gopala Mitra Centers, artificial inseminations and Calves born. Rangareddy district ranks least in Gopala Mitra Centers, Artificial Inseminations and Calves born.

The Government released an amount of Rs.6979 lakh for and the expenditure incurred was Rs.5457 lakh. The difference between Releases and expenditure was Rs.1522 lakh. Huge amount was allocated to some major schemes Viz. Supply of Milch Animals under CMP (Rs.1500 lakh), 18th Livestock Census (Rs.926 lakh), Construction of Building under CMP (Rs.825 lakh), ASCAD Central share (Rs.760 lakh) and Feed and Health Care to induct Milch Animals (Rs.550 lakh). From 2006-07 to 2009-10 the total animals insured were 519054, 50% subsidy utilized as premium released was Rs.1769 lakh, about 12177 claims were settled and an amount of Rs.1491 lakh was claimed. The total budget sanctioned by Government of India from 2000-01 to 2009-10 was Rs.8781 lakh and the released amount was Rs.7587 lakh. The gap between the budget sanctioned and released was Rs.1194 lakh (86.40%). the share of agriculture in agriculture sector showed declining trend from 18.86% in 1999-00 to 14.57% in 2008-09. The share of agriculture sector in GSDP also declined from 28.83% to 23.18% during the same period. While the share of livestock remained more or less same as it ranged from 6.37 in 2007-08 to 7.84 in 2002-03. Thus after agriculture, livestock is the major activity which contributes nearly 7% of GSDP.

The district has been divided into 3 revenue divisions namely Anantapur, Dharmavaram and Penukonda. There are 63 mandals (Anantapur division 20, Dharmavaram division 17 and Penukonda division 26) in the district. The geographical area of the district is
19,130 sq.kms which forms 19.13 percent of the state’s geographical area. According to the 2011 census, the district has a population of 40.83 lakh consisting of 20.65 lakh males (51.07%) and 20.18 lakh females (48.92%). Agriculture is the main source of livelihood to a majority of the population in the district. Of the total workers, 16.41 percent are cultivators and 15.53 percent are agricultural laborers according to the 2001 census. The net irrigated area accounts for about 19.23 percent. The average annual rainfall of the district is 552 mm. The rainfall is quite erratic resulting in frequent droughts. Many small and marginal farmers and agricultural labourers do not have full employment in crop farming throughout the year. In these circumstances, dairying serves as a useful subsidiary occupation to many agricultural households by way of providing either full- time or part-time employment. According to the 2007 livestock census, the district has a total bovine population of 15, 42,573, out of which cattle account for as much as 53.37 percent and the rest being buffaloes. The total milch animals stood at 2, 87,740 accounting for 18.65 percent of the total bovine stock. Of the milch animals the cows accounted for 47.52 percent and she-buffaloes 52.47 percent further, among the cattle, 20.29 percent are of crossbred variety.

The growth in cattle population ranged from 3.71% in 2003 to 22.84% in 2007, the growth in buffalo population from 29.88% in 2003 to 67.63% in 2007 and the growth in total livestock population from 13.39% in 1999 to 59.96% in 2007. It indicates that the percentage share of cattle and buffalo population in livestock is declining. But the share of buffalo population is declining slowly than that of cow population. The cattle population increased from 630721 in 1993 (29.27%) to 854256 (14.33%) in 2007. Buffalo population increased from 266373 (12.36%) in 1993 to 688317 (11.55%) in 2007. While the total livestock increased form 2154210 to 5957358 during the same period. In the total livestock
the share of Sheep population is more than 50% followed by Cattle population (14%) and buffalo population (12%).

In 2011 Hindupur division had large number of CB cattle population (16111, 40.13%), Uravakonda division had large number of ND cattle population (32393, 28.77%), ND buffalo population (36903, 26.74%). The total milch animal’s population was 73100 in Uravakonda division. Among all divisions, Anantapur division has large share of GM buffalo’s population (4599, 37.08%). But Uravakonda division has least number of GM cattle population (1920, 4.78%), Hindupur division has least number of ND cattle populations (16356, 14.52%), Dharmavaram division has least number GM buffalo population (1298, 10.46%) and Hindupur division has least number of ND buffalo (18531, 13.42%). The above analysis reveals that the share of C.B. in total cattle population was relatively high in Dharmavaram and Hindupur divisions. While in 1998-99 the total milk production in Anantapur district as a whole was 142 thousand MTs. By 2009-10, 74 thousand MTs (54.81%) was indigenous cow milk production, 61 thousand MTs (45.18%) was crossbred cow milk production and 135 thousand MTs (35.15%) was total cow milk production. About 149 thousand MTs (59.83%) was gradedmurrah buffalo milk production, 100 thousand MTs (40.16%) was indigenous buffalo milk production and 249 thousand MTs (64.84%) was total buffalo milk production. The total milk production was 384 thousand MTs by 2009-10. The growth in total milk production was negative i.e. -10.34% in 2001-02, -5.12% in 2003-04 and -7.4% in 2005-06. The total cow milk production declined from 39.43% in 1998-99 to 35.15% in 2009-10. The share of buffalo milk production increased from 60.56% to 64.84% in the same period.
During 2003-07 of all the divisions in Anantapur district large number of milch animals (Cows & Buffaloes) was found in Uravakonda division. While the least number of milch animals in milk i.e. 44227 with 25968 MTs of milk production was noticed in Hindupur division. But during 2007-11 Uravakonda division stood in the first place in number of cows in milk i.e. 34313 (22.46%) with 146562 MTs of cow milk and number of buffaloes in milk 150395 (57.03%) with 135484 MTs of buffalo milk. But during 2007-11 Uravakonda division has large quantity of ND cow milk production i.e. 17259 thousand MTs (28.77%), Hindupur division ranked least in ND cow milk production i.e. 8714 thousand MTs (14.52%), but the same division stood first in CB cow milk production of 34747 thousand MTs (40.13%), Uravakonda division ranked least in CB cow milk production of 1414 thousand MTs (4.78%). Anantapur division had huge quantity of GM buffalo milk production i.e. 9575 thousand MTs (37.08%). While Dharmavaram division stood last with 2702 thousand MTs (10.46%). Uravakonda division ranked first in ND buffalo milk production i.e. 29327 thousand MTs (26.74%). While Hindupur division stood last with 14727 thousand MTs (13.42%).

In ATP district there were 151725 thousand cows in milk and their milk production was 146562 MTs. The number of crossbred cows in milk was 40144 thousand and their milk production was 86579 MTs. Gorantla mandal has high number of total cows in milk i.e. 5284 thousand, Kadiri mandal has least number of cows in milk 488 thousand. Dharmavaram mandal has huge quantity of cow production (7242 MTs) and Kadiri mandal has least quantity (325 MTs) of cow milk production. It indicates that in ATP district Narpala mandal is in first place in number of GM buffaloes in milk (790 thousand) with 1645 MTs of GM buffalo milk production. Nallamada mandal is in the last place (2 thousand) with 4 MTs.
of GM buffalo milk production. Bommanahal mandal has huge number of ND buffaloes in milk (4627 thousand) with 3677 MTs of ND buffalo milk production. Roddam has least number of ND buffaloes in milk (841 thousand) with 668 MTs of ND buffalo milk production. Narpala mandal is in the first place in total buffaloes in milk (5095 thousand) with 5066 MTs of total buffalo milk production. Chilamattur mandal is in the last place in number of total buffaloes in milk (992 thousand) with 811 MTs of buffalo milk production.

The total number of animals in milk was 1014 thousand. Out of them, 682 thousand MTs (67.25%) was produced in winter, in rainy season there was 109 thousand MTs (10.74%) of milk production. The total milk production in Anantapur district was 383 thousand MTs. Out of this huge quantity of milk 238 thousand MTs (62.14%) was produced in winter season, the least quantity of milk only 72 thousand MTs (18.79%) was produced in rainy season. During 2007-11 there was improvement in the milk production to 58643 thousand MTs (20.79%) in Anantapur division, in Dharmavaram division 56568 thousand MTs (20.05%), in Hindupur division 62269 thousand MTs (22.07%), in Penukonda division 49915 thousand MTs (17.69%) and in Uravakonda division 54649 thousand MTs (19.37%). While the total milk production was estimated at 282044 thousand MTs which recorded a growth of -8.25%. It reveals that in Anantapur, Dharmavaram, Hindupur and Penukonda divisions the growth is positive. In Uravkonda and in total milk production the growth is negative.

There are 2 milk chilling centers, one is at Anantapur with the handling capacity per day of 25,000 ltrs. and another one is at Hindupur with the handling capacity per day of 30,000 ltrs. The MCC at Anantapur was started in 1971 and the same at Hindupur was started in 1979. There are 12 Bulk Cooling Units (BCUs) at Kadiri, Dharmavaram, Kothacheruvu, Gorantla, Roddam, Tadipatri, Klayandurg, Kanekall, Madakasira, Rolla, Gudibanda and O.D.
Cheruvu. The capacity per day of these units ranged from 2000 ltrs to 5000 ltrs. All the units have 29 milk routes which cover 485 villages of 45 Mandals out of 63 mandals in the district. It is observed that the milk route of Anantapur unit covers 10 mandals (77 Villages), Hindupur unit covers 4 mandals (144 Villages), and Kalyandurg unit covers 5 mandals (36 Villages). It implies that dairy development took place in and around Anantapur and Hindupur Mandals. It is observed that Hindupur MCC procures huge quantity of milk i.e. 1800 ltrs per day followed by Anantapur unit (11,500 ltrs), Gudibanda unit (5,700 ltrs) and Roddam unit (5,600 ltrs). While the milk procurement is less at Tadipatri unit (500 ltrs), Kadiri (1200 ltrs), Kanekall (1200 ltrs) and O.D. Cheruvu 1200 ltrs.

In 2002-03 there were two milk chilling centers, nine bulk cooling units, 42 co-operative milk collection centers, 309 private milk collecting centers in the district. The average milk procurement per day was 1019 thousand liters, the average milk supply was 115 thousand liters per day while the average procurement price per liter was Rs.8.15 and that of selling price was Rs.11.00 per liter. By 2007-08 the number of milk chilling centers was same, the bulk cooling units increased to 10 (11.11% growth), the milk collection centers (cooperative sector) to 44, the collection centers in private sector to 419 in 2005-06. The average milk procurement per day increased from 1484000 ltrs to 2730000 ltrs. While the average milk supply per day declined to 76 thousand liters.

The milk procurement price per liter was Rs.11.00 and the average milk supply price per liter was Rs.16.00. Hence there is increase in milk procurement price and supply price. The average rate paid for buffalo milk was Rs.18 per liter and Rs.14 per liter of cow milk. The average earnings per year by farmers were estimated at Rs.45 crore. There are 1100 Vijay milk collection centers. About 55000 milk producers were benefited.
There are 15 mini feed mixing plants. A total of 170 electronic milk testers were installed at village level. About 19 automatic milk collection units were started at mandal level in Anantapur district.

The milk procurement increased from 122 lakh liters in 2002-03 to 269 lakh liters in 2009-10. Per day average milk procurement was 0.74 liters (-4.87% growth) in 2010-11. It reveals that milk procurement growth is not steady but there is growth in milk procurement. The Anantapur dairy covering 110 villages, procures huge quantity of milk i.e. 14370 ltrs (18.52%), Hindupur dairy stood at 2\textsuperscript{nd} place in milk procure with 13956 ltrs (17.98%) per day and it occupies first place in the number of villages covered i.e. 142 (15.95%). The total milk procured by 42 units in the district was estimated at 77581 ltrs per day covering 890 villages.

It is observed that the number of Asst. Directors increased from 18 in 2002-03 to 26 in 2007-08, Veterinary Asst. Surgeons declined from 95 to 89, Jr. Vet. Officers declined from 21 to 19, Livestock Assistants increased from 29 to 31, Veterinary hospitals declined from 19 to 18, Vet. Dispensaries increased from 90 to 94 and Rural Livestock Units increased from 66 to 83 during 2002-03 to 2007-08. Of five divisions namely Anantapur, Dharmavaram, Hindupur, Penukonda and Uravakonda, Hindupur has more number (12) of Jr. Vet. Officers, Hindupur and Uravakonda have high number (20 each) of Vet. Hospitals. In terms of Veterinary dispensaries, Hindupur has high number of 20 veterinary dispensaries. Hence it is observed that the veterinary facilities are not sufficient in the district.

The number of cases treated increased from 19480000 in 1999-00 to 11274083 (478.75%) in 2009-10. The number of castrations done declined from 83000 to 70506 (-
15.05%), the number of vaccinations done increased from 3300000 to 6993403 (111.92%),
the number of Artificial Inseminations done increased from 6700 to 203892 (204.31%),
number of calves born increased from 17989 to 69018 (283.66%). While the area under
fodder development increased from 28480 to 57653 acres (102.43%) and the number of A.I
centers remained at 101 during the period from 1999-00 to 2009-10. It is observed that there
is no significant growth in the number of veterinary services between 2000-01 and 2007-08
except in the case of rural livestock units (6.34% growth)

The quantity of fodder seed supplied was 20 MTs and the distributed fodder seed
was 20 MTs in 2000-01. In 2009-10, a quantity of 452 MTs of seeds (555.07% growth) was
supplied and distributed. It indicates that the average price of Graded buffalo increased from
Rs. 5000 to Rs. 13942 (178.84%), Indigenous buffalo price increased from Rs.4444 to Rs.
7831 (76.21%). Crossbred cow price increased from Rs. 5408 to Rs. 8385 (55.04%),
Indigenous cow price increased from Rs. 4040 to Rs.7175 (77.59%) between 1997-98 and
2008-09. Thus the price of GM increased significantly compared to the prices of other milch
animals. It shows that a total of 8685 animals were inducted in 2009-10. Out of these 2860
(32.93%) were inducted under Prime Minister’s Package, 3480 (40.06%) under Chief
Minister’s Package and the remaining 2345 (27%) under Rastriya Krishi Vikas Yojana. The
total number of households in Anantapur district was 869340. Of them 500887 (57.61%)
households are possessing livestock. Out of 664461 households in rural areas, a total of
443136 (66.69%) households are possessing livestock. Of 204879 urban households 57751
(28.167%) households possess livestock. It implies that most of the rural households possess
livestock.
Altogether 100 dairy farmers have been chosen from five selected mandals. Out of 100 respondents, 55 belong to backward classes, 36 OC, 7 percent belong to Seduled castes and the remaining 2 belong to ST. The data reveals that about 53 percent of respondents are illiterates, 28% studied primary education, 15 percent have secondary education and only 4% completed higher education. A total of 34 (34%) members fall in the age group of 30-40 and another 34 (34%) fall in the age group of 40-50 years, and 27 members between 50 and 60 and the remaining 5 fall in the age class of less than 30 years. Out of 100 respondents 97 members are married, 2 members are unmarried and the remaining one is widowed. Of 100 households 77 are nuclear families and the remaining 23 are joint families.

Out of 100 selected households, 74% engaged in dairying, 19% families depend on agriculture and the remaining 7% are labourers. Thus it reveals that more than 70% of the selected families depend on dairying for their livelihood. About 60 percent of respondents have less experience between 5 & 10 years in dairying, 10 percent of respondents have experience above 25 years in dairying, 9 percent of respondents have 11 to 15 years of experience and only 21% of respondents have 16 to 20 years of experience in dairying. There are 505 members in selected households. Of them 257 (50.89%) are males and 248 (49.10%) are females. Out of 257 males 185 (71.98%) are adults, 72 (28%) are children. Out of 248 females 169 (68.14%) are adults and 79 (31.89%) are children.

Total members of sample households are 490. Of them 158 (32.24%) are school going children, 332 (67.75%) are workers. Total workers in sample households are 332. Of them 172 (51.80%) are male workers and 160 (48.19%) are female workers. All the respondents have 103 houses. Out of 103 houses, 96 (93.20%) are own houses, 6 (5.82%) are rented and the remaining 1 (0.97%) is relatives’ house. The selected respondents own an area of 295.75
 acres. Out of this an area of 182 acres (61.53%) is dry land, and 113.75 acres (38.46%) is irrigated land. Of this 14 acres (4.73%) is under canal, 2.50 acres (0.84%) is under wells and only one acre (0.33%) is under tank. There are 341 milch animals. Of them 122 are cows (21.44%) the remaining 219 (38.48%) are she buffaloes. The total value of these milch animals was estimated at Rs. 75.36 lakh. The highest number of milch animals (88) is observed in Penukonda division, lowest in Kanekall division (55). Total number of cows in sample households was 121 and their value was Rs. 33,45,000. Of them 98 are CB cows and their value is Rs. 30,30,000. The remaining 23 are ND cows and their value is Rs. 3,15,000. The average milk yield was estimated at 8.17 ltrs/day and the average price per liter was Rs. 17.91. The average milk yield per day per CB cow was 8.97 ltr and that of ND cow was 4.73 ltrs/day.

Total number of buffaloes in selected households was 219 and their value was Rs.46,55,000. Of them 146 are GM buffaloes and their value is Rs.35,30,000. The average milk yield per day per GM buffalo was 4.64 ltrs and the average price per liter was Rs.25. The remaining 73 are ND buffaloes and their value is Rs.11,25,000. The average milk yield per day per ND buffalo was 4 ltrs and the average price per liter was Rs.25. Out of 100 respondents, 69 percent have arranged shed facility, 73% have water, 90% have trough, 38% have light and 5% have fan facility. Hence all the respondents have not constructed sheds for milch animals. While a few respondents have arranged fan and lighting facility.

Out of 132 milch animals, 26 (19.69%) milch animals calved between 1 to 2 years, 91 (68.93%) animals calved between 2 and 3 years and 15 (11.36%) animals calved between 3 & 4 years. Out of 131 animals, 30 (22.90%) animals lactation period was 7 to 9 months, 51 (38.93%) animals lactation period was 9 to 11 months, 43 (32.82%) animals
lactation period was 11 to 13 months, 6 (4.58%) animals lactation period was 15 to 18 months and only one animal (0.76%) lactation period was above 18 months. The length of dry period of majority animals (87.78%) was between 5 & 7 months. The lactation yield of 68 (51.90%) milch animals is between 1000 & 1500 ltrs, 16 (12.21%) milch animals is between 1500 & 2000 ltrs, 26 (19.84%) milch animals is between 2000 & 2500 ltrs, 14 (10.68%) milch animals is between 2500 & 3000 ltrs, 2 (1.52%) animals is between 3000 & 3500 ltrs and 5 (3.81%) milch animals is above 3500 ltrs.

The total milk produced by the selected respondents was 1994 liters per day. Of them a quantity of 103.5 (5.19%) liters was kept for home consumption, 306 (15.34%) ltrs was sold to Govt. Co-operatives, 666.25 (33.41%) ltr to Private Co-operatives, 72.5 (3.63%) ltrs to Vendors, 214.75 (10.76%) ltrs to Hotels and the remaining 632 (31.69%) ltrs to local consumers. Hence it is evident that huge quantity of milk was sold to Private co-operatives (33.41%) and to local consumers (31.69%). Most of the buyers bought cow milk at the price ranging between Rs.15 and Rs.18 per liter. Very few buyers offered Rs.18 to Rs.20 per liter depending upon the quality of milk. Most of the buyers bought buffalo milk at the price ranging between Rs.20 and Rs.25 per liter. Very few buyers offered Rs.25 to Rs.30 per liter depending upon the quality of milk. It is observed that the APDDCF and private dairies pay milk bills once in 15 days. While vendors pay once in 15 days and once in 30 days. But hotellers pay daily for some milk sellers, weekly for some other milk sellers, fortnightly for others and monthly for some milk sellers. Local consumers normally pay milk bills monthly.

The selected 100 milch animals consumed 738 (42.21%) kg of dry fodder worth Rs.2624 (27.87%), 904 (51.70%) kg of green fodder worth Rs.5424 (57.62%), 20.75 (1.18%) kg of concentrates worth Rs.497 (5.28%) and 85.5 (4.89%) kg of mineral mixture worth Rs.863
(9.16%) per day. That means on an average one animal consumes 17.50 kg of fodder + concentrates + mineral mixture. Its value is estimated at Rs. 94 per day. The dairy farmers are spending much money on green fodder (52.62 percent of total expenditure) followed by dry fodder (27.87 percent). The share of expenditure on concentrates and mineral mixture was estimated at 5.28 percent and 9.16 percent respectively.

All the respondents have 346 milch animals. The average dung yield of 346 milch animals per day was estimated at 1864 kg. (Per year 676 tons, worth Rs.12, 08,000). On an average each milch animal gives 5.38 kg of dung per day. Its value is estimated at Rs.9.60. The proportion of male participation was 19,440 (43%) mandays and female participation was 26,100 (57%) mandays. The total cost of labour per year was Rs.40, 32,000. The average cost per manday was Rs.88.53. It is estimated that on an average 455 mandays of employment was generated per household per year. Of this, the share of male was 194 mandays and that of female was 261 mandays. It is also observed that each milch animal generated 57.17 mandays of employment for male labourers and 76.76 mandays of employment for female labourers per year. That means a milch animal created 133.94 mandays of employment per year. The above analysis reveals that the female participation is more than that of male in all activities except in the cleaning of shed in four mandals namely Rapthadu, C.K.Palli, Somendapalli and Penukonda. The main activities attended by female labourers are cleaning of animals, grazing, milking and sale of milk.

In Rapthadu mandal, out of 20 respondents 6 borrowed loans from banks to the tune of Rs.2,30,000 in 2010. But they have not repaid. In C.K.Palli mandal out of 20 respondents, 5 borrowed loans to the tune of Rs.1,05,000 in 2010 and 2011. They have not repaid. In Somendapalli mandal out of 20 respondents, 3 borrowed an amount of Rs.1,20,000
in 2010 and 2011. , but the amount repaid was partial. In Penukonda mandal out of 20 respondents, one borrowed an amount of Rs.1,00,000 from banks in 2010. Six respondents borrowed Rs.3,40,000 from money lender in 2010 & 2011. They repaid no amount. It is interesting to that in Kanekall mandal the respondents have not borrowed any amount from any source.

Feed cost shared 64.72 percent of the total cost for dairy cows. Among various feed items paddy straw, green grass, bran, salt and oil cake shared in total feed cost by 34.84, 45.97, 11.69, 0.37 and 7.10 percent respectively. The labour cost came next to feed cost. The returns from dairy cows include returns from milk sold and consumed, cow dung and calf. The total returns from 100 milch animals was estimated at Rs.47,14,580. The average returns per animal was Rs.47,145.80 which includes Rs.41,995.20 (89.07%) from milk, Rs.3,645.60 (7.73%) from dung and Rs.1,505.00 (3.19%) from calves.

The total cost for maintaining 100 milch animals per lactation was Rs.3,74,8842, the total returns from 100 milch animals per lactation was Rs.4,71,4580. So the net return per 100 milch animals per lactation was estimated at Rs.9,65,708. The average net return per animal per lactation was Rs.9,657. On an average a net return per CB cow per lactation was estimated at Rs.14,290. The above analysis reveals that the maintenance cost of CB cows is higher than that of other breeds. Total returns and net returns are also high in the case of cows. Majority of the farmers have not insured the lives of milch animals. A few farmers insured the lives of milch animals. When some of these animals died the amount of insurance was not paid by the authorities concerned.

The selected dairy farmers have expressed different problems. It is observed that the problems are same in all the selected mandals. As high as 81 percent of the farmers
expressed that the veterinary staff is not visiting the villages frequently. Another important problem is non availability of vaccines in the veterinary hospitals according to 92 percent of the respondents. About 85 percent of the farmers informed that the green fodder was available only for three months due to poor irrigation facilities, low rainfall and financial weakness. The milk yield per cow is low in many cases. As many as 67 percent of the farmers opined that the price of milk is low. Milk bills are not paid properly especially by dairy co-operative society Agents. Majority of the farmers (90%) do not know anything about insurance of animals. Very few farmers expressed that they did not have any knowledge about marketing of milk and milch animals. About 80 percent of the farmers expressed that the selling of milk at dairy co-operatives and to households requires much time. Majority of the farmers are not given technical guidance by the departments such as animal husbandry and veterinary. Since many farmers are poor they are not in a position to maintain dairy farming effectively.

Suggestions

The expansion of area under fodder cultivation is necessary for rearing cattle and buffaloes. The qualitative and quantitative improvement in the crop residues is important for future growth and development of livestock sector. The availability of adequate quantity and good quality of fodder at reasonable price is a critical input for increasing milk production. Hence the state govt. Agencies and IDDP should make a proper arrangement to provide dry fodder, green fodder and concentrates in adequate quantities at a reasonable price. The state govt. should encourage establishment of compound feed mill at private sources for supply of balance feed at the reasonable rate to the door step of dairy farmers.
The registered veterinary medical practitioners must practice in rural areas. The state veterinary department should create facility for Artificial Insemination and pregnancy test at the door-step of the dairy farmers. It is necessary to give the farmers easy accessibility to livestock services so that the extent of adoption of vaccination can be minimized. To reduce the mortality of livestock, efforts should be made to control the animal diseases through health care and disease control measures. Vaccines must be made available in the veterinary hospitals.

The comparative performance of cross-breed and indigenous cows revealed that the income from cross-breed cows over the annual recurring expenditure is much higher than that of the indigenous cows. The findings of the study revealed that the introduction of cross-breed milch animals improved the milk production significantly. To improve the milk production in the state, genetic upgradation of milch animals is necessary. It is also necessary to introduce high yielding varieties of grasses, legumes and fodder crops in the farmers field to increase the milk production. Educating farmers on scientific management of superior milch breed animals and supplying standardized cattle feed regularly at cheaper rate at their door step is necessary to improve the productivity of animals.

The commercial production of milk can be achieved only if the dairy farmers get a price which will cover the cost of production of milk in a cost effective manner. The adoption of proper system of milk marketing at remunerative prices is one of the key factors to increase the production potential of milk sufficient incentives should be given for clean milk production which has to be promoted vigorously. The AH department should enhance their extension activities by acquainting the farmers with improved management and feeding
practices of milch animals. Then only the dairy farming can bring socio-economic change in the rural areas.

Training programmes should be implemented to educate and assist the dairy farmers in respect of breeding, feeding management technique, marketing of milk and milk products. The government, A.H.Department and Dairies should take more and more initiatives to accelerate dairy farming in the rural areas.

Co-operative dairy plant should make regular payments or advance payments to milk producer. Efforts should be made to install bulk milk coolers in rural areas to facilitate reduction in transportation cost. Government should give subsidies in the form of mineral mixture, concentrates. Animal Husbandry department, A.P.Dairy and Govt. should prorogue the dairy development schemes among dairy farmers. Because many farmers did not know about many schemes.

The improvement of the marketing infrastructure for disposal of milk is equally important. The milk markets bring together the producers and buyers on same platform, such milk markets help the farmers to fetch better price for milk and hence, are an incentive which increase milk production. Improving the availability of inputs and developing adequate marketing infrastructure for disposal of milk is useful.
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