A STUDY ON AGRO-GRAZING IN DISTRICT TOBA TEK SINGH

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The present study on agro-grazing was conducted in District T.T. Singh during M.Sc. (Hons) in 1999. In total, 100 respondents were interviewed from 80 selected villages. Average age of agro-graziers was 37 years. Almost all were landless (96%). Number of self owned agro-grazier herd was higher (98%) as compared to hired (2%). The maximum number of agro-grazing animals per herd was 93 in villages adjoining river. Source of grazing for these animals was natural vegetation (87%) found along river side and agriculture field (10%). Where as grazing sites like: Canal side villages and crop harvest residues provide herbage and forage for 70 & 30% agro-grazing animals respectively. Neither any loan nor any financial assistance or subsidy was given to any agro-grazier in the district. Veterinary facilities available were 42% only. Whereas the major problem faced by the agro-graziers was the incidence of epidemic diseases. Immediate solution of these problems is unavoidable for livestock production through agro-grazing.
Keywords: Agro-grazing, protein, landless, epidemic

INTRODUCTION

Protein deficiency is one of the major national problems in Pakistan. The forage quality of range vegetation differs at phonological stages, higher in vegetation stage and declines at maturity stage, during fall and winter (Marzieh *et al.,* 2006). Animals forced to graze on low quality forage vegetation become thin, weak and susceptible to diseases.

There is a big gap between the need and available protein per capita (GOP, 2005-06). So to bridge this gap, to increase and maintain livestock of very good breeds for milk and meat is the burning need of the day because these animals provide various amenities to mankind such as milk, meat, wool, leather and fat, bones, blood and other by-products which are used in poultry feed and fertilizer industry. Furthermore, the animals are being used extensively for draught purposes. The prevalent system of livestock production in Pakistan is conventional pattern of keeping livestock on "Deras" by farmers, grazing and browsing in forest and rangelands, rearing of animals on farms established in private and public sector, keeping of animals by poor community on small scale at their homes and last the one agro-grazed animals. (Nasir, 1988).

The term agro-grazing means "Grazing of livestock on cultivated lands, along water channels, canals, roadside, village wastelands and grazing in riverian forests". Agro-grazing is an important system of livestock production in Pakistan. During grazing, agricultural fields after harvesting, crop residue (stubbles, scattered thiny materials like leaves, grains etc), weeds and insect pests harboring plant material are suppressed whereas grazing animals provide nutrient rich excreta to soil as organic manure which significantly ensures bumper crop in future (Pacola and Roda, 1977). All natural forage is grazed properly by the animals. So they are reared without any significant cost on their feed. According to an estimate, approximately 25% of total livestock depends upon agro-grazing (Quraishi, 1993).

However, this important sector of agro-grazing is facing number of serious constraints. Number of animals and families depending upon agro-grazing is decreasing day by day due to one or other reason (MINFAL Year Book 2006-07). In addition to this non-availability of veterinary facilities and lack of adequate grazing lands are also threatening agro-grazing. It is due to extensive urbanization and intensive cultivation. Moreover, lack of extension services has resulted in non-adoption of innovations both in crop and animal production (Hassan, 1977). We are facing high prices of milk, meat and other commodities of animal origin. This made the lives of people miserable and they feel themselves down and out.

It is therefore, an urgent need to mobilize all the potential sources for livestock production in the country and initiate scientific studies for observing and analyzing agro-grazing. So that suitable measures for its promotion and improvement can be adopted through decreasing the concerned limitations. For the research studies in central Punjab, District Toba Tek Singh was selected.

MATERIALS AND METHODS

The study site District Toba Tek Singh (Punjab) was comprised of Tehsils Gojra, Kamalia and T.T Singh. From these three tehsils, 80 villages were selected at

random for the collection of data. However, villages adjoining river, canals, forest or range area and in the interior (Surrounded by agriculture land) were selected. To investigate prospectus of agro-grazing, the interviewing schedule for respondents (Agro-graziers) was prepared. Before conducting the actual survey, the questionnaires were pre-tested by interviewing 10 agro-graziers of the area. After testing, the questionnaires were given final shape for collecting data. Eighty villages were selected at random from four grazing sites as mentioned earlier.

On an average, 1-3 graziers were randomly selected in each of the villages. In this way 100 respondents were interviewed from different villages of grazing sites. Fifteen (15), thirty (30), fifteen (15) and thirty five (35) graziers were selected to be interviewed from riverside, canal side, around forest and range area and interior villages, respectively. The purpose to select villages from different grazing sites was to know the contribution of each one. The data were collected and analyzed statistically, (Steel *et al.,* 1997).

RESULTS AND DISCUSSION

The data collected revealed that the average age of herders was 37 years and 99% and 1% agro-graziers were male and female, respectively. The reason of fewer females' involved might be some household work, domestic activities and deteriorating security conditions. The results partially agree with findings of Azam (1991). The data in (Table I) showed that 96% of graziers were found landless, 3% land tenant and only 1% land owner. It was almost true for each grazing site. They took their herds to the lands of the others. Our findings partially inline with the findings of Azam (1991), Allah Wasaya (1993) and Bashir (1980) who also described that majority of graziers were landless in Bahawalpur, D.G. Khan and Rajistan, respectively. Moreover, the result obtained regarding the ownership of herd (Table 1) revealed that 98% respondents had their own herds. The majority of the people (92%) in the villages in the interiors had their owned herds whereas other, (8%) are engaged in grazing herds of others on daily or monthly basis. Our statistical analysis revealed another important indication that both the parameters i.e. ownership of the herds and average number of animals were differently correlated with the age of graziers. The former being significant ($p \leq 0.05$) while the latter was not (Figure 1) which some how proves that elderly persons in these villages retain their right of ownership may be due to better management of herds with age and experience. Our results are apparently similar to the findings of Shahbaz (1997) and Malik (1997) but disagree with Iqbal (1997) who reported 100% self owned grazing of herds. Moreover, Table 1 showed that the average number of livestock per herd kept by the respondents was 83, out of which 93 were along riverside, 72 canal side, 92 forest side and 77 were found in the interior villages. It is worth mentioning that the ratio of sheep and goats were much bigger than that of cattle and a buffalo which indicated that rearing of small animals is easier than bigger one (Table 3). Our results are similar with the finding of Naseem (1991) and Azam (1991), but disagree with Iqbal (1997), who reported 55.16 average herd sizes. The cause of small herd size might be due to more interest of farmers in cultivation.

In villages adjoining riverside, 10% grazing were done on crop harvest residues and 88% on riverside vegetation. After compiling data, the results clearly showed that all the area plays a vital role in providing grazing and browsing to livestock. In addition to forage requirements, the source of drinking water for the livestock was also surveyed in the study. Animals drinking requirements were met from the water channels (46%), ponds and hand pumps (11%) andd tube wells (21%), respectively. It should be noted that canal department does not allow herders to drink water from canals as this may damage bank of canals. There is a well developed network of channels every where. So animals have easy access to these. Lack of veterinary facilities for agro-grazing animals was also another problem as mentioned in Table 2. Maximum

Table 1. Social status of respondent (Agro-graziers) based on average values

Grazing Sites	Sample Size (n)	Age of Graziers (Years)	Male Graziers (No.)	Female Graziers (No.)	Landless Graziers %	Owner ship of Herd %	Av. Number of Animals / Respondent
Villages Adjoining Rivers (A)	15	35	15	0	100	100	93
Villages Adjoining Canals (B)	30	37	30	0	94	100	70
Villages Adjoining Forest (C)	20	36	20	0	100	100	92
Villages in the Interior (D)	35	40	33.25	1.75	90	92	83
Total/Average	100	37	98.25	1.75	96	98	84

Figure 1. Correlation between age of graziers and ownership of herd and number of animals per respondents ® = -0.92, p≤0.05)

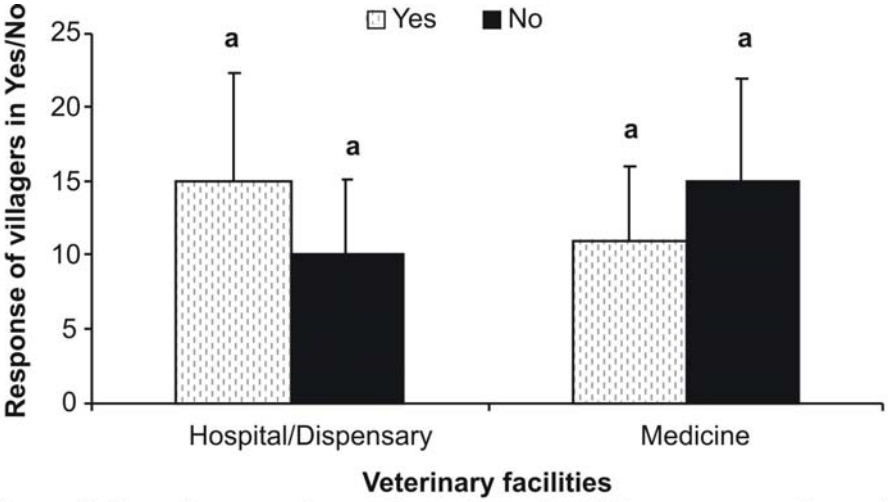

Figure 2. Overall comparison of veterinary facilities among various villages. Bars with SD show the mean values for Yes and No response

veterinary facilities were available for canal side animals (65%) whereas riverside animals enjoyed 15% only. The average distance from the dispensary was 9.25 Km and maximum was 15 Km, which was too much for graziers to approach (Malik, 1997). It was also reported by graziers that veterinary staff was non-cooperative and mostly remain absent from duties. Bajwa (1988) and Azam (1991) reported the similar results. In Figure 2, overall comparison of veterinary facilities were presented based on the response of various villages clearly showed that although adequate number of hospital/dispensary facilities exist but there is noticeable shortage of medicines. This response of graziers indirectly indicated the poor management of concerned authorities responsible for animal health and care. During the survey, it was noted that major problems faced by all the respondents were almost similar, which were attack of epidemic diseases and high prices of fodder, followed by lack of forage, non-availability of veterinary facilities. Results coincide with the reported literature (Azam, 1991 and Iqbal, 1997).

Table 2. Availability of veterinary facilities

	Sample Size	Hospital/Dispensary		Medicine	
	(n)	Yes	No	Yes	No
Villages Adjoining Rivers	15	13	02	0	15
Villages Adjoining Canals	30	20	10	15	15
Villages Adjoining Forest	20	08	12	02	18
Villages in the Interior	35	18	17	25	10
Total	100	59	41	42	58

Table 3. Average number of livestock reared by agro-graziers

Grazing Sites	Sample Size	Sheep	Goat	Cows	Buffalo	Total
Villages Adjoining Rivers (A)	15	25	45	6	14	93
Villages Adjoining Canals (B)	30	25	30	5	10	70
Villages Adjoining Forest (C)	20	30	37	13	12	92
Villages in the Interior (D)	35	25	35	12	11	83
Total/Average	100	26.25	36.75	9.75	11.75	84.5

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