Group VI

DHANNI

Origin

The Dhanni breed of cattle [1] also known as Awankari, Pakhari and Pothwari, is produced in the Attock, Rawalpindi and Jhelum areas of the Punjab, Pakistan.

Originally the cattle found near Chakwal of Jhelum district were called Dhanni, while those in Tallagang Tehsil of Attock district were called Awankari or Pakhari, and similar cattle found near Jatli in Rawalpindi district were called "Pothwari". These distinctions, however, did persist for some time due to lack of communications between the different tracts. But later on, when communications improved and trade developed with the neighboring districts, the breed was studied more closely and the results clearly indicated that in essential features the breed was one, and that minor local variations of uneconomic importance did not justify the classification of these local variants as different distinct breeds. Consequently it was decided to group the black and white spotted cattle available in the above localities together and designate them collectively as Dhanni.

Conditions in the Native Home of the Breed

Location, Topography and Soils

The area of this breed extends over the following parts of Jhelum district, Attock and Rawalpindi, the longitudinal position being 72° to 74° east and the latitudinal, 33° to 34° north:

1. Tehsil Chakwal of Jhelum district:

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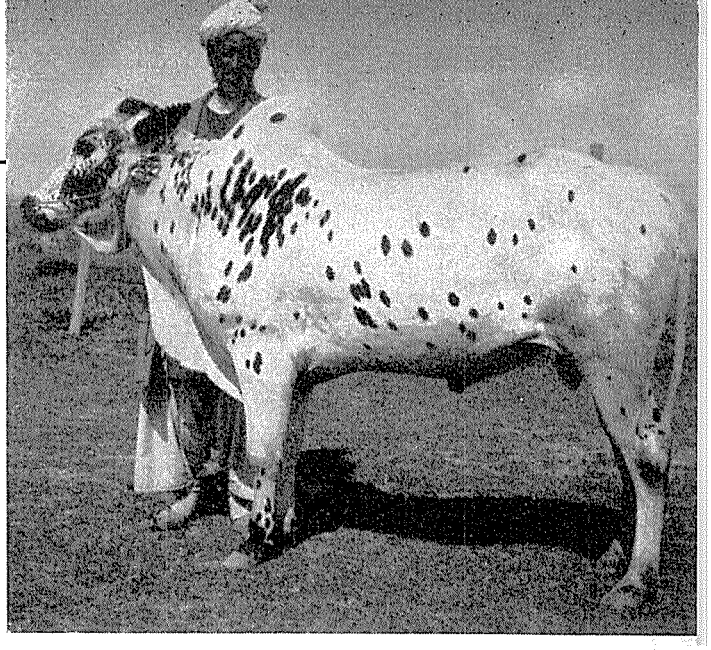
[1] *See* Figure 62.



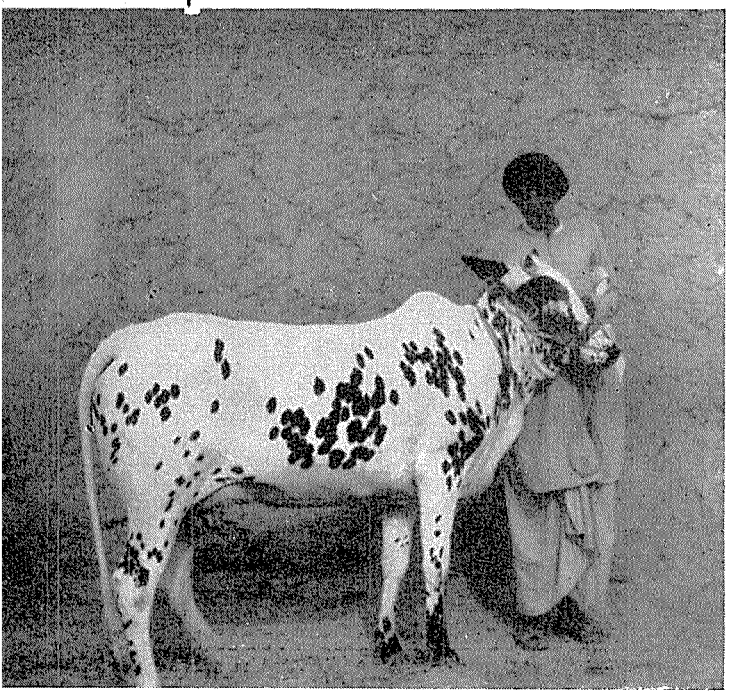
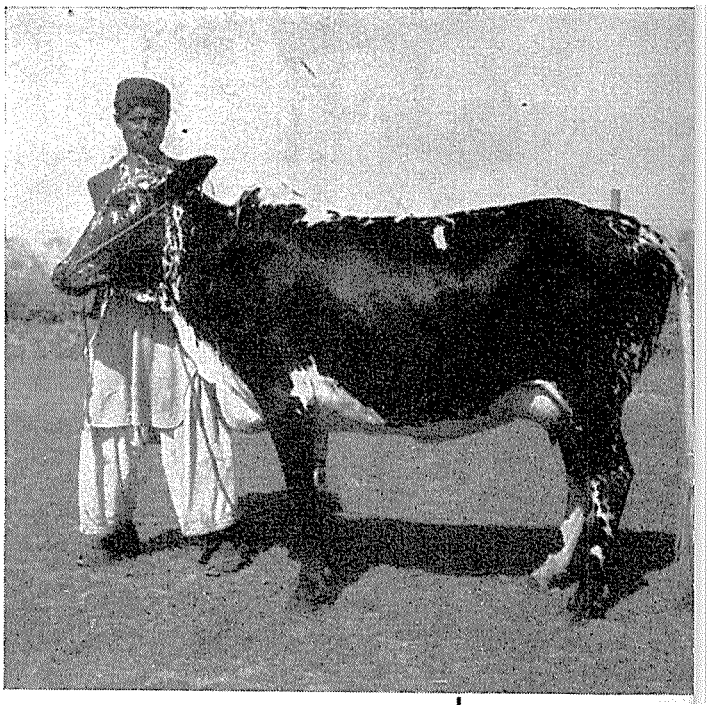
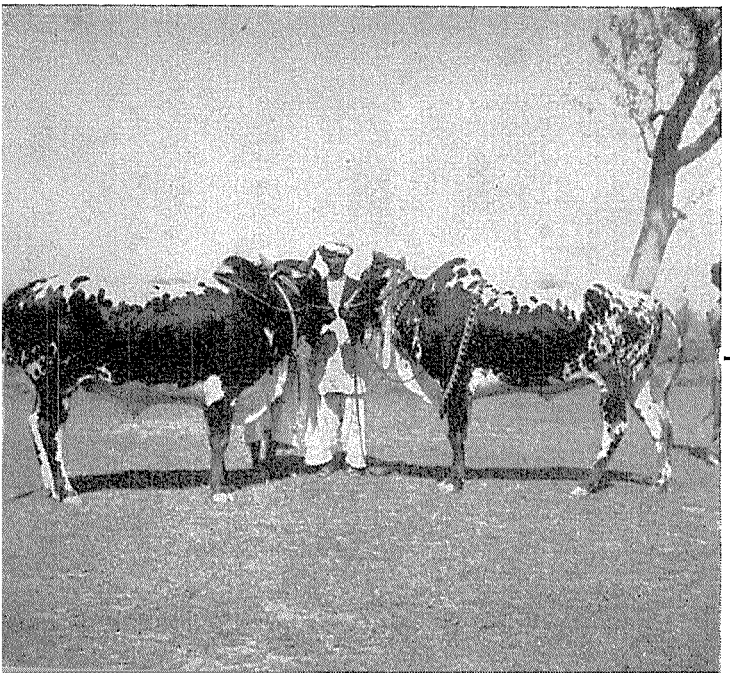


FIGURE 62. Dhanni cattle, found in the districts of Attock, Jhelum and Rawalpindi of the Punjab, Pakistan, are medium in size and compact. Above: a Dhanni bull. Left: a Dhanni cow.



Active and fast moving, the Dhanni is essentially a draft animal. Right: a Dhanni cow. Below: a pair of Dhanni bullocks.



2. Tehsil Tallagang and a part of Tehsil Fatehjang of Attock district;

3. Tehsil Gujarkhan and the Jatli area of Rawalpindi district.

The boundaries of the Dhanni tract are, roughly, on the north, the line of Khaire Murat hill in Attock district; on the south, the line of the northern slope of the Salt range and the hills connected with it in Jehlum and Attock districts; on the east, a line about 10 miles west of the Lahore-Peshawar railway in Rawalpindi and Jehlum districts; and on the west, a line passing close to the hills in the west of Attock district.

The tract may be generally described as an undulating plain. The country is rocky in parts and intersected with large rough ravines and sandy riverbeds, which are most numerous in the west and north of the tract.

The tract is dry and cultivation depends almost entirely on rains. A very limited amount of land is, however, irrigated by means of Persian wheels along the large ravines and river beds mainly for the production of vegetables. There is very little land subject to inundation. A number of mountain torrents cut across the tract but so far this water, which is not available all the year round, has not been conserved to be utilized for cultivation purposes.

The soils in the Attock District are loam to clay loam to sandy loam and sandy; in the Rawalpindi district they are sandy loam to stony, and in the Jehlum district heavy loam to medium and light loam mixed up with different sizes of pebbles are found. In general, the soil is shallow with underlying rocks.

The altitude of the tract varies from 800 feet to about 1,600 feet above sea level.

Climate

The cold weather period extends from December to March. Average rainfall during this period is 7½, 5¼ and 4½ inches in Rawalpindi, Attock and Jhelum districts respectively. December and January are the coldest months, while the hot weather extends from April to June, which is the hottest month, the highest temperature recorded being 118°F. Dust and thunder-

storms with occasional rain commonly occur. Mean relative humidity ranges from 36 to 50 percent and the mean daily range of temperature during these months may be between 25° and 30°F.

July to September is the rainy season. During the earlier part it is hot. Mean daily relative humidity is between 62 and 82 percent. Climatalogical data are summarized in Table 84.

Table 84. Climatological Data for the Dhanni Area

MEASURE OF CLIMATE	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Rawalpindi District												
Mean maximum temp. °F. . . .	62.3	65.2	75.1	86.2	97.7	103.5	97.8	93.7	93.4	88.6	77.7	66.8
Mean minimum temp. °F. . . .	37.9	41.7	50.4	59.3	68.7	75.9	77.1	75.5	69.3	57.0	44.4	37.0
Relative Humidity at 0800 hrs. I.S.T. . .	83.0	81.0	63.0	51.0	36.0	39.0	68.0	76.0	62.0	58.0	68.0	77.0
Precipitation, in inches	2.36	2.07	2.11	1.66	1.17	1.99	6.89	7.83	3.17	0.53	0.31	0.99
Jhelum District												
Mean maximum temp. °F. . . .	66.5	66.8	80.1	91.7	100.2	104.7	96.8	94.1	95.5	92.7	81.0	69.2
Mean minimum temp. °F. . . .	42.2	45.8	52.4	61.5	72.6	77.8	77.2	76.6	72.1	58.4	45.2	40.5
Relative Humidity at 0800 hrs. I.S.T. . .	85.0	92.0	65.0	52.0	45.0	48.0	75.0	82.0	71.0	73.0	92.0	82.0
Precipitation, in inches	1.40	1.23	1.32	0.97	0.82	1.55	4.86	5.34	2.24	0.31	0.26	0.54
Attock District *												
Precipitation, in inches	1.41	1.36	1.80	1.37	0.90	1.34	4.14	5.15	0.41	0.40	0.23	0.66

Meteorological data furnished by the Director, Meteorological Department, Lahore, Punjab, Pakistan. * Other data not available.

Vegetation

There is only a very limited amount of land available for use as pasture. Uncultivable waste land produces some stunted grasses during the rainy season but hardly provides any substantial feeding. Preserved community areas known as Rakhs provide only light pasture and if properly maintained may be of great

use in providing grazing for the animals, though at present they do not supply adequate feeding. The forests in the tract are of submontane scrub type. There are, however, a number of fodder trees from which leaves and branches are lopped and fed to the cattle. As the tract is frequently subjected to famines due to scarcity of rains, once in every two or three years these fodder trees are of great importance in preserving cattle during lean periods. Some of the important fodder trees are: *Olea cuspidata, Acacia modesta, Acacia arabica, Bauhinia variegata, Celtis australis, Albizzia siris, Grewia species, Zizyphus jujuba* and *Zizyphus nummularia.*

Depending on soil and rainfall, the following crops are usually grown: wheat, barley, chickpeas, linseed, millets, maize, sorghum, *Phaseolus radiatus, P. mungo,* sesame and *Eruca sativa.* Wheat, barley, chickpeas, linseed and *Eruca sativa* or Taramira as locally known are winter crops and the others are grown in the rainy season. By-products from all of these crops are used for cattle feeding.

Management Practices

Almost every farmer in the area maintains a few animals for breeding. In view of the good demand for Dhanni bulls and bullocks from areas in Central Punjab and North-West Frontier Province, male stock is generally well looked after. Calves are not weaned and bull calves are usually allowed the entire milk of their mothers for a period ranging from 6 to 9 months. Heifers are allowed only about half the cows' production. Bulls are almost entirely stall-fed. They are given regular exercise and are groomed frequently to allow the formation of a lustrous coat. The same attention is not paid to females, and as a result growth is frequently slow and stunted. In most cases, cows are used extensively in the plow and are not too well-fed. As grazing is very limited cattle have to depend on home grown feeds of the cultivators. The following is an approximate feeding schedule:

January to March — Green wheat and green barley.

April to June — Crushed wheat straw, chickpea flour and Taramira cake.

July to September — If rains are adequate and natural grazing is good cattle are usually carried on pastures with slight supplement of green millets, sorghum, maize and *Phaseolus radiatus* or *P. mungo.* otherwise these crops supply bulk of feed.

October to December — Straws of millets, sorghum, maize, or wheat and oilcakes.

Common salt is generally given only once a fortnight but when green fodder is available salt is given more frequently.

During famine periods loppings from trees mentioned above are extensively used. Also a large number of cattle are moved to the canal-irrigated areas of the Punjab.

Physical Characteristics of the Breed

Dhanni cattle are medium-sized, compact, active animals and the bullocks are much prized as draft animals. The predominant color in the great majority of animals consists of black spots of varying dimensions scattered on a white coat, resembling that of a Dalmatian dog. These black spots are often seen with black hair in the center and white on the margin and at times are entirely covered with white hair. Animals with red patches are occasionally seen but are not liked by the breeders.

They have a comparatively long body with straight back. The head is moderate-sized with a straight profile and small horns which emerge laterally directed upward and outward. Horns are usually 3 to 5 inches in length. Ears are medium-sized, carried horizontally and pointing obliquely backwards and should not droop.

The hump is well-developed, upstanding and rounded, with firm fleshing. The skin is generally tight, with a barely perceptible sheath, and a thin, small dewlap. The hair is short and lustrous, but with advancing years and underfeeding, cattle usually show coarseness. Hoofs are black, medium-sized and strong. The digits are close together. The tail is thin and short and the tuft is usually white and extends up to the fetlock. In cows the udder is poorly developed, and the teats are small and usually black in color.

Large head, large horns, drooping ears, long legs, pendulous

sheath and dewlap, whole red or gray color are considered undesirable characteristics in the breed. Average data on certain body measurements are summarized in Table 85.

Table 85. Average Measurements of Dhanni Cattle

MEASURE	At one year	At two years	Mature
Females			
Weight, in pounds . . .	300 – 350	700 – 850	750 – 900
Length from shoulder point to pin bones, in inches	44.26±0.82 (16)	52.46±0.20 (78)	54.48±0.55 (100)
Height at withers, in inches	45.81±0.78 (16)	47.95±0.11 (80)	49.69±0.14 (100)
Depth of chest, in inches	20.64±0.24 (16)	23.70±0.59 (20)	23.41±0.23 (36)
Width of hips, in inches	14.03±0.72 (16)	15.50±0.22 (20)	17.41±0.04 (36)
Heart girth, in inches . .	53.42±0.46 (16)	64.15±0.23 (78)	66.41±0.62 (100)

MEASURE	At one year	At two years	Mature bull	Mature bullock
Males				
Weight, in pounds . . .	300 – 400	800 – 1000	1000 – 1200	1050 – 1300
Length from shoulder point to pin bones, in inches	45.31±0.96 (16)	57.22±0.23 (69)	58.64±0.71 (50)	60.32±0.82 (36)
Height at withers, in inches	47.62±0.96 (16)	50.98±0.15 (70)	53.32±0.34 (50)	53.64±0.41 (36)
Depth of chest, in inches	22.5 ±0.25 (16)	24.18±0.24 (25)	28.76±0.25 (50)	29.12±0.28 (36)
Width of hips, in inches	14.62±0.78 (16)	15.74±0.22 (25)	19.78±0.25 (50)	21.08±0.26 (26)
Heart girth, in inches . .	55.31±0.44 (16)	68.77±0.24 (72)	75.16±0.49 (50)	76.48±0.51 (36)

Numbes sampled are shown in brackets.

Functional Characteristics of the Breed

The Dhanni breed is used primarily for draft purposes, and milk production has not received the same amount of attention as draft qualities. As the cows are also used in the plow and are underfed, their milking potentialities seldom have a chance to develop. However, a Dhanni Cattle Breeding Herd Book scheme was started in the year 1938 and under this scheme purebred animals are registered and their milk production is recorded. Average data on milk production are presented in Table 86.

Table 86. Milk Production of Dhanni Cows per Lactation

REGION	Average production of tested cows	Average production of cows producing between 2,000-2,499 pounds.	Average production of cows above 2,500 pounds.
Chakwal	1 740 ± 47 (87)	2 265 ± 41 (17)	2 800 ± 520 (4)
Tallagang	1 760 ± 45 (95)	2 180 ± 102 (18)	2 900 ± 500 (6)
Jatli	1 520 ± 48 (73)	2 250 ± 247 (9)	—

Numbers sampled are shown in brackets.

The average production of Dhanni cows thus far recorded is 1,684 ± 28.37 pounds in a lactation period of 228 ± 2.18 days. However, there is considerable variation ranging from 1,520 pounds to 3,400 pounds. It is estimated that at least 25 percent of the cows are capable of producing 2,500 pounds of milk in a lactation period.

The average calving interval is 33.86 ± 0.03 months, based on 459 records. Average number of lactations during life as calculated, based on 116 records is 5.12 ± 0.17. Average age at first calving, based on 67 records is 40.33 ± 0.24 months. About 10.4 percent of the animals calved at an age of about 30 months.

Except for a slight peak period of matings between the months of May to August, the distribution of matings is usually uniformly spread throughout the year. Usually the males are brought up with greater care and are better fed than females. Ordinarily the young bulls are allowed to serve when they are about 2½ years old. The breeding records of bulls working in Dhanni Cattle Breeding Scheme (88 samples) show that the active breeding life of bulls is 7.2 ± 0.44 years. They are quick at breeding and apt to be vicious in handling.

Dhanni bullocks are strong, compact, active and fast moving. They are extensively used for lifting water from wells and for making embankments in the fields and also for the levelling of fields. Bullocks move in short but rapid steps, a characteristic feature of this breed. They are castrated at the age of 3½ to 4 years. As purebred Dhanni bulls are in great demand for breeding purposes in other areas, only second rate animals are used for bullocks.

A pair of bullocks can haul a load of 2,500 to 3,000 pounds in an iron-tired cart on uneven dirt track. In a working day of

8 to 10 hours they cover a distance of 25 to 30 miles. As a pack animal, a bullock carries anything from 300 to 500 pounds. Plow bullocks usually work 8 to 10 hours a day during winter months but during summer they are not worked for more than 5 to 6 hours a day.

Meat qualities have never been studied.

No genetic traitc have yet been studied, but general observation suggests that Dhanni color markings are dominant over solid color. On the whole, Dhanni cattle are hardy, though no specific studies are available regarding resistance or otherwise to several cattle diseases.

Performance in Other Areas

In other areas not far removed from the Dhanni tract, Dhanni cattle are being introduced both for grading up the local cattle as well as for purebreeding of Dhanni herds. These areas include Mianwali district of Punjab, Pakistan; Shahpur district of Punjab, Pakistan; and in some adjacent districts of North-West Frontier Province of Pakistan.

In the Mianwali district, where the climatic conditions are a little more rigorous and feeding facilities are inadequate, these cattle have not achieved any progress. Average milk production of tested cows (118) was 1375 $\pm$ 8.2 lbs., while average production of the better cows (5) was 2140 $\pm$ 35.5 lbs.. The average lactation period was also of a shorter duration 192 $\pm$ 2.6 days (117 cases).

In the Shahpur district, on the other hand, where ample feed is available throughout the year on account of availability of irrigation facilities, the average production of tested cows (96) was 2,115 $\pm$ 56 lbs. while average production of superior cows (41) was 2,305 $\pm$ 40 lbs.. Average lactation period was 243 $\pm$ 3.4 days. Though the production was as good as or superior to the production in the home tract of the breed, it is claimed that the male animals in this area do not show the same finish as the animals in their home tract. It is suggested that ample supply of green roughages with very little concentrates make the animals slightly paunchy.

Since 1928, Dhanni bulls were introduced to grade up the local cattle of some of adjacent districts of North west Frontier Province. Wherever the climate was very cold and feed condi-

tions were poor Dhanni cattle did not do so well. However, in Haripura in the Hazara district, Dhannis have done well, partly due to better management on the part of the breeders and also due to better feed conditions.

Sources of Breeding Stock and Information Regarding the Breed

The total Dhanni cattle population is estimated to be 1,225,000, 70 percent of which is in the Punjab, while the balance is in North-West Frontier Province. Dhannis are mostly marketed in the cattle fairs at Gulshah (Sialkot), Lyallpur, Fatehganj, Gondal, Tallaganj (Attock), Chakwal (Jhelum), and Rawalpindi.

For further information regarding the breed, enquiries may be made to the Deputy Director of Animal Husbandry, Rawalpindi, District, Rawalpindi, West Punjab, Pakistan.