CHAPTER AI

FODDER CROPS

Fodder crops occupy an important place among the fields crops and are the major source of fodder for livestock in the region. The huge stall-fed cattle population forces the farmers to devote a fairly high proportion of their cropped acreage to fodder crops. Apart from these crops which are exclusively for fodder, the huge requirements dictate the use of stalk of almost each and every grain and pulse crop for fodder, irrespective of its quality and nutritive value. The dried stalk is the only fodder when there are no crops in the fields, particularly in unirrigated areas. This is the case first from October to December, when the green kharif fodder is exhausted and the winter fodder is not yet ready for use. The second season is from April to July, when there is no fodder crop in the fields. Dry chari (Great millet) and bajra stalks are the only fodder items during the winter season while trampled stalks of wheat and gram are used during the summer season.

The importance of the fodder crops is indicated by the fact that, with minor exceptions, nowhere in the region is the fodder acreage less than 8 per cent of the total cropped area. Eastern half of the Malwa tract devotes 16 to 25 per cent of the total cropped area to the fodder crops while in the western half the corresponding figures range between 8 to 16. The decreasing amount towards the western parts of the Malwa does not indicate that the demand
MALWA TRACT (PUNJAB)
AREA UNDER FODDER CROPS

AVERAGE 1952 - 53
for fodder is less, but because of the fact that this tract is an important producer of bajra. This crop is not included in the fodder crops but much of the grain and whole of the stalk is used for feeding the cattle. Thus, if bajra acreage is included in fodder crops, the proportion of area under fodder crops becomes practically the same throughout the region.

Cut of the total 1,132,453 acres devoted to the fodder crops, 865,216 acres are during the kharif season. More than 75 per cent of the total fodder crops are thus grown during the kharif season. The reasons for this tendency are obvious. The rainfall during this period in the eastern half of the region is such that most of the fodder crops need no irrigation. In the western side of the Kalwa, though the rainfall is meagre (Fig. 7) yet adequate water from canals is available from April to August. Therefore, fodder is grown not only for that season, but much of it is dried and stored for utilizing it during the winter season.

The acreage of crops grown exclusively for feeding cattle during the rabi season is much less than that during the kharif season because of meagre availability of water. With the exception of a few drought resisting crops, little fodder of high value can be produced without irrigation. In canal irrigated areas the water supply during the winter months is very small, restricting the acreage under fodder crops. In areas where wells are numerous, the rabi fodder acreage is comparatively more because the required amount of water can
The acreage of the rabi fodder crops indicates (Fig. 53) that in the extreme eastern and western parts of the Malwa, rabi fodder crops account for less than 15 per cent of the total fodder acreage. The reason in the sub-mountainous tract is the lack of irrigational facilities and in the extreme western side, the limitation is imposed by the inadequate amount of water in canals.

In the flood plain of the Sutlej, there is 40 to 50 per cent of the total fodder area during the rabi season. This high percentage is due to two factors. First of all the overall kharif acreage is limited by the frequency of the floods. Secondly, adequate moisture in the soil and a large number of wells for irrigation offer good opportunities to grow fodder in winter.

In the rest of the region where irrigation from both wells and canals is available, 30 to 50 per cent of the fodder crops' acreage is during this season. In areas irrigated by wells, such as Ludhiana District, three-fifths of the total fodder acreage is during the rabi season. But in areas where irrigation is from canals, two-fifths of the total fodder crops are grown during the rabi season.

Fodder Crops (Kharif Season): The crops used for feeding cattle during kharif season are many, but the most important are chari (Great Millet) and guara (Cluster Bean). Maize, moong and moth are the others grown in various combinations. Leaving aside the first two, the others are not so important from the forage point of view and have been
MALWA TRACT (PUNJAB)

KHARIF FODDER ACREAGE UNDER IRRIGATION

AVERAGE 1952—57

PERCENT OF TOTAL KHARIF FODDER AREA

- OVER 75
- 50-75
- 25-50
- BELOW 25

DATA BY ASSESSMENT CIRCLES
discussed in the preceding chapters. Only chari and guara are the crops which are discussed here.

Great Millet or chari is the most important and the leading fodder crop of the region. It is grown to be used both as a green and as a dry fodder. It is sown alone where the crop is to be harvested for the winter months but mixed with pulses as well as with guara, maize and bajra when it is to be used as a green fodder.

The sowing period starts generally with the advent of monsoons and continues upto the end of July. Where the crop is grown with the help of irrigation, a part of the total is sown in May so that it may be ready for use in July, a time when the dry fodder storage is more or less exhausted. The crop is mainly sown on moderately fertile soils, it seldom happens that the crop is sown in fallow land. The ripe crop is harvested late in September or early in October and, if the moisture permits, it is followed by gram crop. In the rotational system this crop is rarely followed by a superior crop. The crop is grown in almost each and every part of the Malwa and on the whole, occupies 5.4 per cent of the total cropped or 33 per cent of the total fodder acreage of the region. In Ambala and Patiala districts, the importance of chari is greater than that in the rest of the tract. These two districts occupy 34 per cent of the total chari acreage of the Malwa (Table 45). Here the importance is primarily due to the greater amount of rainfall, which is sufficient to grow the crop without irrigation. Secondly, the importance...
Table 45

Great Millet (Chari) Acreage in the Malwa (Average 1952-57).

<table>
<thead>
<tr>
<th>District</th>
<th>Chari Acreage</th>
<th>Percentage of total Chari acreage of the Malwa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambala</td>
<td>47358</td>
<td>12.55</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>55541</td>
<td>14.75</td>
</tr>
<tr>
<td>Patiala</td>
<td>33082</td>
<td>22.10</td>
</tr>
<tr>
<td>Sangrur</td>
<td>55672</td>
<td>14.70</td>
</tr>
<tr>
<td>Bhatinda</td>
<td>50932</td>
<td>13.40</td>
</tr>
<tr>
<td>Ferozepur</td>
<td>84552</td>
<td>22.50</td>
</tr>
<tr>
<td>Total Malwa</td>
<td>377497</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Compiled from the Revenue Records available at headquarters of the tahsils of the Malwa Tract.

is more because the other kharif fodder, guara, does not find ideal soil conditions. Moreover, the need for storing the fodder for winter has again made it necessary to grow more chari. The importance of the crop towards the eastern side of the Malwa is contested by guara for which the conditions are more suitable, because of its drought resisting capacity and adaptability to sandy soils. On the other hand, the conditions for chari become less suitable as it requires loamy soil and more water.

Next to chari, guara (cluster bean) is the important kharif fodder crop. The latter is not only a relished food of cattle but it also enriches the soil.

The way of sowing the crop is almost similar to that of chari. However, it can be grown well in sandy soil.
and with little moisture. Also it takes only two months to ripen. Because of light soil and lower moisture requirements, the important area for its cultivation is south-western part of the Malwa where rainfall is less than 15" (Fig. 7) and the soils are sandy (Fig. 13). Ferozepore, Bhatinda and Sangrur districts account for 95 per cent of the total guara acreage of the region (Table 46). The cultivation of the crop is not significant in the districts of Ludhiana, Patiala and Ambala mainly because rainfall and soil are more suited to chari. Secondly, in Ambala and Patiala districts, dried stalk is required for the winter months and, for this purpose guara has no comparison with chari.

**Fodder Crops (Rabi Season):** The important fodder crops in the rabi season are fenugreek (math), Egyptian...
MALWA TRACT (PUNJAB)

AREA UNDER RABI FODDER CROPS

AVERAGE 1952-57

PER CENT OF TOTAL FODDER CROP AREA

OVER 45
30 - 45
15 - 30
BELOW 15

DATA BY ASSESSMENT CIRCLES
Clover (barseem), alfalfa (lusan) and Indian Clover (sanji). In addition, wheat, gram and oats are also used as green fodder. These crops are grown mainly on those fields from which some kharif crop has been harvested. The kharif crop may be maize, rice or any other.

The statistics of the individual crops are not maintained in most of the districts, making it difficult to assess accurately the magnitude of cropping of each fodder crop. However, Egyptian Clover (barseem) and fenugreek (mathey) dominate the rabi fodder acreage. Mathey grows on every type of soil, but like others, prefers fertile soil. Generally, it is grown as a second crop in the cotton fields and is sown at the time of final picking of cotton. The crop is comparatively drought-resisting and can ripen with only three waterings. However, it gives only a single cutting. Moreover, its use is restricted to the draught cattle. This crop is not used for milch cattle as it reduces the yield of milk. It is an important fodder for bullocks in areas where irrigational facilities exist. Ludhiana and Berozepore districts are most important for this crop. In Ludhiana, mathey and barseem together occupy about 75 per cent of the total winter fodder acreage (Table 47). The proportion is almost similar in other irrigated areas with a deviation towards barseem in areas of well irrigation and towards mathey in canal irrigated areas. Barseem occupies less acreage than mathey, but is more important than all the other winter fodder crops. Though a recent introduction, the crop has excellently adapted itself to this area. The crop is highly nourishing and is
Table 47. Composition of Winter Fodder in Ludhiana District. (Average 1952-57).

<table>
<thead>
<tr>
<th>Assessment Circle</th>
<th>% of total winter fodder acreage</th>
<th>Mathey</th>
<th>Barseem</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.N. Samrala</td>
<td>39.4</td>
<td>34.2</td>
<td>26.4</td>
<td></td>
</tr>
<tr>
<td>D.U. Samrala</td>
<td>61.5</td>
<td>20.6</td>
<td>17.9</td>
<td></td>
</tr>
<tr>
<td>Bet Samrala</td>
<td>50.0</td>
<td>24.5</td>
<td>25.4</td>
<td></td>
</tr>
<tr>
<td>Bet Jagraon</td>
<td>43.2</td>
<td>23.8</td>
<td>28.0</td>
<td></td>
</tr>
<tr>
<td>D.N. Jagraon</td>
<td>25.4</td>
<td>14.5</td>
<td>60.1</td>
<td></td>
</tr>
<tr>
<td>D.N. Ludhiana</td>
<td>37.8</td>
<td>33.1</td>
<td>29.1</td>
<td></td>
</tr>
<tr>
<td>D.U. Ludhiana</td>
<td>44.2</td>
<td>26.0</td>
<td>37.8</td>
<td></td>
</tr>
<tr>
<td>Powqd.</td>
<td>32.9</td>
<td>21.0</td>
<td>46.1</td>
<td></td>
</tr>
<tr>
<td>En Bet.</td>
<td>46.2</td>
<td>36.6</td>
<td>27.2</td>
<td></td>
</tr>
<tr>
<td>'Nh Bet.</td>
<td>18.2</td>
<td>60.5</td>
<td>21.5</td>
<td></td>
</tr>
</tbody>
</table>

Source: Compiled from the revenue records available at the headquarters of the tahsils of the Malwa Tract.

Leguminous. There is hardly any farmer who is not aware of the benefits of this crop and there is rarely any farm with irrigational facilities which does not grow barseem.

The crop is sown in late September or in early October and is ready for the first cutting in December. In all, the crop gives five to seven cuttings extending up to middle of April. The major requirement of the crop is the frequent watering which it needs at least once a week.

Areas where irrigation is from wells are very important for barseem because assured and frequent watering can be applied. The Blood plain of the Sutlej and the Ludhiana district together with the adjoining parts of
Patiala, Sangrur and Perosepore districts, where wells are numerous, are the important tracts for barseem cultivation.

The total acreage of the crop is small but is compensated by the number of cuttings which convert one acre of barseem almost equivalent to five to seven acres of the other fodder crops which give only one cutting. Though the crop is the best feed for all kinds of livestock yet its value is great for milk cattle. Indian Clover (Sanji) and alfalfa (lusen) are the other winter fodder crops which are also grown with irrigation but are less preferred in comparison with barseem and mathey.

Wheat, gram and oats are winter fodder crops of areas where no irrigational facilities exist. In the easternmost part of the Malwa, i.e., Kharar, Rupar, Rajpura, Sirkind and Patiala tahsils, the green stalk of wheat and gram crops are used for feeding cattle. The importance of these crops for winter fodder is, however, very small in irrigated areas.

**CONCLUSION**

A huge livestock population in the Malwa has necessitated the devotion of about a quarter of the total cropped area to fodder crops. Three-fourths of annual fodder acreage is sown during the Kharif period when both rainfall and temperature conditions are conducive to the growth of heavy yielding fodder crops. During this season the number of crops grown is large, but chari is the most important accounting for 33 per cent of the total fodder acreage. Most of the concentration of this crop is in the eastern half of the Malwa and in the flood plain. Guara is next in importance and
is the dominating fodder crop of areas having less than 15 inches of annual rainfall. The other important fodder crops are, mathey, barseem, lusan and sanji, grown during the winter with irrigation. A limited acreage of wheat, gram, and oats is also used for fodder during the winter months mostly in areas where irrigational facilities are not available.