There are two cropping periods in the Malwa. One set of crops is sown during the month of July and is known as kharif crops. The second one is sown during the months of October and November and known as the rabi crops. The kharif sowing corresponds with the advent of the monsoon rains while the rabi sowing is done after the retreat of the monsoons.

Kharif Crops: This is the first set of crops and accounts for 39.75 per cent of the annually cropped area. The kharif acreage is less than the rabi acreage in most of the assessment circles of the Malwa. However, the proportion of the area in the two harvests varies considerably in different parts of the region. In the eastern Malwa, that is, in the districts of Patiala, Ambala and eastern Ludhiana, kharif and rabi areas are almost equal. Adequate amount of monsoon rainfall (Fig.9) is the main factor for high proportion of kharif acreage. The temperature and rainfall conditions favour the quick germination of the seeds. Therefore, much land can be cultivated without any prior preparation. The proportion of the kharif acreage decreases both in the flood plain of the Sutlej and in the western parts of the Malwa. In the flood plain it is the excessive moisture which does not allow the timely sowing. Again the fear of damage to the kharif crops from frequent and extensive floods during the monsoon period also limits the kharif acreage. In Bhatinda, Ferozepore and Sangrur districts, the amount of monsoon (summer) rainfall is not adequate; also it is highly variable. Thus there is little
scope for many kharif crops to mature without irrigation. The water in the canals is limited but each crop requires frequent waterings. As a result only a limited proportion of the land can be supplied with water. Though canal water covers small kharif acreage but its supply is frequent and adequate so as to reap a good harvest. Area sown unirrigated is small because of limited chances of success. Quite a high percentage of the cultivated land is left fallow during this season so that it may be ploughed intensively and may conserve the maximum amount of moisture for the coming rabi crop. Table 19 indicates the crop composition during this season. It is interesting that

Table 19

<table>
<thead>
<tr>
<th>Detail</th>
<th>Acroage Devoted.</th>
<th>% of Kharif cropped Area.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
<td>684802</td>
<td>24.6</td>
</tr>
<tr>
<td>Pulses.</td>
<td>193218</td>
<td>6.9</td>
</tr>
<tr>
<td>Oil-seeds.</td>
<td>1959</td>
<td>0.07</td>
</tr>
<tr>
<td>Cash Crops.</td>
<td>1034439</td>
<td>37.2</td>
</tr>
<tr>
<td>Fodder Crops.</td>
<td>865216</td>
<td>31.1</td>
</tr>
<tr>
<td>Total.</td>
<td>2779634</td>
<td>100</td>
</tr>
</tbody>
</table>

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

there is a small gap in the acreage of three important sets of crops. Comparatively less importance of the cereals during kharif is because of wheat which is considered a superior crop but which is sown during the mbi season. On the other
hand, the crops which can be grown during this period are quite inferior to wheat. The importance of the cash crops is more than the cereals mainly because of the availability of water for irrigation. Costly canal water is utilized in order to get the maximum returns in cash. The importance of the fodder crops is also greater than the cereals mainly because of the fact that these can be grown without irrigation. The necessity of the fodder for the winter months is also responsible for more acreage of fodder crops in this season.

The ratio of the various sets of the crops varies from area to area in the Malwa. In the districts of Ambala and Patiala the importance of the cash crops is less. This is because of the fact that these crops require an assured water supply but in this area irrigation is limited. On the other hand, fodder crops which can be grown without irrigation predominate in this area. Cereals are of greater importance than both cash and fodder crops. In the flood plain the importance of the fodder crops is much less than the cash and cereal crops. This is because of the fact that land remains uncultivated which serves the purpose of grazing and saves the land from fodder crops.

On the other hand, in central and south-western Malwa the importance of the cash crops is much greater than the cereals and the fodder crops. This is due to the excellent development of irrigation facilities in these tracts of bigger land-holdings. Because water for irrigation is quite costly so most of it is applied to the crops which fetch the maximum of return. So cash crops are always preferred to the cereals.
Oil-seeds and pulses are rather unimportant as compared to the above mentioned crops in whole of the Malwa. Of the pulses grown in this area, 90 per cent are grown during this season.

Rabi Crops: Rabi sowing starts in October and is over by the middle of December. It is harvested by the third week of April. Before sowing, the land is ploughed several times during the period of summer monsoon rains so that it may conserve the maximum possible moisture. In areas where the amount of rainfall is very small, a pre-sowing watering from the canals is essential at least for the superior grains. The land where rabi crops are grown is fallow one as well as that which has already been under the kharif crops. In areas of fertile soils and of good irrigational facilities, it is the latter type which is more important. In unirrigated areas and also in light sandy tracts, fallowing is necessary for rabi cropping. This proportion of fallowing, however, fluctuates from year to year depending upon the amount of rainfall.

During the winter season the rainfall is less than four inches and the growing period is of longer duration. Even then there is little check on the growth of plants. This is partly because of small evapo-transpiration and partly because of the drought resisting nature of the rabi plants. In areas where the rainfall is about four inches during this period, almost every crop is grown without
irrigation. In areas of less than two inches rainfall, the superior-most crops can mature with four waterings while the inferior crops may survive with one or two waterings. Even when the amount of rainfall is small and the water in the canals is limited, a complete failure of the rabi crops is rare.

Table 20 shows the composition of the rabi crops. It is clear that cereals overshadow all the other crops. Such a great dominance of the cereal crops is due to the huge food requirements of the dense population. The cool and semi-arid climatic conditions prevailing from October to March (Fig. 12) are quite well suited to crops such as wheat, gram and barley. The importance of these crops is

Table 20

<table>
<thead>
<tr>
<th>Detail</th>
<th>Acreage devoted</th>
<th>% of Kharif cropped Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
<td>3760156</td>
<td>89.8</td>
</tr>
<tr>
<td>Pulses</td>
<td>11657</td>
<td>0.3</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>145896</td>
<td>3.5</td>
</tr>
<tr>
<td>Cash Crops</td>
<td>6032</td>
<td>0.1</td>
</tr>
<tr>
<td>Fodder Crops</td>
<td>267320</td>
<td>6.3</td>
</tr>
<tr>
<td>Total</td>
<td>4199371</td>
<td>100</td>
</tr>
</tbody>
</table>

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

further increased by the lesser suitability of moisture conditions for cash and fodder crops. Thus, nine-tenths of the total rabi acreage of the Malwa is under the cereals. The acreage under cash and fodder crops is small. In canal irrigated areas, the amount of water available during this season is very small and hardly fulfills the needs of wheat crop. Thus very little amount of water can be saved for the other crops including the fodder crops. Fodder acreage is of significance only in the flood plain of the Sutlej and in those areas which are irrigated from the wells and tube-wells.

The acreage under the oilseeds and pulses is almost similar to that during the kharif season. The only difference is the shift in their positions. More than 90 per cent of the total oilseeds are grown during this season but the importance of pulses during the rabi season is that of oilseeds during the kharif season.

CROPPED AREA.

Out of a total area of 7.7 million acres which constitutes the Malwa region, 6.9 million acres are cropped annually. The proportion and distribution of the cultivated land have been discussed previously in Chapter IV. The huge requirements of population and livestock induce the farmers to sow the maximum possible area and they do so unless the circumstances make it necessary to keep a part of cultivated land uncropped. To meet the staggering food and fodder needs, not only most of the land is sown year after year but a large proportion of it is sown more than once in a year.
MALWA TRACT (PUNJAB)
TOTAL CROPPED AREA
AVERAGE 1952—57

PER CENT OF NET SOWN AREA

- OVER 140
- 120 — 140
- 100 — 120

DATA BY ASSESSMENT CIRCLES

Fig. 27
In all the assessment circles on the Malwa, total cropped area exceeds net sown area because there is always a part of the kharif area which is re-sown during the rabi. On the whole, 120 per cent of the net sown area is cropped annually. But it varies greatly within the region – the range of variation being between 105 and 160 per cent (Fig. 27) depending upon the amount of rainfall, irrigation facilities, character of the soil and the size of land holdings.

Areas where Cropped Area is 100 to 120 per cent of the Net Sown Area: The tract covered in this category includes Patiala district, except Nabha tahsil, and the Rupar and Kharar tahsils excluding the Neli and Seoti-I circles. A narrow belt of this category continues west-wards through the flood plain and Dhaia Neecha of Ludhiana district to widen again in Faridkot tahsil. In the eastern half of the Malwa much of the cropping is dependent upon rainfall. The amount of rainfall during the last quarter of the rainy season determines the extent of such kharif area as can be re-sown for the rabi. As the variability of rainfall is high there are wide fluctuations in the proportion of land cropped more than once.

In the western parts of the Malwa rainfall is quite inadequate; unless there is provision for irrigation there is no chance of growing rabi crops in the area of kharif crops. Moreover, the soils are light and do not return a profitable second crop in a year. Finally, the size of land holdings being bigger, a considerable percentage of the land
is left fallow. The amount of canal water which begins to decrease in September can command only limited land for adequate irrigation.

Areas where cropped area is 120 to 140 per cent of the Net Sown Area: Central Malwa, covering the Sangrur district, upland areas of Ludhiana district, flood plain of Ferozepore district, Neli and Seoti circles of Kharar and the tahsils of Moga, Bhatinda, Mansa and Nabha, is included in this type. In the northern parts of central Malwa, 130 to 140 per cent of the net cultivated area is annually cropped. Obviously, very fertile soils and excellent facilities for well and canal irrigation are the main causes. Apart from this, the land holdings are of smaller size which tend to compel the farmers to sow the maximum possible land both during the rabi and kharif seasons. In the southern parts of central Malwa the proportion varies between 120 to 130 per cent. This is partly because of bigger size of land holdings and partly because of restricted amount of canal water available for bringing the kharif land under the rabi crops.

In the flood plain of Ferozepore, a considerable proportion of the land is not available for cultivation. Even from the cultivated area some land is left fallow. Whatever is remaining, is sown quite intensively. Though the rainfall is meagre but the seasonal canals supply water for sowing the rabi crops. The last water is spread over a huge area which has been under the kharif crops. Rice crop which
is important here has also something to contribute. This crop is ready for harvest in October. At this time there is enough moisture in the rice fields for sowing the next crop even without irrigation.

In parts of Kharar tahsil more of double cropping is possible because of fertile and easily workable soils and adequate amount of rainfall during the month of September. In the assessment circle of Neli, the water from the kuls is mainly responsible for bringing much of the kharif acreage under the rabi crops.

It is only in two small tracts where more than 140 per cent of net sown area is cropped. One is the Pewad circle of Ludhiana tahsil, where 145 per cent of the net sown area is cropped annually and the other one is the Rohi and Dora circles of Mamdot tract of Ferozepore tahsil where the figure is 160. Fertile soils, excellent irrigational facilities and small size of landholdings are responsible for this intensity.

CONCLUSION

In order to meet the huge food and fodder requirements not only maximum land has been brought under the plough, but more than one-fifth of the cultivated area is also sown more than once. The acreage of land cropped annually varies with rainfall and irrigation. Two-fifths of the total cropped area is sown during the kharif season. Out of the total area cropped, 64 per cent is under the food crops, 15 per cent under the cash crops and 16 per cent under the fodder crops. This ratio, however, is not uniform during the kharif and
rabi seasons. During the kharif period, one-quarter of the sown area is under the cereals and one-third each under the cash and fodder crops. During the rabi season, nine-tenths of the sown acreage is under the cereals - wheat and gram being the outstanding ones. Fodder, cash and other crops, all combined, occupy about one-tenth of the rabi acreage.