CHAPTER - V

NEW TREND OF CROPPING PATTERN : HORTICULTURE FARMING

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CHAPTER V

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BRIEF HISTORY OF HORTICULTURE :

The entire Sangola taluka falls in drought prone area of the Solapur district. Economically it is a backword taluka in the district. Neither industrial sector nor agriculture sector helps for the upliftment of economic condition of the taluka. According to the reports of the National Agricultural Commission[32] we can identify all the characteristics of dry farming.

It is noted that annual average rainfall in this area is considerably low, and also uneven and irregular. The rate of soil erosion is high due to fast flowing of rain water. Due to the lack of percolation capacity the level of water table is also low. Therefore, it is only possible to grow inferior food grains i.e. Jawar and Bajra. The total forest area is not in accordance in taluka. Due to uneven rainfall and dry climetic condition, the rate of success of harvest is low. To grow more people will try to cultivate even on barren land. It seems that the net cultivable area is high, but due to the low productivity the total production is low. Therefore, the ups and downs in all these conditions will create an uncertainty in the economic life of the people of this area.

Responsibility falls on the 's houlder' of the government, Horticulturist, Agriculturist, Scientiest and on financial institutions to search out the remedies for low agricultural

productivity of these types of regions. However, governments, agricultural universities and especially harticulturist have done a lot in the matter. According to their opinion the adoption and development of horticultural farming in these types of dry areas is one of the effective measures or solutions to solve the problem of economic uncertainty. Findings show that per hectare productivity of pomegranate, jujube (Ber) tamarind, and custard apple is higher in this dry area where rainfall is low and dry climatic conditions prevail. The land of one acere which is under horticulture will yield more income than the land of ten aceres, which is under traditional crops. Therefore, after findings of these types of profitable horticulture farming it is but natural, to attract the farmers towards these new crop patterns.

In order to overcome the consequences of the vicious circles of traditional cropping system, the initiation of the farmers to horticultural practices is a must. But the fruit farming system (Horticulture) is not completely new for the farmers of Sangola taluka. There were some fruit growing farms like sweet orange, sapodill, pomegranate, etc. But due to lack of sufficient water and scientific view, that traditional fruit growing farming system was not continued. After acknowledging the importance of horticulture, some managers of regional financial institutions (those who are related to agricultural sector) and some big and educated farmers have taken an initiative in the adoption of horticulture

especially growing of pomegranate, grape and ber, in this region. The availability of adequate finance and proper guidance for the development of horticulture are the important incentives in the era of horticulture farming. In the beginning of 1980 the branch manager of the State Bank of India, Sangola, has taken an initiative to provide sufficient loan finances to the farmers, particularly to those who are ready to develop their fruit growing farms. At the same time the SBI had arranged some visits to well known fruit farms for the farmers of Sangola. In the mean time many seminars and lectures by resource persons have been arranged by the agriculture universities and colleges. These are the important incentives for the development of horticulture farming in Sangola taluka. Therefore, the contribution of availability of adequate finance, knowledge and guidance are important events in the development of horticultural farming systems in the Sangola taluka. Due to all these incentives and efforts of agricultural officers, Panchayat Samitee, Fal Utpadak Co-op. Sangh and initiators, these people of Sangola are now more familiar with horticulture farming system. This has resulted in an increase in the land coming under fruit and other horticultural crop cultivation. It is a major outcome of development of horticulture, i.e. new cropping pattern in Sangola taluka.

TYPES OF HORTICULTURE IN SANGOLA TALUKA :

The type of horticulture in Sangola Taluka include pomology, vegetable, floriculture and ornamental. But one can find mostly only one type of horticulture in Sangola taluka i.e.

pomology. Pomology type of horticulture includes all types of fruits. In dry land area fruits like Ber, Pomegranate, Tamarind, custurd apple, Guava, Papaya and also Grapes etc. will grow.

In Sangola taluka trace is given for growing some selected fruits i.e. Grape, Pomegranate and Ber.

GRAPE :

Grape is a wellknown fruit throughout the world. According to some scientests the origin of grape was "Asia minor". One can find some references to grapes in early Indian History. The credit of development and spread of grape farming in India goes to the Mughal emporors. Initially this fruit was used by kings, rich persons, etc. for eating and for making wines. But today it is a common, popular fruit for everybody. In the development of grape farming the initial regions in Maharashtra were Doulatabad, Aurangabad and Ahamadnagar.

In Sangola the era of grape farming started since 1980. The necessary favourable conditions, fortunately are available in Sangola taluka for the growth of grapes. It does not require more fertile land and abundent water, as is the case with sugarcane. But comparatively it requires more fertile land and water than pomegranate. Fairly light soils are ordinarily preferred for grapes, and good drainage is essential.

There are about 157 varieties of grapes in the world. According to the use of grape, one can classify them into four categories. Grapes are used for -

a) making wine, b) making juice,

c) making raisins and d) eating.

Generally, one can find, selection 7 (Chima Sahebi), Bhokari, Kalisahebi, Anab-A-Shahi and Thompson seedless etc. types of grapes in India. Among them Thompson seedless is important type of grape not only in Sangola but in India also.

The pioneer of growing Thompson seedless grapes was Mr. William Thompson of America (Yuba City). Nowadays this type of grape is very popular, even among people of lower income groups. Generally the new types of grape farms are of the Thompson seedless type. It is a seedless fruit, therefore, it is very easy to eat, and has gained popularity from that very fact. Through processing grapes, one can produce raisins (bedana) by this variety. The average weight of perbunch of Thompson seedless grape is 250 to 300 grams and the average productivity per hectare is about 20 tonnes. In our given climatic conditions, fruit of Thompson seedless grape types are available for market for upto 145 days. This type of grape is handy to carry, popular among consumers and the average productivity is generally high. That is why Thompson seedless is a popular variety among the producers of Sangola taluka.

POMEGRANATE :

Grown all over India, from Kashmir to Madras, the pomegranate is nowhere of much commercial importance. Its popularity is due inpart to the ornamental character of the tree, especially when bearing bright red flowers, as it is, much of the year. It is thought to be indigenous to the region of Iran where it was first cultivated in about 2000 B,C. But it spread to the Mediteranean countries at a very early date. Pomegranates of high quality can be found only where there is a cool winter and dry summer. The trees grow under a wide range of climatic condition. It can stand considerable frost, but is injured by temperature below about $12^{o}F$. Where the winter is cold, the tree is deciduous, but on the plains of India it is evergreen or partially deciduous.

It does well under desert condition. It is very drought resistance, but does not bear well without irrigation. On the other hand, it will flourish on land too wet for many crops.

As regards soil requirements, it is not particular, though it is thought that a heavy loam is favourable to the production of fruits of high quality. It is more tolerant of alkali than most fruit trees.

In India, Maharashtra stood first in the production of pomegranate. Recently i.e. after 1980-81 Sangola found mention in the top list in the production of pomegranate by quality and

and quantity. Especially, Ganesh variety of pomegranate is popular in Sangola taluka.

Where there is scarcity of water and light soils like in Sangola, in that area the production of pomegranate is profitable, than the production of other fruits. Therefore, in this poor area this type of cropsystem nowadays is popular.

Pomegranate generally used for eating. It can be used for making medicine, wine, juice etc.

There are many varieties in pomegranate in India, which can be classified according to their size, colour, quality, seeds, softness of the seed, colour of the seed, taste etc. On the basis of these, following types of pomegranate varieties are grown. Alandi, Maskat, Kabul, Kandhari, Dholaka, Papatsel, Basin seedless, Ganesh (G.B.G.No.1) and G.K.V.K.

In Sangola taluka most of the farmers go in for Ganesh pomegranate. This type of variety is popular in the area. It is generally believed that Ganesh pomegranate is a qualified variety in Maharashtra. Dr. Chima (in 1946) is a pioneer, in developing this type of variety through Alandi variety of pomegranate with a selected method. Ganesh pomegranate has its own attractive characteristics. By size, it is medium, it has soft seeds, tasty and handy to carry. It yields more production per hectare and gives returns in short period, i.e. within 18 months after planting. Therefore, due to all these characteristics this variety is not only popular in Sangola, but also it is profitable type of crop to those who have poor soils.

BER (JUJUBE) :

The ber is one of the most common wild fruit trees in India, and it is cultivated to a considerable extent. Most of the seedling trees bear small fruits of poor quality, but there are a number of superior varieties. These are very popular, but sell at low prices and are considered as "Poor man's fruit."

The classification of ber is confused, and has led to much confusion about the nature and culture of the fruit. One type of ber has been ground in China for atleast four thousand years, and is considered one of the five most important fruits in that country.

Ber is familier to Indian people since 1500-1000 B.C. In the Sanskrit literature, especially in "Ramayana" there is a reference to ber. But recently i.e. since 400 years this crop has got its own safe.

A popular 'say' in Marathi is that 'Gav tethe bori' (where there is a village, there is ber). It indicates that to some extent ber is a natural crop. It grown in a very poor and dry land, on the bounderies of farm, on both sides of the road and in 'gairan'. These are all from local varieties, nobody will take care about cultivation, watering or other type of protection. Therefore, in most part of India it is a neglected crop.

But in recent years scientiests have shown that ber is a profitable crop, even for those who have a small piece of less fertile land. Ber is such a fruit which will grow any-where, it does not require fertile land, it will yield sufficient returns with small doses of water. The cost of cultivation and production is very negligible. Therefore, ber is also popular in Sangola like pomegranates. Since 1985 the number of ber growers has increased to a considerable extent, because of above characteristics.

Ber grows on any type of soil making it economical where other crops become prohibitive cost-wise. Another feature of this plant is that where the average rainfall is extremely low, and where dry climatic condition prevail, this plant will yield a sufficient amount of production. Therefore, for small,marginal and poor farmers it is a profitable crop.

Ber can be used for eating and for medicine. It has got 'A' and 'B' vitamins and is also used in cooking. The leaves of the ber are also used as fodder for goats and sheep. The plant wood and roots are used for making furniture and medicines respectively.

There are mainly two varieties of ber. One is traditional and the other a hybrid. Recently in most parts of the area a second type of ber we can be found which is superior to the traditional variety in respect of size, colour, weight, taste and calories, and the amount of production. There are more than

150 varieties in this type of ber. The different types of ber can be classified according to their growing period, size, weight, taste etc. Mahatma Fule Agriculture University, Rahuri, has identified 92 varieties of ber. Among them Umran, Elaichi, Somu, Mehrum, Jogiya, Sanoor 2 and 6 and Kadaka are popular. Almost all these varieties are grown by the farmers of Sangola. Among them the Umran variety is popular in most parts of Sangola.

LAND UNDER HORTICULTURE :

GRAPE, POMEGRANATE, BER :

Horticulture is not new for Sangola, Since many years there were some fruit growing farms like sweet orange, guava, custurd apple, banana etc. The total land under this type of farming was negligible, but due to the development of new varieties of fruits like pomegranate, bet etc., by agricultural universities and experts, farmers are trying to grow these types of fruits on their land. In Sangola the land area under horticulture has been increasing. It seems that horticulture in Sangola is a profitable industry. If we compare the total land under horticulture to total cultivated land, we come to the conclusion that, new uncultivable, less fertile and poor land is gradually comming under horticulture.

In the year 1987 the total cultivated area was 80,000 hectares and the area under pomegranate, grape and ber was

774 hectares, accounting for almost one percent of the total cultivated land.

In Sangola mainly three types of fruits are grown under horticulture, - Grape, Pomegranate and Ber. The following table 5.1 indicates the total area under cultivation for each type of fruit.

TABLE 5.1

TOTAL AREA UNDER MAJOR FRUIT CROPS IN 1987

(Hectare)

Pomegranate	Ber	Grape	Others	Total
474.50	143.60	77.45	78.55	774.10
(61.29)	(18.55)	(10.00)	(10.16)	(100)

Source : Statistical department Panchayat Samitee Sangola and Pandhari Prasad Fal Utpadak Co-op. Sangh, Sangola.

Note : Figures in brackets are percentages to the total.

The total land under these three main fruit crops is 774.10 hectares. Out of that 474.50 hectare (61 percent) is under pomegranate, 143.60 hectare (19 percent) is under ber, 77.45 hectare (10 percent) is under grape and remaining 78.55 hectare (10 percent) is under other fruits like guava, custurd apple, sapodill, banana, lime, fig etc. Pomegranate is a popular fruit crop which accounts for 3/5 of the total land and ber almost 1/5 of total land under fruit cultivation.

Diagram 5.1

Diagramatic Representation of Table 5.1

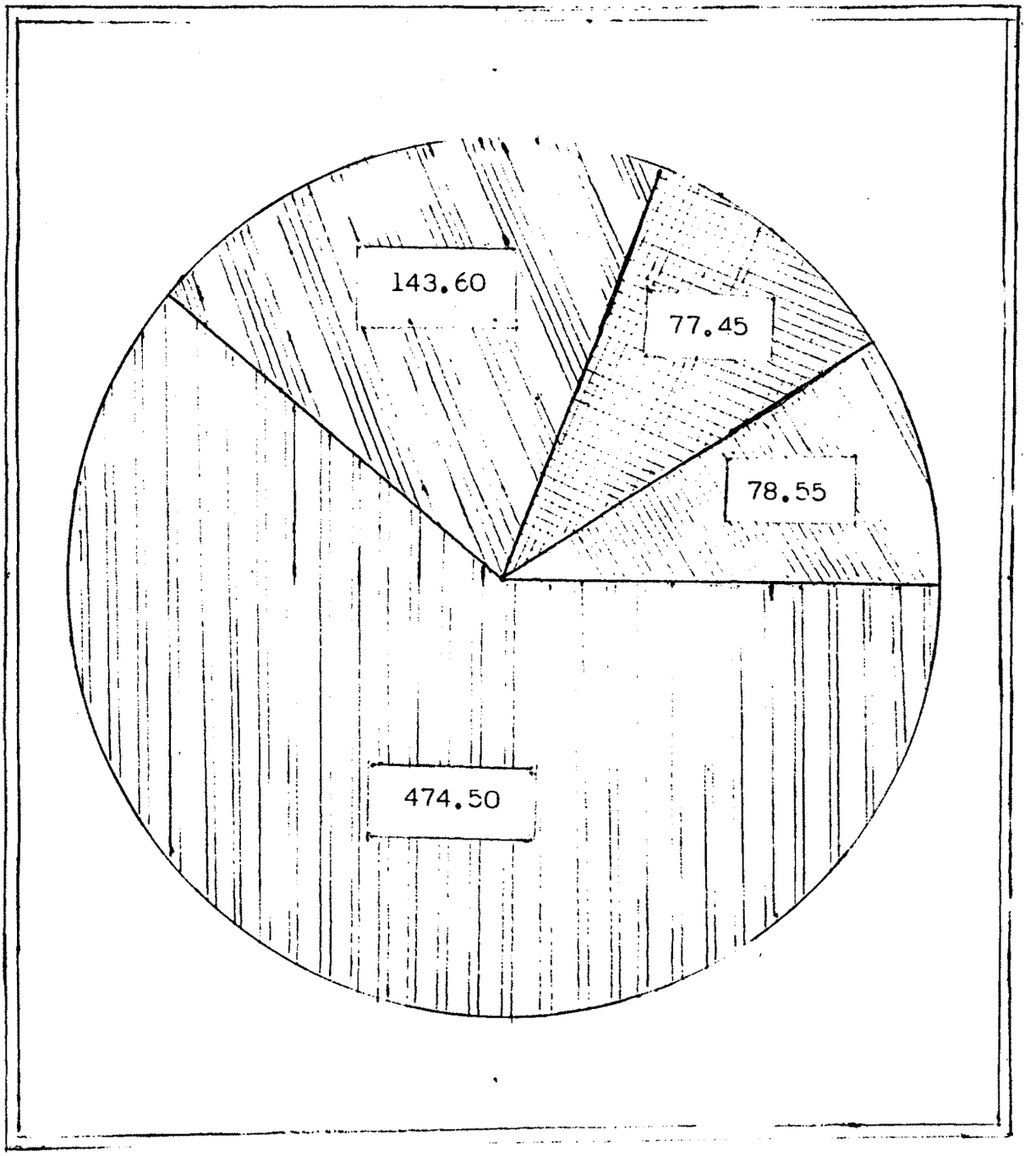


Diagram : 5.2

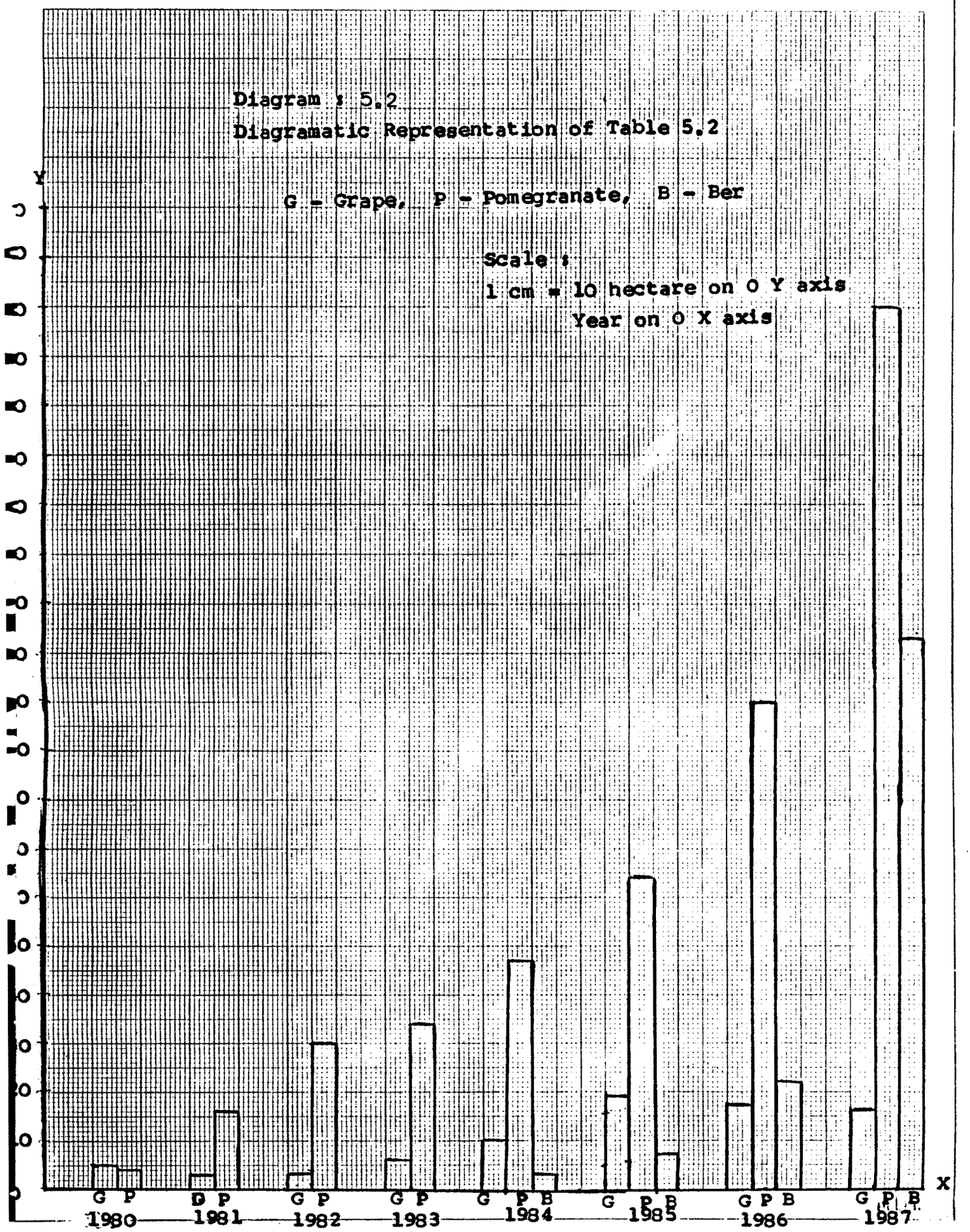
Diagramatic Representation of Table 5.2

G - Grape, P - Pomegranate, B - Ber

Scale :

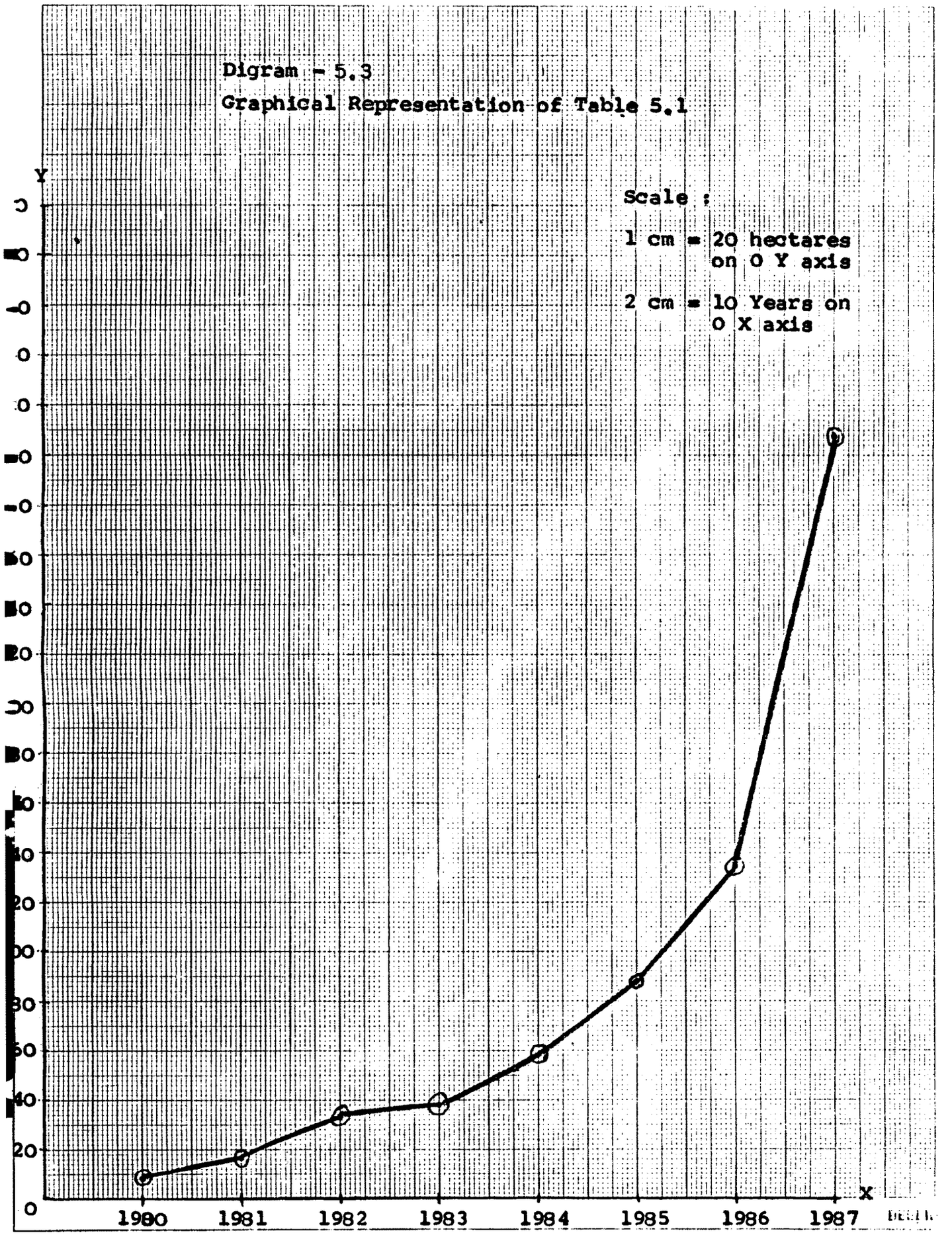
1 cm = 10 hectare on O Y axis

Year on O X axis



Digram - 5.3

Graphical Representation of Table 5.1



After becoming aware of the importance of horticulture more people of Sangola taluka are attracted towards the development of horticulture. Along with their traditional cropping patterns, they are also adopting this new crop pattern on their unused land. Since 1981 the land under cultivation of grape, pomegranate and ber has increased to a considerable extent. (Table 5.2).

TABLE 5.2

ADDITIONAL AREA UNDER MAJOR FRUIT CROPS (HECTARE) IN SANGOLA TALUKA, EACH YEAR

Year	Pomegranate	Ber	Grape	Total
1980	4.30	-	5.00	9.30
1981	15.80	-	2.40	18.20
1982	29.90	-	3.00	32.90
1983	34.10	-	5.50	39.60
1984	47.20	3.00	9.50	59.70
1985	63.85	7.00	18.85	89.70
1986	100.00	21.40	17.00	138.40
1987	179.35	112.20	16.20	307.75
Total	474.50	143.60	77.45	695.55

Source : Statistical department Panchayat Samitee, Sangola and Pandhari Prasad Fal Utpadak Co-op. Sangh, Sangola.

In the initial period i.e. 1980 slightly more than 9 hectares were under pomegranate and grape cultivation. Within two years this area had increased nearly four folds. In the year 1985 area increased by 10 fold. By the year 1987 the

total area under these three fruit crop had increased to a considerable extent, by 307.75 hectares. In another words from the above table it is clear that more and more land is coming under fruit crop cultivation.

Again it shows that the area under pomegranate is steadly increasing. In the year 1980 the total area under this fruit crop was 4.30 hectares only, but by 1987 this area had increased by 179.35 hectares. The new type of ber cultivation was started. in the year 1984. The area under this crop is also increasing but the rate of increase of this type of area is less than the rate of growth of the area under pomegranate.

The total area under grape cultivation has increased right through from 1980 onwards, but it has not been a smooth increase. The increase in area has been changing from year to year. This is a possibly because of the better and newer variety of pomegranate and ber which is less risky than grapes.

In conclusion we say that, without affecting or decreasing the area under traditional crop in Sangola taluka, the area under horticulture has been increasing. Among them the area under popular fruit, i.e. Ganesh pomegranate is increasing to a considerable extent. There is also room for increasing area under other fruit crops also.

NATURE OF COST AND INCOME FROM HORTICULTURE :

The concept of cost and income are important in every business. Because the progress of that business or the rate of profit from that business depend on the difference between the costs and revenue. It would, therefore, help to know the cost of cultivation, including that of marketing of pomegranate, ber and grapes and the income from these fruits per hectare. In Sangola taluka the available data show that the business of horticulture is profitable. The income from these three fruits is considerably higher than the cost of production. Like the income, the cost of the production of these crops will vary from crop to crop. The cost of production can be classified on the basis of the establishment cost and crop cultivation cost. Table 5.3 shows the nature of establishment cost in general.

TABLE 5.3

GENERAL ESTABLISHMENT COST OF HORTICULTURE (PER HECTARE)

Sr.No.	I t e m s
1	Preparation of land
2	Digging of pits
3	Filling back pits
4	Planting material
5	Planting and staking
6	Manures and fertilisers
7	Plant protection
8	Irrigation supporting
9	Interculture
10	Miscellaneous

Source : NABARD Published guidelines 1.7.86.

Establishment cost will vary from crop to crop. In case of pomegranate the establishment cost is Rs.15,700 per hectare, in case of ber it is Rs.10,500 and in case of grapes it is Rs.60,000. Of course, the amount of the establishment cost will also depend upon the number of 'trees' planted per hectare and the nature of the land.

The second important type of cost is crop cultivation cost. Like the establishment cost, this cost also differs from crop to crop. The following table shows the nature of this type of cost.

TABLE 5.4

CROP CULTIVATION COST OF POMEGRANATE, BER AND GRAPE, (1985) FOR ONE HECTARE (RUPEES)

Sr.No.	I t e m s	Pome-granate	Ber	Grape
1	Preparation of pits	800	150	1,000
2	Cutting	500	-	3,880
3	Manures and Fertilizers	22,000	3,200	26,850
4	Labour	3,935	1,010	2,850
5	Thinning	500	-	5,000
6	Insecticides, pesticides and others	5,500	770	6,100
7	Irrigation, powers	500	150	1,000
8	Supervision	3,000	1,000	6,000
9	Marketing	1,20,500	83,000	1,40,300
10	Miscellaneous	-	-	9,000
	Total	1,57,235	89,280	2,01,980

Source : Statistical department Panchayat Samitee Sangola and Pandhari Prasad Fal Utpadak Co-op. Sangh, Sangola.

The above table indicates that the cost of production of every crop is more or less similar. The cost of manure, fertiliser and marketing is extremely high or in other words, they are the major costs. The cost of cultivation of grapes is higher than that of pomegranates and ber. Among these three fruit crops the cost of cultivation of ber is low.

If we compare these costs to their respective amount of income we will know the rate of profit in each crop growing business.

TABLE 5.5

NET PROFIT FROM FRUIT CROPS (PER HECTARE)

Items	Pomegranate	Ber	Grape
Total cost	1,57,235	89,280	2,01,980
Total income	2,40,000	1,40,000	3,50,000
Net Profit	82,765	50,720	1,48,020

Source : Ibid Table 5.4

The table shows that the cost of production of grape is much more profitable than any of the other two fruits. But at the same time the cost of production and amount of income is also higher than for the two crops. Pomegranate stand second in respect of profits. The rate of profit per hectare for pomegranate is about Rs.82,000/-. In case of ber no doubt profit rate is low, but the total cost of production

is also considerably low compared to the pomegranate and grape. Where grapes and pomegranates do not yield satisfactory returns, it is possible to switch over to the production of ber, which will be more economical.