Chapter Five
Chapter-Five
Production Dimensions of Hybrid Seeds In Haveri District

Seed farmers in the Haveri district have been engaged in the production of more than one type of hybrid seeds suiting to the quality of the soils of their land and their traditional specialization in their respective type of crops grown by them. The farmers in the study area have provided useful data about the various aspects of production of seeds.

Nature of soil

Red and black soil have been used by the 100 respondent seed farmers in the study area. Information about the nature of soil of the seed growers covered by the study is indicated in the following table.

<table>
<thead>
<tr>
<th>Nature of soil</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red soil</td>
<td>33</td>
</tr>
<tr>
<td>Black soil</td>
<td>30</td>
</tr>
<tr>
<td>Both Red and Black</td>
<td>32</td>
</tr>
<tr>
<td>Other</td>
<td>05</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source-Field Survey

The responses indicate that the farmers growing hybrid seeds have been using both red and black soil for producing the seeds. A very small number of seed farmers have been using other type of soil to produce hybrid seeds. It is clear from the details in the table that 33 percent of farmers used
red soil, 30 percent black soil and 32 percent of them have both type of soil. A very small number 5 percent of them have used other type of soil to grow the seeds of hybrid quality.

**Irrigation Facilities**

The seed growers have been producing hybrid seeds on both irrigated and non-irrigated soil as could be seen from the details in the following table.

<table>
<thead>
<tr>
<th>Land used for seeds farming</th>
<th>No of Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigated</td>
<td>11</td>
</tr>
<tr>
<td>Non-Irrigated</td>
<td>02</td>
</tr>
<tr>
<td>Both</td>
<td>87</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source-Field Survey

A small number of 11 seed farmers have been growing the seeds on the irrigated land only while 2 farmers have been growing seeds on non-irrigated land. However a large number of 87 respondent farmers have been growing hybrid seed on both irrigated and non-irrigated lands.

**Type of Hybrid Seeds Grown**

The information collected from the respondent seed farmers indicate that they produced 5 types of hybrid seeds viz (i) Cotton (ii) Tomato (iii) Brinjal (iv) Okra and (v) Sunflower.

The following table provides the type of seeds grown by the 100 respondent farmers covered by the study.
Table NO 5.3 Type Of Hybrid Seeds Produced

<table>
<thead>
<tr>
<th>Seeds produced</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Cotton</td>
<td>37</td>
</tr>
<tr>
<td>2 Tomato</td>
<td>81</td>
</tr>
<tr>
<td>3 Brinjal</td>
<td>46</td>
</tr>
<tr>
<td>4 Okra</td>
<td>59</td>
</tr>
<tr>
<td>5 Sunflower</td>
<td>65</td>
</tr>
</tbody>
</table>

Source-Field Survey

The details in the above table indicate that maximum of 81 seed farmers produced tomato seeds followed by 65 producing sunflower, 59 okra, 46 brinjal and 37 farmers producing cotton. The total number of farmers producing different type of hybrid seeds is more than the actual number of 100 selected seed farmers since many of them produce more than one type of hybrid seeds.

Number of Crops Grown in a Year

Seed producing crops are grown more than once during a year in case of tomato, brinjal, okra and sunflower. However a single crop of cotton is grown during a year. The responses are indicated in the following table

Table NO 5.4 Number Of Seed Crops Grown

<table>
<thead>
<tr>
<th>Crops</th>
<th>Number of crops grown and the no of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Once a year</td>
</tr>
<tr>
<td>Cotton</td>
<td>37</td>
</tr>
<tr>
<td>Tomato</td>
<td>23</td>
</tr>
<tr>
<td>Brinjal</td>
<td>30</td>
</tr>
<tr>
<td>Okra</td>
<td>48</td>
</tr>
<tr>
<td>Sunflower</td>
<td>60</td>
</tr>
</tbody>
</table>

Source-Field Survey
It is evident from the details in the above table that 37 seed farmers had been producing cotton hybrid seeds only once in a year. However tomato hybrid seeds are grown once a year by 23 seed farmers twice a year by 54 seed farmers and thrice a year by 4 seed farmers. Again 30 seed farmers produced brinjal hybrid seeds once a year, 13 seed farmers produced twice a year and 3 seed farmers produced three times a year. Okra hybrid seed were produced once a year by 11 seed farmers. Similarly sunflower hybrid seeds were produced once a year by 60 seed farmers and twice a year by 5 seed farmers.

**Hybrid and High Yielding seeds**

It is significant to note that 6 farmers produced high yielding varieties of seeds while 12 seed farmers produced hybrid seeds. It is further learnt from the respondents that 82 of the 100 seed farmers were producing both highyielding and hybrid seeds. The following table provides the details.

**Table NO 5.5 Hybrid and High Yielding Seeds**

<table>
<thead>
<tr>
<th>Type of seeds</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>High yielding</td>
<td>06</td>
</tr>
<tr>
<td>Hybrid</td>
<td>12</td>
</tr>
<tr>
<td>Both varieties</td>
<td>82</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

Source-Field Survey

**Ownership Of The Seed Farm**

It is significant to note that 88 of the 100 seed farmers owned their own land while 12 seed farmers were managing hired seed farms.
Commencement Of The Seed Farms

Maximum number of the seed producing farmers commenced their operations during 1985-1990. Very small number of them had started their seed production activities prior to that. Similarly a few of the 100 respondent farmers started their seed production after 1995. The following table provides the details.

Table NO 5.6 Commencement Of Seed Farming

<table>
<thead>
<tr>
<th>Period of commencement</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970-1975</td>
<td>05</td>
</tr>
<tr>
<td>1975-1980</td>
<td>10</td>
</tr>
<tr>
<td>1985-1990</td>
<td>38</td>
</tr>
<tr>
<td>1990-1995</td>
<td>31</td>
</tr>
<tr>
<td>1995-2000</td>
<td>11</td>
</tr>
<tr>
<td>2001-2003</td>
<td>05</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

Source-Field Survey

It is clear from the details in the above table that maximum number of the 100 respondent farmers commenced their seed production operations during the period between 1985-90 and 1990-1995. Hence 69 percent of these farmers have started their production during this period. A small number of 15 farmers commenced their production during the decade between 1970-75 and 1975-80 and an equal number of respondent farmers commenced their operation during the period 1995-2000 and 2001-2003.
Initiation Into Seed Farming

It is acknowledged by all the 100 respondent seed farmers that their respective seeds companies were mainly responsible for their initiation into the seed farming. However individual own decision was also responsible for their entry into the field of seed farming. A good number of 30 respondent seed farmers contended that the advice and influence of their neighbours was also responsible for their initiation into seed farming according to 20 and 4 seed farmers respectively. The following table provides the details

Table NO 5.7 Initiation Into Seeds Farming

<table>
<thead>
<tr>
<th>Persons Responsible</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Own decision</td>
<td>12</td>
</tr>
<tr>
<td>2 Seeds company</td>
<td>100</td>
</tr>
<tr>
<td>3 Neighbours</td>
<td>32</td>
</tr>
<tr>
<td>4 Friends</td>
<td>20</td>
</tr>
<tr>
<td>5 Relatives</td>
<td>04</td>
</tr>
</tbody>
</table>

Source-Field Survey

Factors Influencing the Initiating of Seed Farming

Assured market and better price for the hybrid seeds were the compelling factors for starting the seed farming as asserted by all the 100 respondent farmers. The market is assured since the seeds companies enter into an agreement with the farmers for purchasing all their seed. Similarly price of the hybrid seeds is much better than the other seed. Hence price incentive has been another factor for inducing the seed farmers to go into the seed farming as an alternative to traditional agriculture. These and other
factors have led to the respondents to take up the production of hybrid seeds.

The responses are indicated in the following table

Table NO 5.8 Factors Leading To Adoption of Seed Farming

<table>
<thead>
<tr>
<th>Factors</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assured market</td>
<td>100</td>
</tr>
<tr>
<td>Better price</td>
<td>100</td>
</tr>
<tr>
<td>Financial help from seeds Companies</td>
<td>12</td>
</tr>
<tr>
<td>Technical help from seeds Companies</td>
<td>96</td>
</tr>
<tr>
<td>Less requirement of labour</td>
<td>12</td>
</tr>
<tr>
<td>More profit than in other crops</td>
<td>92</td>
</tr>
<tr>
<td>Small size of land but more income</td>
<td>76</td>
</tr>
<tr>
<td>Less requirement of water</td>
<td>12</td>
</tr>
</tbody>
</table>

Source-Field Survey

It is clear from the above responses that in addition to assured market and better price the seed farmers were influenced by the financial and technical help from seeds companies, high profitability and more income and less requirement of irrigation were also the factors that influenced the respondent seed farmers to go in for seeds farming.

Advantages For Starting Seeds Farming

The farmers in the study area have mentioned some advantages in their respective areas for starting seeds farming. The following table provides the details
- Assured Market
- Better Price
- Financial help from seeds Co
- Technical help from seeds Co
- Less requirement of labour
- More profit than in other crops
- Small size of land but more income
- Less requirement of water

Graph 5.8: Factors
The major advantages for seeds farming mentioned by the respondents relate to good and suitable soil, suitable climate, availability of water for irrigation, knowledge of seeds farming, availability of skilled labour at less cost, availability of finance and expert supervision of seeds companies.

**Sources Of Seeds Supply**

The seed farmers received the basic seed supply for producing hybrid seeds solely from the seed companies specializing in the particular seeds. The farmers do not obtain seeds from any other sources like government and private agencies. The seeds companies operating in the area have sponsored the seed farmers. They supply the seeds to the farmers, provide technical know and supervise the operations. The companies also provide financial assistance to the seed companies in the form of advances. The list of companies and the number of seed farmers sponsored by them is given here.
Table NO 5.10 Name Of Seed Companies And The Number Of Seed Farmers

<table>
<thead>
<tr>
<th>Name of the seeds companies</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Oriental Bio-Tech</td>
<td>03</td>
</tr>
<tr>
<td>2 Golden Seeds Co.</td>
<td>03</td>
</tr>
<tr>
<td>3 Indo-American's</td>
<td>05</td>
</tr>
<tr>
<td>4 Sungro Seeds Co.</td>
<td>03</td>
</tr>
<tr>
<td>5 Mahyco Ltd</td>
<td>08</td>
</tr>
<tr>
<td>6 E.I.D Parry Seeds Co.</td>
<td>03</td>
</tr>
<tr>
<td>7 Century Seeds Co.</td>
<td>03</td>
</tr>
<tr>
<td>8 Nath Seeds Co.</td>
<td>04</td>
</tr>
<tr>
<td>9 Namadhari Seeds Co.</td>
<td>07</td>
</tr>
<tr>
<td>10 Topica Seeds Co.</td>
<td>03</td>
</tr>
<tr>
<td>11 Pioneer Overseas Seeds Co.</td>
<td>03</td>
</tr>
<tr>
<td>12 Nanhens Seeds Co Ltd</td>
<td>02</td>
</tr>
<tr>
<td>13 Unicorn Rasu Tech Ltd Co.</td>
<td>03</td>
</tr>
<tr>
<td>14 Monasanto Seeds Co.</td>
<td>04</td>
</tr>
<tr>
<td>15 Ankur Seeds Co.</td>
<td>03</td>
</tr>
<tr>
<td>16 J.K. Seeds Co.</td>
<td>03</td>
</tr>
<tr>
<td>17 SPIC-pioneer Seeds Co.</td>
<td>01</td>
</tr>
<tr>
<td>18 Casmo plantisum Seeds Co.</td>
<td>02</td>
</tr>
<tr>
<td>19 Cargil Seeds Co.</td>
<td>06</td>
</tr>
<tr>
<td>20 Bijo-Sheetal Seeds Co.</td>
<td>01</td>
</tr>
<tr>
<td>21 Sun Seeds Co.</td>
<td>01</td>
</tr>
<tr>
<td>22 Agsun Seeds Co.</td>
<td>03</td>
</tr>
<tr>
<td>23 Kentch Seeds Co.</td>
<td>01</td>
</tr>
<tr>
<td>24 Dhaman Seeds Co.</td>
<td>01</td>
</tr>
<tr>
<td>25 National Seeds Corporation</td>
<td>01</td>
</tr>
<tr>
<td>26 Paras Seeds Co.</td>
<td>01</td>
</tr>
<tr>
<td>27 Karnataka State Seeds Co.</td>
<td>03</td>
</tr>
<tr>
<td>28 E.C.L pierce Seeds</td>
<td>01</td>
</tr>
<tr>
<td>29 Synganta Seeds Co.</td>
<td>08</td>
</tr>
<tr>
<td>30 Zuari Seeds Co.</td>
<td>01</td>
</tr>
<tr>
<td>31 Kanchan Seeds Co.</td>
<td>02</td>
</tr>
<tr>
<td>32 Exim Seeds Co.</td>
<td>02</td>
</tr>
<tr>
<td>33 Ceeky Seeds Co.</td>
<td>01</td>
</tr>
<tr>
<td>34 Pro-agro Seeds Co.</td>
<td>01</td>
</tr>
<tr>
<td>35 Semanis Seeds Co.</td>
<td>02</td>
</tr>
<tr>
<td>36 Sultan Seeds Co.</td>
<td>01</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source-Field Survey
Financial Assistance From Seeds Company

The seeds companies have been providing financial assistance to seed farmers for different purposes. The following table provides the details.

Table NO 5.11 Financial Assistance By Seeds Company

<table>
<thead>
<tr>
<th>Purpose</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase of seeds</td>
<td>22</td>
</tr>
<tr>
<td>Purchase of fertilizers</td>
<td>20</td>
</tr>
<tr>
<td>Purchase of pesticides</td>
<td>20</td>
</tr>
<tr>
<td>To meet cost of irrigation</td>
<td>01</td>
</tr>
<tr>
<td>To meet transport cost</td>
<td>02</td>
</tr>
<tr>
<td>To meet grading cost</td>
<td>01</td>
</tr>
<tr>
<td>Others</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>85</strong></td>
</tr>
</tbody>
</table>

Source-Field Survey

A total number of 85 of the 100 respondent seed farmers have affirmed the receiving of financial assistance for the various purposes indicated in the above table. The rest of the 15 seed farmers have not received any financial assistance for any of the above purposes. It is significant to note that the confirmation of receiving financial assistance in individual directions like purchase of seeds, fertilizers or pesticides has been made by a few of the total number of 100 seed farmers. The financial assistance for meeting cost of irrigation, grading has been affirmed by a single respondent while only 2 respondents have asserted to have received financial assistance for meeting transport cost.
Finances For Production Of Seeds

Majority of the seed farmers use their own funds for meeting the cost of production operations. A good number of them borrow money from banks, finance companies and even from money lenders. The sources of their finances are indicated in the following table.

Table NO 5.12  Sources Of Finances Of Seed Producers

<table>
<thead>
<tr>
<th>Source</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own funds</td>
<td>88</td>
</tr>
<tr>
<td>Borrowing from banks</td>
<td>48</td>
</tr>
<tr>
<td>&quot; finance cos</td>
<td>22</td>
</tr>
<tr>
<td>&quot; money lenders</td>
<td>32</td>
</tr>
<tr>
<td>&quot; friends/relatives</td>
<td>13</td>
</tr>
<tr>
<td>Others</td>
<td>11</td>
</tr>
</tbody>
</table>

Source-Field Survey

It is clear from the details in the above table that maximum number of seed farmers use their own funds. A large number of them resort to bank borrowing while a few other borrow from money lenders, friends and relatives.

The volume of financial resources used from different sources:

1) The seed farmers have used their own funds ranging between Rs.10,000 to Rs.50,000 and above. The data collected from the respondent seed farmers indicated that maximum number of 48 seed farmers have used their own funds to a tune of Rs.30,000 to Rs.40,000 while a minimum of 2 seed farmers used their own funds to a tune of Rs.10,000 to Rs.20000. A small number of 6 respondents used their own funds to a tune of Rs.50,000 and above.
2) A good number of 40 respondent seed farmers borrowed a maximum amount of Rs.20,000 to Rs.30,000 for their seed production activities from the banks. A small number of them borrowed more than Rs.30,000 from banks.

3) Borrowing from finance companies was resorted to by a maximum of 32 seed farmers in the range of Rs.5000 to Rs.10000. A very small number of 6 seed farmers borrowed more than Rs.20,000 from finance companies for their production operations.

4) Some seed farmers have resorted to borrowing from private money lenders at high interest cost. The borrowing from this source ranged from Rs.5000 to Rs.20000 and above.

Training in Seed Farming

Seed farming is a specialized agricultural operation. A proper training in the process of hybridization would help in improving the farm efficiency. Hence the responses of respondent seed farmers were obtained about the training aspect of their operation. The responses suggest that a high percentage of seed farmers had undergone training in their farm operations. The following table provides the details.

Table NO 5.13 Training in Seeds Farming

<table>
<thead>
<tr>
<th>Response</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>82</td>
</tr>
<tr>
<td>No</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

Source-Field Survey
The above table reveals that 82 percent of the respondent had affirmed that they had undergone training in seeds farming. Further details indicate that a maximum of 48 seed farmers had 2-3 of their family members trained in seed farming while more than 5 family members had undergone training in case of 2 seed farmers. The following table provides the details

**Table NO 5.14 Training Of Family Members In Seed Farming**

<table>
<thead>
<tr>
<th>No of family members trained</th>
<th>Number of Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>21</td>
</tr>
<tr>
<td>2-3</td>
<td>48</td>
</tr>
<tr>
<td>4-5</td>
<td>11</td>
</tr>
<tr>
<td>5 and above</td>
<td>02</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
</tr>
</tbody>
</table>

Source: Field Survey

The details in the above table indicates that majority of the respondent seed farmers had got their family members trained in the seed farming techniques.

**Duration Of Training**

The responses of the respondent seed farmers indicate that maximum duration of training seed farming was 2-3 months and minimum duration was a 6 are days. The following table provides the details

**Table NO 5.15 Duration of training**

<table>
<thead>
<tr>
<th>Duration</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-8 days</td>
<td>11</td>
</tr>
<tr>
<td>9-15 ,,</td>
<td>22</td>
</tr>
<tr>
<td>15-30 ,,</td>
<td>43</td>
</tr>
<tr>
<td>30-60 ,,</td>
<td>04</td>
</tr>
<tr>
<td>60-90 ,,</td>
<td>02</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
</tr>
</tbody>
</table>

Source – Field Survey
The details in the above table indicate that members of families of only 6 seed farmers had undergone intensive training in seed farming for a period of more than one month.

**Course Content Of Training In Seed Farming**

The courses on which training in seed farming was organized covered major areas of production and some aspects of marketing.

The following table provides the details.

**Table NO 5.16 Courses Covered By Training In Seed Farming**

<table>
<thead>
<tr>
<th>Courses</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tilling</td>
<td>32</td>
</tr>
<tr>
<td>Sowing</td>
<td>64</td>
</tr>
<tr>
<td>Maintenance</td>
<td>88</td>
</tr>
<tr>
<td>Watering</td>
<td>31</td>
</tr>
<tr>
<td>Crossing</td>
<td>98</td>
</tr>
<tr>
<td>Harvesting</td>
<td>41</td>
</tr>
<tr>
<td>Processing</td>
<td>21</td>
</tr>
<tr>
<td>Packing</td>
<td>16</td>
</tr>
</tbody>
</table>

Source: Field Survey

Maximum of 98 respondent seed farmers have mentioned crossing for hybrid seeds followed by 88 farmers mentioning maintenance of seed crops, 64 sowing, 41 harvesting, 32 tilling, 31 watering and 21 farmers mentioned processing while 16 of them mentioned training in packing.

The seed company bears the training cost as asserted by the respondent seed farmers. The positive benefit of the training in seed farming has been asserted by 80 respondents while 2 others did not confirm the positive benefits of training in seed farming.
**Benefits Of Training In Seed Farming**

Many benefits of training in seed farming have been mentioned by the farmers who had undergone the training or had their family members trained in the same. The benefits of training in seed farming have been mentioned in the following table.

**Table NO 5.17 Benefits Of Training In Seed Farming**

<table>
<thead>
<tr>
<th>Response</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better management of resources</td>
<td>92 percent</td>
</tr>
<tr>
<td>Better farming methods</td>
<td>96 percent</td>
</tr>
<tr>
<td>Avoiding of wastes of seeds</td>
<td>80 percent</td>
</tr>
<tr>
<td>Economy in labour requirement</td>
<td>81 percent</td>
</tr>
<tr>
<td>Better yield</td>
<td>98 percent</td>
</tr>
<tr>
<td>Lower cost of farming</td>
<td>78 percent</td>
</tr>
<tr>
<td>Better quality of product</td>
<td>91 percent</td>
</tr>
</tbody>
</table>

Source: Field Survey

The details in the above table reveal significant revelations about the benefits of training in seed farming. Better yield due to trained approach to farming asserted by 98 percent of respondents while better farming methods are adopted due to training as asserted by 96 percent of respondents. The benefits of better management of resources due to training in seed farming is asserted by 92 percent of respondents and economy in labour requirement is attributed due to training by 81 percent of respondents. Better quality of product (91 percent), avoiding of wastes of seeds (80 percent) and low labour cost (78 percent) have been the benefits of training as asserted by the respondent seed farmers.
Training Of Workers

It is significant to note that 76 percent of the respondent farmers have got their hired workers trained while 24 percent have not done so. Further 12 seed farmers got 1-2 of their workers trained in seed farming while 48 seed farmers got 3-4 of their workers trained. A small number of 16 respondent seed farmers got 5-6 of their workers trained in seed farming.

It is gathered through the personal interviews that 12 seed farmers had got their workers trained for a period of 5-10 days, 78 seed farmers got their workers trained for 10-30 days and 10 seed farmers got their workers trained for 3 days and above.

Technical Assistance From Seed Companies

It is very significant to note that all the 100 seed farmers covered by the study obtained technical assistance from the seed companies in their hybrid seed production operations.

The seed companies have arranged for the visits of the seed farms by their technical personnel and help the farmers in their operations. Two technical persons have visited the seed farms owned by 76 seed farmers. In other cases 3, 4 and 5 technical persons visited the seed farms according to 8, 4 and 2 seed farmers respectively. Only one technical person visited the seed farms of 10 farmers.

The cost of technical assistance is borne by the seed companies themselves and no cost burden is borne by the seed farmers.
The areas of technical assistance provided by the seed companies is detailed in the following table

**Table NO 5.18 Areas Of Technical Assistance**

<table>
<thead>
<tr>
<th>Area</th>
<th>Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sowing</td>
<td>76 percent</td>
</tr>
<tr>
<td>Tilling</td>
<td>68 ,,</td>
</tr>
<tr>
<td>Cropping</td>
<td>89 ,,</td>
</tr>
<tr>
<td>Crop cutting</td>
<td>85 ,,</td>
</tr>
<tr>
<td>Harvesting</td>
<td>90 ,,</td>
</tr>
<tr>
<td>Manuring</td>
<td>62 ,,</td>
</tr>
<tr>
<td>Use of pesticides</td>
<td>91 ,,</td>
</tr>
<tr>
<td>Storing</td>
<td>81 ,,</td>
</tr>
<tr>
<td>Crossing</td>
<td>98 ,,</td>
</tr>
<tr>
<td>Processing</td>
<td>76 ,,</td>
</tr>
<tr>
<td>Others</td>
<td>62 ,,</td>
</tr>
</tbody>
</table>

Source – Field Survey

The responses in the above table indicate that all the important areas of hybrid seed production have been promoted by technical assistance provided by the seed companies sponsoring the seed farms in the study area. Maximum number of respondents have affirmed the help of technical assistance in the areas of crossing of seed plants followed by assistance in the areas of use of pesticides, harvesting, cropping and crop cutting. The seed farmers have commended all other areas of technical assistance given by the seed companies to the above areas of hybrid seed production.

**Crop Wise Production Trends**

The selected seed farmers in the study area are engaged in the production of hybrid seeds of cotton, tomato, brinjal, okra and sunflower. It is
further gathered from the seed farmers that some of them produce single seed while others are engaged in the production of more than one hybrid seeds.

**Area Under Cotton Hybrid Seeds**

The area under cotton hybrid seeds cultivation has ranged from $\frac{1}{2}$ - 1 acres to 2-4 acres. A total of 31 seed farmers have been engaged in the production of hybrid cotton seed production. The following table provides the details.

**Table NO 5.19 Area Under Cotton Hybrid Seeds**

<table>
<thead>
<tr>
<th>Area in acres</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2 to 1 acre</td>
<td>24</td>
</tr>
<tr>
<td>2 to 4 acre</td>
<td>07</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
</tr>
</tbody>
</table>

Source- Field Survey

The details in the above table indicate that majority of 24 seed farmers cultivated $\frac{1}{2}$ to 1 acre of land for growing hybrid cottonseeds. A small number of 7 respondent seed farmers cultivated 2-4 acres of their land for growing hybrid cotton seed.

**Production of Tomato Hybrid Seeds**

The production of tomato hybrid seed has been a major seed farming activity in the study area. The following table provides the details of the area under production of hybrid tomato seeds.

**Table NO 5.20 Area Under Hybrid Tomato Seeds**

<table>
<thead>
<tr>
<th>Area(in acres)</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2 to 1 acre</td>
<td>75</td>
</tr>
<tr>
<td>2 to 4 acres</td>
<td>09</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
</tr>
</tbody>
</table>

Source- Field Survey
Maximum number of 75 seed farmers had been engaged in cultivating ½ to 1 acre of land for the production of hybrid variety of tomato seed in the study area. A small number of 9 seed farmers were cultivating 2 to 4 acres of land for producing hybrid tomato seeds. The production of tomato seeds through open pollination method has also been done by 23 seed farmers. The details are provided in the following table.

**Table No 5.21 Area Under Tomato Seeds (Open Pollination)**

<table>
<thead>
<tr>
<th>Area in acres</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>½ to 1 acre</td>
<td>20</td>
</tr>
<tr>
<td>2 to 4 acre</td>
<td>03</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
</tr>
</tbody>
</table>

Source – Field Survey

The number of seed farmers producing tomato seeds with open pollination method is small.

**Area Under Production Of Hybrid Brinjal Seeds**

The following table provides the details of the area under the production of hybrid and open pollination seeds of brinjal in the study area.

**Table NO 5.22 Area Under Hybrid And O.P. Brinjal Seeds Production**

<table>
<thead>
<tr>
<th>Area in acres</th>
<th>Hybrid seed No of farmers</th>
<th>Open pollination No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>½ to 1 acres</td>
<td>39</td>
<td>05</td>
</tr>
<tr>
<td>2 to 4 acres</td>
<td>09</td>
<td>02</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
<td>07</td>
</tr>
</tbody>
</table>

Source – Field Survey
It is clear from the details in the above table that 39 seed farmers were engaged in cultivating hybrid seeds on \( \frac{1}{2} \) to 1 acres of land while only 5 seed farmers were engaged in cultivating open pollination of brinjal seed production. Further 9 seed farmers were engaged in producing hybrid seeds of brinjal in 2 to 4 acres of land. However there were only 2 seed farmers engaged in producing brinjal seeds through open pollination method.

**Area Under Hybrid And O.P. Okra Seeds Production**

Okra seeds are produced by both hybrid and O.P. methods in the study. The following table provides the details.

<table>
<thead>
<tr>
<th>Area in acres</th>
<th>Hybrid seed No of farmers</th>
<th>Open pollination No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A to 1 acre</td>
<td>37</td>
<td>30</td>
</tr>
<tr>
<td>2 to 4 acres</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>47</td>
</tr>
</tbody>
</table>

Source – Field Survey

Hybrid seeds production of okra is carried on by a large number of seed farmers compared to the number of seed farmers engaged in the production of OP seeds. The area under hybrid seed production as well as OP seeds is of small size of \( \frac{1}{2} \) to 1 acre.

**Area Under Sunflower Seeds Production**

A total number of 75 seed farmers have been engaged in the production of hybrid sunflower seeds in different sizes of land in the study area. The following table provides the details.
Table NO 5.24 Area And No Of Farmers In The Production Of Hybrid Sunflower Seeds

<table>
<thead>
<tr>
<th>Area in acres</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2 to 1 acre</td>
<td>32</td>
</tr>
<tr>
<td>2 to 4 acres</td>
<td>37</td>
</tr>
<tr>
<td>5 and above acres</td>
<td>06</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>75</strong></td>
</tr>
</tbody>
</table>

Source – Field Survey

The number of farmers engaged in the production of hybrid sunflower seeds is more in the 2-4 acres size of land compared to the number of seed farmers producing hybrid sunflower seeds on ½ to 1 acre size of land in the study area.

Production Trends Of Hybrid And High Yielding Varieties Of Seeds

The trends in the production of seeds indicate a continuous rise during the first four years from 1998-99 to 2001-02 with a small decline in the fifth year 2002-2003. The following table provide the details.

Table NO 5.25 Production Of Hybrid Of Cotton Seeds

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quantity</strong></td>
<td>6970</td>
<td>6740</td>
<td>8495</td>
<td>8920</td>
<td>8820</td>
</tr>
<tr>
<td><strong>Acres</strong></td>
<td>36</td>
<td>35</td>
<td>44</td>
<td>45</td>
<td>47</td>
</tr>
<tr>
<td><strong>No of farmers</strong></td>
<td>34</td>
<td>34</td>
<td>36</td>
<td>37</td>
<td>37</td>
</tr>
</tbody>
</table>

Source – Field Survey

It is clear from the details in the above table that with a small decline from 1998-99 there has been a continuous rise in the production of hybrid cotton seed upto 2001-02 and again with a small decline in 2002-03. The total average under hybrid cotton seed has gone up from 36 acres to 47 acres during the 5 years and
the number of farmers cultivating the hybrid cotton seed in the area covered by
the study has gone up from 34 to 37.

Production Of Hybrid Tomato Seed

There is a continuous rise in the production of hybrid tomato seed in the
study area from 1998-99 to 2001-2002. The following table provides the details

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity in kgs</td>
<td>4025</td>
<td>4349</td>
<td>5259</td>
<td>5328</td>
<td>5242</td>
</tr>
<tr>
<td>Acres</td>
<td>90</td>
<td>99</td>
<td>117</td>
<td>119</td>
<td>116</td>
</tr>
<tr>
<td>No of farmers</td>
<td>69</td>
<td>70</td>
<td>74</td>
<td>76</td>
<td>74</td>
</tr>
</tbody>
</table>

Source-Field Survey

The details in the above table indicate an increase in total acreage of the

Production Of Hybrid Seeds Of Brinjal

The total production has gone up from 4710 kgs in 1998-99 to 4936 kgs
in 2002-03. The total acres under the seed crop has remained almost stable at
52 acres while the number of farmers rose marginally from 31 in 1998-99 to 34 in
2002-2003. The details are provided in the following table

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity in Kgs</td>
<td>4710</td>
<td>4768</td>
<td>4828</td>
<td>4936</td>
<td></td>
</tr>
<tr>
<td>Total acres</td>
<td>52</td>
<td>52</td>
<td>53</td>
<td>51</td>
<td>52</td>
</tr>
<tr>
<td>No of farmers</td>
<td>31</td>
<td>32</td>
<td>32</td>
<td>33</td>
<td>34</td>
</tr>
</tbody>
</table>

Source- Field Survey
Production Of Hybrid Seeds Of Okra

The total production of hybrid Seeds of the respondent seed farmers has gone up continuously during the first four years. There is an increase in total acreage under okra seeds and the number of farmers too has gone up. The following table provides the details.

Table NO 5.28 Production Of Hybrid Okra Seed

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity in Kgs</td>
<td>10150</td>
<td>10277</td>
<td>10477</td>
<td>12215</td>
<td>11885</td>
</tr>
<tr>
<td>Total acres</td>
<td>55</td>
<td>55</td>
<td>56</td>
<td>62</td>
<td>63</td>
</tr>
<tr>
<td>No of farmers</td>
<td>40</td>
<td>41</td>
<td>43</td>
<td>43</td>
<td>43</td>
</tr>
</tbody>
</table>

Source-Field Survey

The production has gone up during the first four years but declined during the fifth year. The total acres of growing seed of the respondents has gone up from 55 to 63 during the five years. Number of farmers rose from 40 in 1998-99 to 43 in 2002-2003.

Production Of Hybrid Seeds Of Sunflower

The area under hybrid sunflower seeds rose from 85 acres in 1998-99 to 113 acres in 2002-2003, while total quantity of production rose from 40812 kgs to 56540 kgs during the same period. The number of farmers growing the seed rose from 65 to 70 covered by the study. The following table provides the details.

Table NO 5.29 Production Of Hybrid Sunflower Seeds

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Quantity in Kgs</td>
<td>40812</td>
<td>41934</td>
<td>42760</td>
<td>59076</td>
<td>56540</td>
</tr>
<tr>
<td>Total acres</td>
<td>85</td>
<td>87</td>
<td>88</td>
<td>114</td>
<td>113</td>
</tr>
<tr>
<td>Total No of farmers</td>
<td>65</td>
<td>68</td>
<td>70</td>
<td>72</td>
<td>70</td>
</tr>
</tbody>
</table>

Source-Field Survey
The change in the number of farmers growing the seeds and the total area under the crop has been due to the fact that the farmers change their cropping area from year to year. Hence the number of respondents selected for study show a change from year to year.

Production Of High Yielding Variety Of Seeds Under Open Pollination Method

Tomato, Brinjal, and Okra seeds are produced in the study area both under hybrid and under high yield variety (open pollination) methods. The open pollination method production of seeds by the respondent seed farmers indicate that there is an increase in the production of seeds, area under the seed production and the number of seed farmers producing the seeds.

Production Of Tomato Seeds (Open Pollination)

The production of tomato seeds through open pollination rose from 3933 kgs in 1998-99 to 4850 kgs in 2002-2003. The total area of the respondent farmers producing the seeds rose from 39 acres to 47 acres during the same period. The following table provides the details

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity in Kgs</td>
<td>3923</td>
<td>4016</td>
<td>3833</td>
<td>5065</td>
<td>4850</td>
</tr>
<tr>
<td>Acres</td>
<td>39</td>
<td>40</td>
<td>38</td>
<td>48</td>
<td>47</td>
</tr>
<tr>
<td>No of farmers</td>
<td>23</td>
<td>22</td>
<td>24</td>
<td>25</td>
<td>25</td>
</tr>
</tbody>
</table>

Source- Field Survey
The number of farmers covered by the study producing open pollination variety of tomato seeds varied between 22 and 25. The acreage of land under the seed crop varied between 38 and 48 acres.

Production Of Brinjal Seed (Open Pollination)

The total quantity of seed, the total acreage of land under the seed crop and the total number of seed farmers have varied during the five years period from 1998-99 to 2002-2003. The following table provides the details.

Table NO 5.31 Production Of Brinjal Seed (Open Pollinated)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity in Kgs</td>
<td>1820</td>
<td>1860</td>
<td>2110</td>
<td>2286</td>
<td>2560</td>
</tr>
<tr>
<td>Acres</td>
<td>18</td>
<td>18</td>
<td>20</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>No of farmers</td>
<td>.13</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

Source –Field Survey

The total quantity of seeds produced by the respondent farmers varied from 1820 kgs in 1998-99 to 2560 kgs in 2002-2003. Total area under the seed crop varied between 18 acres and 25 acres. The total numbers of farmers covered by the study varied between 13 and 25.

Production Of Okra Seed (Open Pollination)

Total quantity of production of okra seed of this variety rose from 13580 kgs in 1998-99 to 16760 kgs in 2002-2003. The other details of the seed production are provided in the following table.

Table NO 5.32 Production Of Okra Seed (Open Pollination)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Quantity of production</td>
<td>1350</td>
<td>13700</td>
<td>13510</td>
<td>14436</td>
<td>16760</td>
</tr>
<tr>
<td>Acres</td>
<td>54</td>
<td>54</td>
<td>53</td>
<td>55</td>
<td>66</td>
</tr>
<tr>
<td>No of farmers</td>
<td>40</td>
<td>42</td>
<td>41</td>
<td>44</td>
<td>48</td>
</tr>
</tbody>
</table>

Source –Field Survey
The area under okra seed crop varied from 54 acres to 66 acres during the five year period and the number of farmers varied between 40 and 48 during the same period.

**Productivity Of Seed Production Under Hybrid/HYV Methods**

The productivity of producing hybrid and high yielding varieties of seed farmers covered by the study in the study area show some significance trends. The productivity or yield per acre is calculated by taking into account the total quantity of seed produced per year and the total area used for producing the actual quantity of seeds during the same year. The date was obtained from the primary sources about the quantity produced and the acreage of land used for the same purpose. The details of the productivity/yield per acre are provided in the following table:

**Table NO 5.33 Yield Per Acre (Productivity) Of Hybrid Seeds**

<table>
<thead>
<tr>
<th>Year</th>
<th>Hybrid seed (in kgs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cotton</td>
</tr>
<tr>
<td>1998-99</td>
<td>192.07</td>
</tr>
<tr>
<td>1999-00</td>
<td>192.57</td>
</tr>
<tr>
<td>2000-01</td>
<td>193.06</td>
</tr>
<tr>
<td>2001-02</td>
<td>198.22</td>
</tr>
<tr>
<td>2002-03</td>
<td>187.65</td>
</tr>
</tbody>
</table>

Source -Field Survey

The details in the above table provide some significant trends about the yield per acre of the hybrid seeds produced by the respondent seed farmers in the study area.
The yield per acre of hybrid cotton seeds has increased continuously at a sustained rate during the first four years from 1998-99 to 2001-02. A decline in the fifth year is noticed. This trend is observed with regard to all the five hybrid seeds covered by the study.

The increase in the yield per acre is particularly more pronounced in the year 2001-02 for all the five seed compared to the previous years.

The yield per acre (productivity) of the seeds of high yielding variety (open pollination) indicates some significant trends during the five year period from 1998-99 to 2002-03. The following table provides the details.

Table NO 5.34 Yield Per Acre (Productivity) Of Seeds Of HYV (Open Pollination)

<table>
<thead>
<tr>
<th>Year</th>
<th>Open pollination seed(in kgs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tomato</td>
</tr>
<tr>
<td>1998-99</td>
<td>100.84</td>
</tr>
<tr>
<td>1999-00</td>
<td>100.04</td>
</tr>
<tr>
<td>2000-01</td>
<td>100.86</td>
</tr>
<tr>
<td>2001-02</td>
<td>105.52</td>
</tr>
<tr>
<td>2002-03</td>
<td>103.19</td>
</tr>
</tbody>
</table>

The yield per acre of HY variety of seed (open pollination) of tomato has fluctuated between 1998-99 and 2000-01. It has reached the maximum in 2001-2002 and declined in 2003.

There is a continuous increase in the yield per acre of seed of HY variety (open pollination) of brinjal from 1998-99 to 2001-02 and decline in the fifth year in 2002-2003. The maximum rise in yield per acre was again in 2001-02.
The yield per acre of HY variety (open pollination) of okra seed has also indicated a continuous rise during the first four years and a decline in the fifth year in 2002-03.

**Cost Of Production Of Hybrid Seeds**

The cost of production of the hybrid and open pollination seeds of cotton, tomato, brinjal, okra and sunflower has been worked out on the basis of the labour, material and overhead costs involved for the production of the seeds on a standard one acre of land. A detailed list of the various items of cost have been provided in the adjoining table. The current wage rates for labour and material prices have been taken into account while calculating the cost. A summary of the cost of production of each type seed per kg on a standard one acre of land has been provided here.

**Average Cost Of Production Of Hybrid Cotton Seed**

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of the land for cultivation</td>
<td>1 Acre</td>
</tr>
<tr>
<td>Duration of crop</td>
<td>5 months</td>
</tr>
<tr>
<td>Labour Input</td>
<td></td>
</tr>
<tr>
<td>Total number of male labours employed</td>
<td>50</td>
</tr>
<tr>
<td>&quot;&quot;, female</td>
<td>241</td>
</tr>
<tr>
<td>Wage rate per day for male labourers</td>
<td>Rs 50 per day</td>
</tr>
<tr>
<td>&quot;&quot;, female</td>
<td>Rs 40 per day</td>
</tr>
<tr>
<td>Total cost of male labour</td>
<td>Rs 2550=00</td>
</tr>
<tr>
<td>&quot;&quot;, female</td>
<td>Rs 9640=00</td>
</tr>
<tr>
<td>Total labour cost for 1 acre of land for cultivation of cotton seed</td>
<td>Rs 12190=00</td>
</tr>
<tr>
<td>Total cost of material input and overhead</td>
<td>Rs 6160=00</td>
</tr>
<tr>
<td>Total cost of production</td>
<td>Rs 18350=00</td>
</tr>
<tr>
<td>Average production of cotton seed on 1 acre of land</td>
<td>250 kgs</td>
</tr>
<tr>
<td>Average cost of production per kg of cotton seed</td>
<td>Rs 91.75</td>
</tr>
</tbody>
</table>
Table NO 5.35 Cost of production

Name of Crop: Cotton (Hyb) Size of land: 1 Acre Duration: Jun- October

Labour Cost(in Rs) Male: Rs. 50 Female: Rs. 40 Own Land Yes Hired No

<table>
<thead>
<tr>
<th>Production Stages</th>
<th>Nos. of Labours</th>
<th>Male Value in Rs.</th>
<th>Female Value in Rs.</th>
<th>Total Value in Rs.</th>
<th>Value in Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>A Necessaries</td>
<td>Equipments</td>
</tr>
<tr>
<td>1. Land revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Plowing</td>
<td>8</td>
<td>8</td>
<td>16</td>
<td>400 Tractor, Agri. Equipments</td>
<td>800</td>
</tr>
<tr>
<td>3. Irrigation</td>
<td>10</td>
<td>10</td>
<td>20</td>
<td>500 Tube well K.P.T.C.L. Charges</td>
<td>500</td>
</tr>
<tr>
<td>4. Cart Load</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>200 Load Cattledung</td>
<td>600</td>
</tr>
<tr>
<td>5. Seed Cast</td>
<td></td>
<td></td>
<td></td>
<td>Male 05 gram</td>
<td>Female 25 gram</td>
</tr>
<tr>
<td>6. Sowing</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>7. Transplanting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Fertilizer</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>280 Name</td>
<td>Qnty</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D.A.P.</td>
<td>1 Qnt</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Potash</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Vijay</td>
<td></td>
</tr>
<tr>
<td>9. Pest Control</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>300 Name</td>
<td>Qnty</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Navakaran</td>
<td>1 Ltr</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Metasid</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Neema</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Starthin</td>
<td></td>
</tr>
<tr>
<td>10. Crossing</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>8100 Rings, Scissors, Tag, Pin, Pocket etc</td>
<td>100</td>
</tr>
<tr>
<td>11. Cleaning</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>180 Some Equipments</td>
<td></td>
</tr>
<tr>
<td>12. Picking</td>
<td>20</td>
<td>20</td>
<td>40</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>13. Harvesting</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>14. Processing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>130 Processing charges</td>
<td>300</td>
</tr>
<tr>
<td>15. Grading</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>130 Charging</td>
<td></td>
</tr>
<tr>
<td>16. Storing</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>50 Charging</td>
<td></td>
</tr>
<tr>
<td>17. Packing</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>50 Plastic bag, etc.</td>
<td>100</td>
</tr>
<tr>
<td>18. Transport</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>50 By Tempo, etc</td>
<td>50</td>
</tr>
<tr>
<td>19. Supervision</td>
<td>10</td>
<td>10</td>
<td>20</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>20. Others</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>241</td>
<td>292</td>
<td>2550</td>
<td>9640</td>
</tr>
</tbody>
</table>

Source-Field survey
Average Cost of Production of Hybrid Tomato Seed

Size of the land for cultivation : 1 Acre
Duration of crop : 3 months

Labour Input
Total number of male labours used : 76
,, ,, female ,, ,, : 192
Wage rate per day for male labour : Rs 50=00
,, ,, ,, female ,, ,, : Rs 40=00
Total labour cost of male labour : Rs 3800=00
,, ,, ,, female ,, ,, : Rs 7880=00
Total labour cost for 1 acre of land for cultivation of cotton seed : Rs 11680=00
Total cost of material input and overhead : Rs 7900=00
Total cost of production : Rs 19580=00
Total production of seed per acre : 50 kgs
Average cost of seed per kg of seed : Rs 391.6

The details of labour and material input for the cultivation of hybrid tomato on one acre of land and the rate of labour wages and individual cost of each type of input and labour have been provided in the adjoining table.
# Table NO 5.36 Cost of production

Name of Crop: Tomato (Hybrid)  Size of land: 1 Acre  Duration: Nov to January

Labour Cost (in Rs) Male: Rs. 50  Female: Rs. 40  Own Land: Yes  Hired: No

<table>
<thead>
<tr>
<th>Stages</th>
<th>Nos. of Labours</th>
<th>A</th>
<th>Necessaries Equipments</th>
<th>Value in Rs.</th>
<th>B</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Land revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>2. Plowing</td>
<td>10</td>
<td>10</td>
<td>500</td>
<td>Tractor, Agri. Equipments</td>
<td>1100</td>
<td>1600</td>
</tr>
<tr>
<td>3. Irrigation</td>
<td>10</td>
<td>10</td>
<td>500</td>
<td>Tube well K.P.T.C.L. Charges</td>
<td>500</td>
<td>1000</td>
</tr>
<tr>
<td>4. Cart Load</td>
<td>4</td>
<td>4</td>
<td>200</td>
<td>87 Load Cattledung</td>
<td>700</td>
<td>900</td>
</tr>
<tr>
<td>5. Seed Cast</td>
<td></td>
<td></td>
<td></td>
<td>Male 5 Gram Female 30 Gram</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>6. Sowing</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>Some equipments</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>7. Transplanting</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>Some equipments</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>8. Fertilizer</td>
<td></td>
<td></td>
<td></td>
<td>Name</td>
<td>Qnty</td>
<td>Value</td>
</tr>
<tr>
<td>D.A.P.</td>
<td></td>
<td></td>
<td></td>
<td>1 Qnt</td>
<td>960</td>
<td>2620</td>
</tr>
<tr>
<td>Potash</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>440</td>
<td></td>
</tr>
<tr>
<td>17-17-17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>920</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>9. Pest Control</td>
<td>6</td>
<td>6</td>
<td>300</td>
<td>Name</td>
<td>Qnty</td>
<td>Value</td>
</tr>
<tr>
<td>Monokroto</td>
<td></td>
<td></td>
<td></td>
<td>1/2 Kg</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Speark</td>
<td></td>
<td></td>
<td></td>
<td>1 Kg</td>
<td>260</td>
<td></td>
</tr>
<tr>
<td>Neema</td>
<td></td>
<td></td>
<td></td>
<td>1 Kg</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Tonic</td>
<td></td>
<td></td>
<td></td>
<td>1 Kg</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>10. Crossing</td>
<td>25</td>
<td>160</td>
<td>185</td>
<td>Rings, Scissors, Pin, Tag, Paper, Cloth, Powder etc</td>
<td>350</td>
<td>8000</td>
</tr>
<tr>
<td>11. Cleaning</td>
<td>2</td>
<td>12</td>
<td>14</td>
<td>Some Equipments</td>
<td>100</td>
<td>680</td>
</tr>
<tr>
<td>12. Picking</td>
<td>2</td>
<td>6</td>
<td>8</td>
<td></td>
<td>50</td>
<td>390</td>
</tr>
<tr>
<td>13. Harvesting</td>
<td>2</td>
<td>6</td>
<td>8</td>
<td></td>
<td>300</td>
<td>640</td>
</tr>
<tr>
<td>14. Processing</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td></td>
<td>200</td>
<td>410</td>
</tr>
<tr>
<td>15. Grading</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
<td>100</td>
<td>230</td>
</tr>
<tr>
<td>16. Storing</td>
<td>1</td>
<td>1</td>
<td>50</td>
<td></td>
<td>100</td>
<td>150</td>
</tr>
<tr>
<td>17. Packing</td>
<td>1</td>
<td>1</td>
<td>50</td>
<td>Plastic bag etc</td>
<td>25</td>
<td>75</td>
</tr>
<tr>
<td>18. Transport</td>
<td>1</td>
<td></td>
<td></td>
<td>Tempo etc</td>
<td>25</td>
<td>75</td>
</tr>
<tr>
<td>19. Supervision</td>
<td>8</td>
<td>8</td>
<td>400</td>
<td></td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>20. Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Total</td>
<td>76</td>
<td>197</td>
<td>273</td>
<td></td>
<td>3850</td>
<td>7880</td>
</tr>
</tbody>
</table>

Source: Field survey
Average Cost Of Production Of Hybrid Brinjal Seed

Size of the land cultivation : 1 Acre
Duration of crop : 3 months

Labour Input and cost
Total number of male labours used : 76
" " " female " " : 93
Wage rate per day for male labour : Rs 50=00
" " " " female " : Rs 40=00
Total labour cost of male labour : Rs 2300=00
" " " female " : Rs 3720=00
Total labour cost for cultivation 1 acre of land : Rs 6020=00

Total cost of materials and overhead : Rs 6475=00
Total cost of production : Rs 12495=00

Production of hybrid seed on one acre of land : 90 kg
Average cost of production per kg of hybrid brinjal seed : Rs 138.83

The details of labour input for different operations used on the seed farm and the cost of individual items have been indicated in the adjoining table. The calculations of labour cost are based on the current wage rates for both male and female labour.
Table NO 5.37 Cost of production

Name of Crop: Brinjal(Hybrid)  Size of land: 1 Acre  Duration: 4 Months

Labour Cost(in Rs) Male: Rs. 50  Female: Rs. 40  Own Land Yes  Hired No

<table>
<thead>
<tr>
<th>Productions Stages</th>
<th>Nos. of Labours</th>
<th>A</th>
<th>B</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>1. Land revenue</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>2. Plowing</td>
<td>8</td>
<td>8</td>
<td>400</td>
<td>1200 Tractor, Agri. Equipments</td>
</tr>
<tr>
<td>3. Irrigation</td>
<td>10</td>
<td>10</td>
<td>500</td>
<td>1100 Tube well K.P.T.C.L. Charges</td>
</tr>
<tr>
<td>4. Cart Load</td>
<td>4</td>
<td>4</td>
<td>200</td>
<td>800 96 Load Cattle dung</td>
</tr>
<tr>
<td>5. Seed Cast</td>
<td>2</td>
<td>2</td>
<td>300</td>
<td>300 Male 5 grms Female 35 grms</td>
</tr>
<tr>
<td>6. Sowing</td>
<td>2</td>
<td>2</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>7. Transplanting</td>
<td>7</td>
<td>7</td>
<td>290</td>
<td>290</td>
</tr>
<tr>
<td>8. Fertilizer</td>
<td>1</td>
<td>1</td>
<td>975</td>
<td>1175 D.A.P. 1 Qtl 960 Neem 150</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Pest Control</td>
<td>4</td>
<td>4</td>
<td>200</td>
<td>1175 Navakaran 1/2 Ltr 200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Crossing</td>
<td>4</td>
<td>75</td>
<td>79</td>
<td>3200 Rings, Sessions, Rubber, Paper, plate, pin, tag, etc 250 3450</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Cleaning</td>
<td>4</td>
<td>4</td>
<td>160</td>
<td>50</td>
</tr>
<tr>
<td>12. Picking</td>
<td>3</td>
<td>3</td>
<td>130</td>
<td>170</td>
</tr>
<tr>
<td>13. Harvesting</td>
<td>4</td>
<td>2</td>
<td>260</td>
<td>320</td>
</tr>
<tr>
<td>14. Processing</td>
<td>2</td>
<td>2</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>15. Grading</td>
<td>0</td>
<td>1</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>16. Storing</td>
<td>1</td>
<td>1</td>
<td>50</td>
<td>70</td>
</tr>
<tr>
<td>17. Packing</td>
<td>1</td>
<td>1</td>
<td>50</td>
<td>100  Plastic bag etc.</td>
</tr>
<tr>
<td>18. Transport</td>
<td>1</td>
<td>1</td>
<td>50</td>
<td>90   By Tempo or Tractor, etc</td>
</tr>
<tr>
<td>19. Supervision</td>
<td>5</td>
<td>5</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>93</td>
<td>139</td>
<td></td>
</tr>
</tbody>
</table>

Value in Rs. 2300 3720 6020 6475 12495

Source: Field Survey
## Average Cost Of Production Of Okra Hybrid Seed

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of the land cultivation</td>
<td>1 Acre</td>
</tr>
<tr>
<td>Duration of crop</td>
<td>4 months</td>
</tr>
<tr>
<td>Labour Input</td>
<td></td>
</tr>
<tr>
<td>Total number of male labours employed</td>
<td>40</td>
</tr>
<tr>
<td>&quot; &quot; &quot; &quot; female &quot; &quot; &quot; &quot;</td>
<td>116</td>
</tr>
<tr>
<td>Wage rate per day for male labour</td>
<td>Rs 50=00</td>
</tr>
<tr>
<td>&quot; &quot; &quot; &quot; &quot; female &quot; &quot; &quot; &quot;</td>
<td>Rs 40=00</td>
</tr>
<tr>
<td>Total labour cost of male labour</td>
<td>Rs 2000=00</td>
</tr>
<tr>
<td>&quot; &quot; &quot; &quot; &quot; female &quot; &quot; &quot; &quot;</td>
<td>Rs 4640=00</td>
</tr>
<tr>
<td>Total labour cost for 1 acre of land cultivation</td>
<td>Rs 6640=00</td>
</tr>
<tr>
<td>Total cost of material and overhead</td>
<td>Rs 5415=00</td>
</tr>
<tr>
<td>Total cost of production</td>
<td>Rs 12055=00</td>
</tr>
<tr>
<td>Total production of seed per acre</td>
<td>180 kg</td>
</tr>
<tr>
<td>Average cost of production per kg of hybrid seed</td>
<td>Rs 66.97</td>
</tr>
</tbody>
</table>

The details of labour and material inputs, wage rates of male and female labour, cost of labour, material and overhead are provided in the adjoining table.
### Table No. 5.38 Cost of production

**Name of Crop:** Okra (Hybrid)  
**Size of land:** 1 Acre  
**Duration:** Jun to Sept

**Labour Cost (in Rs):**  
- Male: 50  
- Female: 40  

<table>
<thead>
<tr>
<th>No.</th>
<th>Stages</th>
<th>Nos. of Labours</th>
<th>A Necessaries Equipments</th>
<th>B Equipments</th>
<th>Total Value in Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Land revenue</td>
<td>100</td>
<td></td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>2.</td>
<td>Plowing</td>
<td>8</td>
<td>400 Bullocks, Agri Equipments</td>
<td>500</td>
<td>900</td>
</tr>
<tr>
<td>3.</td>
<td>Irrigation</td>
<td>4</td>
<td>200 Tube well, K.P.T.C.L. Charges</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>4.</td>
<td>Cart Load</td>
<td>4</td>
<td>60 Load Cattledung</td>
<td>600</td>
<td>800</td>
</tr>
<tr>
<td>5.</td>
<td>Seed Cast</td>
<td>Male: 750 grm Female: 250 grm</td>
<td>300</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Sowing</td>
<td>1, 3, 4, 170</td>
<td>170</td>
<td></td>
<td>170</td>
</tr>
<tr>
<td>7.</td>
<td>Fertilizer</td>
<td>2</td>
<td>D.A.P. 100 Kg 1000</td>
<td>Potash 1 Bag 370</td>
<td>2370</td>
</tr>
<tr>
<td>8.</td>
<td>Pest Control</td>
<td>4</td>
<td>Name Qty Value 2270 2370</td>
<td>D.A.P. 100 Kg 1000</td>
<td>2370</td>
</tr>
<tr>
<td>9.</td>
<td>Crossing</td>
<td>5</td>
<td>Name Qty Value 650 850</td>
<td>Navakaran 1 Ltr 250</td>
<td>850</td>
</tr>
<tr>
<td>10.</td>
<td>Picking</td>
<td>2</td>
<td>Some Equipments 25 185</td>
<td>Saffur 4 Kg 150</td>
<td>850</td>
</tr>
<tr>
<td>11.</td>
<td>Harvesting</td>
<td>2</td>
<td>140</td>
<td>Neema 1 Kg 250</td>
<td>850</td>
</tr>
<tr>
<td>12.</td>
<td>Processing</td>
<td>6</td>
<td>240</td>
<td>20 100</td>
<td>100</td>
</tr>
<tr>
<td>13.</td>
<td>Grading</td>
<td>2</td>
<td>80</td>
<td>20 100</td>
<td>100</td>
</tr>
<tr>
<td>14.</td>
<td>Storing</td>
<td>2</td>
<td>100</td>
<td>20 120</td>
<td>120</td>
</tr>
<tr>
<td>15.</td>
<td>Packing</td>
<td>1</td>
<td>50</td>
<td>100 150</td>
<td>150</td>
</tr>
<tr>
<td>16.</td>
<td>Transport</td>
<td>1</td>
<td>By Tractor etc 50 100</td>
<td>100 150</td>
<td>150</td>
</tr>
</tbody>
</table>

**Total**  
- 40 116 156

**Value in Rs.**  
- 2000 4640 6640 5415 12055

Source: Field Survey
Average Cost Of Hybrid Sunflower Seeds

Size of the land cultivation : 1 Acre
Duration of crop : 4 months
Labour Input
Total number of male labours employed : 48
" " female " " : 88
Wage rate per day for male labour : Rs 50=00
" " female " " : Rs 40=00
Total labour cost of male labour : Rs 2400=00
" " female " " : Rs 3520=00
Total labour cost for 1 acre of cultivation : Rs 5920=00
Total cost of material input and overhead : Rs 4845=00
Total cost of production : Rs 10765=00
Total production of seed per acre : 500 kg
Average cost of production per kg of seed : Rs 21.53

The details of labour employed in the production operations, wage rates and cost of labour, material and overhead etc are detailed in the adjoining table. The labour cost is calculated on the basis of the prevailing wage rates and the cost of material inputs is calculated on the basis of prevailing market prices.
### Table No. 5.39 Cost of production

**Name of Crop:** Sunflower (Hybrid)  **Size of land:** 1 Acre  **Duration:** October to January

<table>
<thead>
<tr>
<th>Labour Cost (in Rs)</th>
<th>Male</th>
<th>Rs 50</th>
<th>Female</th>
<th>Rs 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own Land</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hired No</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stages</th>
<th>Nos. of Labours</th>
<th>A</th>
<th>Value in Rs.</th>
<th>B</th>
<th>Total Cost</th>
<th>A+B=C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Land revenue</td>
<td></td>
<td></td>
<td>100</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>2. Plowing</td>
<td>10</td>
<td>10</td>
<td>500</td>
<td>600</td>
<td>1100</td>
<td></td>
</tr>
<tr>
<td>3. Irrigation</td>
<td>11</td>
<td>11</td>
<td>550</td>
<td>500</td>
<td>1050</td>
<td></td>
</tr>
<tr>
<td>4. Cart Load</td>
<td>4</td>
<td>4</td>
<td>200</td>
<td>600</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>5. Seed Cast</td>
<td></td>
<td></td>
<td></td>
<td>300</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>6. Sowing</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>290</td>
<td>315</td>
<td></td>
</tr>
<tr>
<td>7. Transplanting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Fertilizer</td>
<td>4</td>
<td>4</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>D.A.P. 50 kg</td>
<td>400</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Potash 100 kg</td>
<td>440</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>17-17-17</td>
<td>460</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Others</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Pest Control</td>
<td>3</td>
<td>3</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Navakaran 1/2 Ltr</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Metasid</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Others 1 Ltr</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Crossing</td>
<td>2</td>
<td>58</td>
<td>60</td>
<td>2420</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rings, Scissors, Brush, white cloth etc</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Cleaning</td>
<td>10</td>
<td>10</td>
<td>400</td>
<td></td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>12. Picking</td>
<td>1</td>
<td>5</td>
<td>250</td>
<td></td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>13. Harvesting</td>
<td>5</td>
<td>5</td>
<td>450</td>
<td></td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>14. Processing</td>
<td>2</td>
<td>2</td>
<td>80</td>
<td></td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>15. Grading</td>
<td>0</td>
<td>2</td>
<td>80</td>
<td></td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>16. Storing</td>
<td>1</td>
<td>1</td>
<td>50</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>17. Packing</td>
<td>1</td>
<td>1</td>
<td>50</td>
<td></td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>18. Transport</td>
<td>1</td>
<td>1</td>
<td>50</td>
<td></td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>19. Supervision</td>
<td>4</td>
<td>4</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Others</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>48</td>
<td>88</td>
<td>136</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Value in Rs.            | 2400            | 3520| 5920         | 4845| 10765      |

Source: Field Survey
**Average Cost Of Production Of Seeds Of Open Pollination Variety Of Tomato**

The cost of production of open pollination seeds differ from those of hybrid seed production cost since the female labour requirement is less due to less amount of delicate work involved in this type of seed production. There is no crossing of the seed plants in open pollination production. Hence the female labour involvement could be kept low. The following details are provided in the work out of cost of production of tomato seeds of open pollination type.

- **Size of the land for cultivation**: 1 Acre
- **Duration of crop**: 4 months
- **Labour Input**
  - **Total number of male labourers employed**: 40
  - **Total number of female labourers employed**: 26
- **Wage rate per day for male labourers**: Rs 50=00
  - **Wage rate per day for female labourers**: Rs 40=00
- **Total cost of male labour**: Rs 2000=00
  - **Total cost of female labour**: Rs 1040=00
- **Total labour cost of 1 acre of cultivation**: Rs 3040=00
- **Total material and overhead cost**: Rs 475=00
- **Total cost of production**: Rs 7765=00
- **Total production of seed per acre**: 100 Kg
- **Average cost of production of 1 kg of seed of open pollination**: Rs 78=00
Table No. 5.40 Cost of production

Name of Crop: Tomato (OP)  Size of land: 1 Acre  Duration: 4 Months

Labour Cost (in Rs) Male: Rs. 50  Female: Rs. 40  Own Land Yes  Hired No

<table>
<thead>
<tr>
<th>Productions Stages</th>
<th>Nos. of Labours</th>
<th>A</th>
<th>Necessaries Equipments</th>
<th>B</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Value in Rs.</td>
<td>Value in Rs.</td>
</tr>
<tr>
<td>1. Land revenue</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>2. Plowing</td>
<td>7</td>
<td>7</td>
<td>14</td>
<td>700</td>
<td>1050</td>
</tr>
<tr>
<td>3. Irrigation</td>
<td>8</td>
<td>8</td>
<td>16</td>
<td>500</td>
<td>900</td>
</tr>
<tr>
<td>4. Cart Load</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>480</td>
<td>630</td>
</tr>
<tr>
<td>5. Seed Cast</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>6. Sowing</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>40</td>
<td>130</td>
</tr>
<tr>
<td>7. Transplanting</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>40</td>
<td>300</td>
</tr>
<tr>
<td>8. Fertilizer</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1200</td>
<td>1330</td>
</tr>
<tr>
<td>9. Pest Control</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>1000</td>
<td>1200</td>
</tr>
<tr>
<td>10. Cleaning</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>50</td>
<td>250</td>
</tr>
<tr>
<td>11. Picking</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>50</td>
<td>340</td>
</tr>
<tr>
<td>12. Harvesting</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>40</td>
<td>400</td>
</tr>
<tr>
<td>13. Processing</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>40</td>
<td>120</td>
</tr>
<tr>
<td>14. Grading</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>30</td>
<td>160</td>
</tr>
<tr>
<td>15. Storing</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>25</td>
<td>75</td>
</tr>
<tr>
<td>16. Packing</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>30</td>
<td>80</td>
</tr>
<tr>
<td>17. Transport</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>18. Supervision</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>19. Others</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>26</td>
<td>66</td>
<td>4725</td>
<td>7765</td>
</tr>
</tbody>
</table>

Value in Rs. 2000  1040  3040  4725  7765

Source: Field Survey
Graph 5.40: Cost of Production of Tomato OP

Production Stages

Cost of Production (in Rs.)

Material Cost  Labour Cost

- Land Revenue
- Plowing
- Irrigation
- Cart Load
- Seed Cast
- Sowing
- Trans Planting
- Fertilizer
- Pest Control
- Cleaning
- Picking
- Harvesting
- Processing
- Grading
- Storing
- Packing
- Transport
- Supervision
- Others
Average Cost Of Production Of Open Polination Seed Of Brinjal

The following data is collected from the seed farmers cultivating brinjal through open pollination method of high yielding variety of seeds.

Size of the land for cultivation : 1 Acre
Duration of crop : 4 months

Labour Input and cost
Total number of male labours employed : 40
  .., female : 20
Wage rate per day for male labourers : Rs 50=00
  .., female : Rs 40=00
Total cost of male and female labourers : Rs 2800=00
Total cost of materials and overhead : Rs 4890=00
Total cost of production : Rs 7690=00
Yield of seed per acre of land : 110 kgs
Average cost of production per kg of seed : Rs 70=00

The details of cost of labour for individual items of operations and the cost of material inputs and overheads are provided in the adjoining table.
<table>
<thead>
<tr>
<th>Stages</th>
<th>Nos. of Labours</th>
<th>A Value in Rs.</th>
<th>B Value in Rs.</th>
<th>Total Value A+B+C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Land revenue</td>
<td>Male 100</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>2. Plowing</td>
<td>Male 8</td>
<td>8</td>
<td>400</td>
<td>1200</td>
</tr>
<tr>
<td>3. Irrigation</td>
<td>Male 10</td>
<td>10</td>
<td>500</td>
<td>1100</td>
</tr>
<tr>
<td>4. Cart Load</td>
<td>Male 4</td>
<td>4</td>
<td>200</td>
<td>800</td>
</tr>
<tr>
<td>5. Seed Cast</td>
<td>Male 15</td>
<td>15</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>6. Sowing</td>
<td>Male 1</td>
<td>1</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>7. Transplanting</td>
<td>Male 7</td>
<td>7</td>
<td>290</td>
<td>290</td>
</tr>
<tr>
<td>8. Fertilizer</td>
<td>Male 1</td>
<td>1</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>9. Pest Control</td>
<td>Male 4</td>
<td>4</td>
<td>200</td>
<td>1175</td>
</tr>
<tr>
<td>10. Crossing</td>
<td>Male 4</td>
<td>4</td>
<td>3200</td>
<td>3450</td>
</tr>
<tr>
<td>11. Cleaning</td>
<td>Male 4</td>
<td>4</td>
<td>160</td>
<td>210</td>
</tr>
<tr>
<td>12. Picking</td>
<td>Male 1</td>
<td>1</td>
<td>130</td>
<td>170</td>
</tr>
<tr>
<td>13. Harvesting</td>
<td>Male 4</td>
<td>4</td>
<td>280</td>
<td>320</td>
</tr>
<tr>
<td>14. Processing</td>
<td>Male 2</td>
<td>2</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>15. Grading</td>
<td>Male 1</td>
<td>1</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>16. Storing</td>
<td>Male 1</td>
<td>1</td>
<td>50</td>
<td>70</td>
</tr>
<tr>
<td>17. Packing</td>
<td>Male 1</td>
<td>1</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>18. Transport</td>
<td>Male 1</td>
<td>1</td>
<td>50</td>
<td>90</td>
</tr>
<tr>
<td>19. Supervision</td>
<td>Male 5</td>
<td>5</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Total</td>
<td>Male 46</td>
<td>46</td>
<td>139</td>
<td></td>
</tr>
</tbody>
</table>

Labour Cost (in Rs) Male: Rs. 50
Female: Rs. 40

Source: Field Survey
**Average Cost Of Production Of Okra Seed Through Open Pollination**

**Method**

Size of the land for cultivation : 1 Acre  
Duration of crop : 4 months  
Labour Input   
Total number of male labours employed : 41  
... female : 19  
Wage rate per day for male labourers : Rs 50=00  
... female : Rs 40=00  
Total cost of male labour : Rs 2050=00  
... female : Rs 760=00  
Total cost of labour : Rs 2810=00  
Total cost of materials and overhead : Rs 4060=00  
Total cost of production : Rs 6870=00  
Total yield of seed per acre : 275 kgs  
Average cost per kg of seed : Rs 25=00

Details of cost items of labour materials and overhead and the actual cost of production have been provided in the following table.
Table No. 5.42 Cost of production

Name of Crop: Okra (OP)  Size of land: 1 Acre  Duration: 4 Months

Labour Cost (in Rs) Male: Rs. 50  Female: Rs. 40  Own Land Yes  Hired No

<table>
<thead>
<tr>
<th>Productions Stages</th>
<th>Nos. of Labours</th>
<th>A Value in Rs.</th>
<th>Necessaries Equipments</th>
<th>B Total Cost Value in Rs.</th>
<th>A+B=C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Tractor, Agri equipments</td>
<td>Tube well K.P.T.C.L. Charges</td>
<td>200 Load Cattledung</td>
</tr>
<tr>
<td>1. Land revenue</td>
<td>100</td>
<td>100</td>
<td>350</td>
<td>500</td>
<td>900</td>
</tr>
<tr>
<td>2. Plowing</td>
<td>7</td>
<td>0</td>
<td>7</td>
<td>400</td>
<td>500</td>
</tr>
<tr>
<td>3. Irrigation</td>
<td>8</td>
<td>0</td>
<td>8</td>
<td>350</td>
<td>400</td>
</tr>
<tr>
<td>4. Cart Load</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>200</td>
<td>400</td>
</tr>
<tr>
<td>5. Seed Cast</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>90</td>
<td>250</td>
</tr>
<tr>
<td>6. Sowing</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>90</td>
<td>250</td>
</tr>
<tr>
<td>7. Transplanting</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>210</td>
<td>250</td>
</tr>
<tr>
<td>8. Fertilizer</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>100</td>
<td>1100</td>
</tr>
<tr>
<td>9. Pest Control</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>200</td>
<td>1000</td>
</tr>
<tr>
<td>10. Cleaning</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>200</td>
<td>250</td>
</tr>
<tr>
<td>11. Picking</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>12. Harvesting</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td>500</td>
<td>550</td>
</tr>
<tr>
<td>13. Processing</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>14. Grading</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>15. Storing</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>16. Packing</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>17. Transport</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>18. Supervision</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>200</td>
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</tr>
<tr>
<td>Total</td>
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<td>19</td>
<td>60</td>
<td>2050</td>
<td>760</td>
</tr>
</tbody>
</table>

Value in Rs. 2050 760 2810 4060 6670

Source: Field Survey
Table No 5.43 Cost of Production of Seeds – A summary of Findings

<table>
<thead>
<tr>
<th>Name of the seed</th>
<th>Variety of seed</th>
<th>Cost of production per kg(Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Cotton</td>
<td>Hybrid</td>
<td>91.75</td>
</tr>
<tr>
<td>2 Tomato</td>
<td>&quot;</td>
<td>391.6</td>
</tr>
<tr>
<td>3 Brinjal</td>
<td>&quot;</td>
<td>138.83</td>
</tr>
<tr>
<td>4 Okra</td>
<td>&quot;</td>
<td>66.97</td>
</tr>
<tr>
<td>5 Sunflower</td>
<td>&quot;</td>
<td>21.53</td>
</tr>
<tr>
<td>1 Tomato</td>
<td>Open pollination</td>
<td>78</td>
</tr>
<tr>
<td>2 Brinjal</td>
<td>&quot;</td>
<td>70</td>
</tr>
<tr>
<td>3 Okra</td>
<td>&quot;</td>
<td>25</td>
</tr>
</tbody>
</table>

Source – Field Survey

The details in the above table reveal some significant trends about the cost of production of the hybrid / high yielding variety of seeds. The cost of production of hybrid variety of tomato seeds is the highest at Rs 391.6 per kg followed by the cost of production of brinjal at Rs 138.38 per kg. The cost of production of sunflower hybrid seeds is the lowest at Rs 21.53. The cost of production of tomato seed of open pollinated variety is maximum at Rs 78.00 per kg while the cost of okra seed of this variety is the lowest is the lowest at Rs 25.00 per kg.

**Crop Insurance In Hybrid Seed Farming**

Crop insurance against some natural and other hazards like pests, brought and excess rainfall, fire and theft etc has been provided by the agencies governing the promotion of agriculture and seeds management. However there is acute indifference on the part of seed farmers in going in for crop insurance relating to hybrid or high yielding varieties of seed cultivation and production. The
responses obtained from the 100 seed farmers covered by the study indicate the trend. The following table provides the details.

**Table NO. 5.44 Crop Insurance Of Hybrid Seed Crops**

<table>
<thead>
<tr>
<th>Response</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>12</td>
</tr>
<tr>
<td>No</td>
<td>88</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

It is clear from the response details in the above table that a large majority of 88 percent of the 100 respondents have not resorted to obtain insurance cover while a small number of 12 percent have resorted to insuring their seed crops.

**Insurance Cost Of Hybrid Seed Crops**

The annual cost of insuring the hybrid seed crops ranged between Rs.100-200 to Rs.400 and above the following table provides the details

**Table NO 5.45 Insurance Cost Of Hybrid Seeds Crops**

<table>
<thead>
<tr>
<th>Cost per year (Rs)</th>
<th>No of farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-200</td>
<td>6</td>
</tr>
<tr>
<td>201-400</td>
<td>4</td>
</tr>
<tr>
<td>400 and above</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
</tr>
</tbody>
</table>

Source- Field Survey

The cost of insurance of seed crops ranged between Rs 100-200 per year in case of 6 seed farmers, while the insurance cost ranged from Rs 201-400 for 4 seed farmers. The insurance cost was higher at Rs 400 and above per year in case of 2 seed farmers covered by the study.

The seed companies have not provided assistance to cover the cost of insurance as asserted by the respondent seed farmers.
Major Observations

The following major observations emerge from the foregoing analysis of the production dimensions of hybrid /HYV seeds in the study area.

1. The production of hybrid/HYV seeds is largely carried on black and red soil in the study area.

2. Irrigated as well as non-irrigated lands are used by majority of seed farmers.

3. Hybrid seeds of cotton, tomato, brinjal, okra and sunflower are produced by the seed farmers covered by the study. HYV/open pollination seeds production include tomato, brinjal, and okra.

4. The seed crops are grown one to three times in a year. Cotton seeds are produced once in a year. Okra and sunflower are grown once or twice in a year. Tomato and brinjal are grown upto three times in a year by the seed farmers.

5. Maximum number of seed farmers covered by the study produced both hybrid and high yielding (open pollination) seeds.

6. Maximum number of respondent seed farmers commenced seed farming between 1985 and 1995 in the study area. Maximum number of respondent seed farmers were promoted to respondent seed farmers commenced seed farming between 1985 and 1995 in the study area. Maximum number of respondent seed farmers were promoted to start the seed farming by the seed companies operating in the area.
7. Assured market, better price, technical help from seed companies, more income and requirement of small size of land led the majority of seed farmers to take up to seed companies. More income and requirement of small size of land led to seed farmers to take up to seed farming.

8. Suitable soil, water and irrigation facilities, suitable climate, knowledge of seed farming, availability of finance, cheap labour in the area availability of skilled labour were the advantages for starting seed farming according to the majority of respondent farmers.

9. Seed companies have been the main source of supply of seeds to the farmers. Seed companies have been advancing money to seed farmers for purchase of seeds, pesticides, fertilizers and other requirements.

10. Maximum number of seed farmers used their own funds for their production operations. Others borrowed money from banks, money lenders, friends and relatives.

11. Seed farmers have been availing of training in seed farming provided by seed companies. The training duration ranges from a minimum of 8 days to two months Training covers such areas as tilling, sowing, maintenance of crops, crossing, harvesting, processing packing etc. Training in seed farming has helped in better management of resources, better method of farming, better yield, lower costs, better quality production of seeds etc. Seed companies provided technical assistance to seed farmers in all the areas of seed production.
12. Majority of producers of hybrid seeds had ½ to 1 acre of land. Few of the respondent seed farmers had been using 2 to 4 acres of land for producing hybrid/HYV seeds in the area covered by the study.

13. The production of hybrid and high yielding varieties of seeds by the seed farmers covered by the study has increased continuously from 1999-99 to 2002-2003. Similarly the area under the seed production and the number of farmers have also increased during the same period.

14. The yield per acre(productivity) of different hybrid and HYV of seeds has improved during the five years covered by the study.

15. The average cost of production of different hybrid seeds ranges between Rs.21.53 per kg to Rs. 391.6 per kg. The average cost of production of different seeds is Rs. 91.75 for hybrid cotton, Rs.391.6 for hybrid tomato, Rs.138.83 for hybrid brinjal, Rs.66.97 for hybrid okra and Rs.21.53 for hybrid sunflower. The average cost of production per 1 kg of different high yielding (open pollination) variety of seeds is Rs.78.00 for tomato, Rs.70.00 for brinjal, and Rs.25.00 for okra.

16. Maximum number of seed farmers covered by the study did not insure their seed crops. For the seed farmers who insured their seed crops the cost of insurance per year ranged between Rs.100-200 to Rs.400 and above per year.