Point wise reply to the Lok Sabha Starred / Un starred Question Dy. No. 5799 due for answer on 31/07/2018 regarding production of grapes, onion and sugarcane

a) The details of the leading grapes, onions and sugarcane producing States in the country:

Leading grapes producing states are Maharashtra, Karnataka, Mizoram, and Tamil Nadu. In other states like Kerala, Andhra Pradesh, Telangana, Punjab, Jammu & Kashmir, Madhya Pradesh, Himachal Pradesh, Punjab, Haryana grow grapes on less than thousand hectares each and together account for about 3000 ha under grapes.

b) The total production of grapes, onions and sugarcane recorded during the last three years and the current year, State-wise

The total production of grapes recorded during the last three years and current year

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>State / UT</th>
<th>Area ('000 ha)</th>
<th>Product ('000 MT)</th>
<th>Area ('000 ha)</th>
<th>Product ('000 MT)</th>
<th>Area ('000 ha)</th>
<th>Product ('000 MT)</th>
<th>Area ('000 ha)</th>
<th>Product ('000 MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Maharashtra</td>
<td>93.26</td>
<td>2292.53</td>
<td>90.09</td>
<td>2048.11</td>
<td>103.98</td>
<td>2137.74</td>
<td>State-wise data not available</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Karnataka</td>
<td>21.76</td>
<td>420.81</td>
<td>23.35</td>
<td>429.78</td>
<td>24.23</td>
<td>445.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Mizoram</td>
<td>2.45</td>
<td>22.55</td>
<td>2.47</td>
<td>22.55</td>
<td>2.45</td>
<td>18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Tamil Nadu</td>
<td>2.31</td>
<td>32.63</td>
<td>2.44</td>
<td>34.10</td>
<td>2.31</td>
<td>30.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Others</td>
<td>3.18</td>
<td>54.27</td>
<td>3.31</td>
<td>55.5</td>
<td>3</td>
<td>51.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>122.96</td>
<td>2822.78</td>
<td>121.65</td>
<td>2590.04</td>
<td>135.95</td>
<td>2683.26</td>
<td>138.00</td>
<td>2980.00</td>
</tr>
</tbody>
</table>

Source: Horticulture Statistics Division, Department of Agriculture, Cooperation & Farmers Welfare.

c) The details of the assistance provided by the Government to grapes, onion and sugarcane producers during the said period, State/UT-wise;

Technical guidance was provided to the farmers through farmers’ meetings, ratio and TV talks, popular articles in newspaper, magazines, etc. Financial help is provided by various schemes of NHB and MIDH through State Government.

d) The details of the quantum of grapes and onions exported to various countries during the said period, State/UT-wise;

<table>
<thead>
<tr>
<th>State/ Port</th>
<th>2015-16</th>
<th>2016-17</th>
<th>2017-18</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Qty ('000 MT)</td>
<td>Rs. Crore</td>
<td>Qty ('000 MT)</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>145.86</td>
<td>1518.50</td>
<td>184.71</td>
</tr>
<tr>
<td>West Bengal</td>
<td>8.92</td>
<td>35.31</td>
<td>39.68</td>
</tr>
<tr>
<td>Odisha</td>
<td>2.49</td>
<td>4.01</td>
<td>2.03</td>
</tr>
<tr>
<td>Others</td>
<td>3.76</td>
<td>18.86</td>
<td>4.71</td>
</tr>
<tr>
<td>Total</td>
<td>161.03</td>
<td>1576.68</td>
<td>231.12</td>
</tr>
</tbody>
</table>
e) Whether the farmers producing grapes, onions and sugarcane are not getting remunerative prices for their produce:

By and large farmers producing grapes get remunerative prices for their produce. Cost of grapes in market depends upon quality (size, colour, shelf life, eating quality) and time of harvest. Very early (November, December) and very late (May, June) harvested grapes always get better prices. Export quality grapes always get good returns to farmers.

Estimated cost of production of grapes normally range between Rs. 25 to 35 per kg, considering 8 to 10 MT/acre yields. Most grape growers get more market rate to their grapes.

To earn more by bringing crop early in market, some farmers prune vineyards before 15th October (Recommended time of fruit pruning is 15th October). In this case farmers may face losses due to rains. This loss is not covered under insurance policy, as these rains are not considered as untimely rains.

f) If so, the corrective steps being taken by Government in this regard; and

- Grape is high-skilled crop and expert advice is required on day to day basis. ICAR-NRCG had introduced decision support system for diseases during 2007-08 in the form of mobile application and had more than 7000 total subscriptions. Impact analysis studies were conducted by ICAR-IASRI with 400 app users and non-users. The impact analysis indicated average 31% increase in productivity in vineyards of advisory users and there was about 13% reduction in use of various vineyards inputs. On same lines, decision support systems for nutrition and irrigation and insect pests have been developed and field validated. An Integrated weather information based advisory app has been developed to provide advisory on irrigation and nutrition, disease and insect management. This helps the farmers to prepare in a better way for any weather change during fruiting season.

- Over last two years experiments have been conducted at ICAR-NRCG to understand and standardize use of plastic covers on vineyards. Following advantages have been observed and the technology can be adopted by farmers to overcome bad effects of unseasonal rains.
  i. Assured control of downy mildew with only one or two fungicide sprays.
  ii. No filage and bunch rots under plastic cover.
  iii. Up to 20% saving on irrigation due to lower rate of evapotranspiration.
  iv. Better growth and yield under plastic cover.

- ICAR-NRCG has developed package of practices for table grapes which has benefitted the farmers in rationalizing use of fertilizers, water, pesticides and growth regulators, while enhancing the quality of grapes. This has also helped farmers in growing grapes during low irrigation water availability. ICAR-NRCG has also identified rootstock 110R for overcoming sodium toxicity and irrigation strategies for obtaining sustainable yields under low water availability.

- ICAR-NRCG had released three varieties
  i. Manjari Naveen: Table grape variety having self-thinning of bunches, uniform naturally bold seedless berries suitable for. A clonal selection from the Centennial Seedless having self-thinning of bunches, uniform naturally bold white seedless berries with firm pulp and mild Vanessa flavour. It is suitable for export for table purpose. It is early ripening by 30 days in comparison to Thompson Seedless. Its cultivation is suited for export. The variety matures in 110-120 days after fruit pruning (110 days without GA3 and 120 days with GA3). The berry diameter is 16 mm without GA3 treatment and 20 mm with GA3 treatment (5 ppm GA3 at 8 mm
berry stage) and the TSS is 16° Brix. The variety is to be harvested at 16° Brix. The application of GA3 @ 5 ppm + 0.25 ml CPPU should be given as a spray only once at 8 mm berry diameter. This helps in increase in berry diameter up to 20 mm. The variety does not require girdling and sub cane development. It can be more suitable for double crops in a year.

ii. **Manjari Medika**: It is a hybrid of Pusa Navrang × Flame Seedless which has been released as ‘Manjari Medika’. Manjari Medika is a teinturier variety (coloured pulp apart from coloured skin) suitable for juice making. The variety matures in 130-140 days after fruit pruning and yields 30-35 tons per hectare. The berry diameter is 12-14 mm and the TSS is 20-22 °B. This variety is one of the most suitable variety for processing industry and has proposed a “zero waste” processing model for this variety so that none of the bi-products is underutilized. Juice recovery is 70-72% and the juice is naturally sweet with attractive red colour and very well accepted by consumers. It contains exceptionally high amount of anthocyanin (4.0 g / kg) which have antioxidant and anti-cancerous properties. The seeds and the skin after extraction of the juice can be dried and powdered and this ‘pomace’ can be used for enhancing nutraceutical properties of bakery products like cookies and bread, by partly replacing fine wheat powder by pomace. These bakery products have also been very well accepted by the public. The technology for preparation of spray dried anthocyanin powder, its formulation and delivery system in the form of capsules is also standardized by this Centre. The seeds can be used for extraction of oil with recovery of 10 to 12% of seed weight. Grape seed oil fetches premier price in international and domestic market. The seed oil obtained from Manjari Medika is rich in vitamin E (tocopherol) and other nutritional lipids and may fetch higher prices. Thus the juice and the “zero waste” processing model for this variety can substantially enhance farmers’ income.

iii. **Manjari Kishmish**: White clonal selection from Kishmish Rozavis. The bunches have uniform sized berries with thin skin. High yielding variety (32 to 35 tons/ha), found suitable for raisin-making (raisin recovery 9 to 10 tons /ha). Variety is found better than Thompson Seedless in case of raisin recovery. A raisin recovery of 26.5% was recorded in comparison to Thompson Seedless (24-25%). Recommended for northern Karnataka adjoining Maharashtra.

g) **The steps taken/being taken by the Government to promote the cultivation of grapes, onions and sugarcane in the country?**

I. **Promotion of grape cultivation in non-traditional areas**

i. Malawa region in Madhya Pradesh

Under All India Coordinated Research Project on Fruits a new Centre was established at KNK College of Horticulture, Mandsaur. About 50 promising grape germplasm for table, wine and juice purpose were established. This Centre has shown that grapes of different types can be grown in that area. Presently, they have been given task to attempt for cultivation of coloured table grapes such as Nana Purple, Crimson Seedless, Fantasy Seedless. If the grapes of these varieties grow successfully and produce good colour in March-April, they can market these grapes in local as well as export market.

ii. Introduction of seedless grapes in Bankura area of West Bengal

Earlier possibility of growing grapes in this area was shown. However, prime seedless white varieties could not be made fruitful. ICAR-NRRCG in collaboration with Department of Food Processing Industry and Horticulture, Government of
West Bengal have taken up programme to develop a package of practices to make seedless table grapes fruitful in this area.

iii. Re-introduction of table grapes in Hisar, Haryana

Programme has been initiated in collaboration with CCS Haryana Agricultural University, Haryana and ICAR-NRCG to grow five table grape varieties in Haryana. In this area fruit pruning is done in February-March and grapes are ready for harvest in July when monsoon starts. Due to rains during harvesting period grapes get damaged and reduce economic value. ICAR-NRCG has planned to introduce cultivation under plastic covers. One acre vineyard is being developed for the above demonstration.

iv. Development of viticulture in Champhai district of Mizoram under NEH & TSP programme.

In Champhai area, cultivation of Bangalore Blue variety was introduced and the grapes are being used for production of wine in two established wineries. Under TSP programme ICAR-NRCG has established scientific nursery. Use of hydrogen cyanamide was introduced for uniform sprouting after fruit pruning. The uniform sprouting was achieved and it also increased the productivity of vineyard from 5 MT/acre to about 10 MT/acre.

II. Promotion of grape cultivation in traditional areas

i. Maharashtra

In recent years grape cultivation is being encouraged in Jalna area (water shade area of Kadvanchi) and Puluj in Pandharpur. Sizeable area has come in these areas during last few years. In Puluj area, new system is being followed where foundation pruning is taken during August, fruit pruning is taken in January to take harvest during June. During June, since grapes are not available anywhere in India, these farmers always get good returns.

ii. Introduction of two pruning – single cropping system in Cumbum Valley of Tamil Nadu

Earlier in Cumbum Valley there were five prunings in two years cycle to take five crops. In this system many of the crops were not giving good economic returns due to poor quality. Even vineyard management was difficult. Recent years two pruning single cropping system has been introduced, where in foundation pruning is taken during November – December and fruit pruning is taken during February-March to take harvest during August. In new system, vineyard management is easy as rainy period is avoided during active growth and harvesting is done during August when fruits are not available in other grape growing areas.