

MODEL ANSWER SHEET

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Semester : III (New) Term : I Academic Year: 2021-22
Course No. : HORT 232 Title : Production Technology for Vegetables and Spices
Credits : 2(1+1)
Day & Date : 22.11.2021 Time: 1 Hour Total Marks:40

- Note :
1. Solve **ANY FOUR** questions from **SECTION 'A'**.
 2. Solve **ANY SIX** questions from **SECTION 'B'**.
 3. All questions from **SECTION 'C'** are compulsory.

SECTION "A"

Q.1 Write in brief about importance of vegetable in human nutrition.

Vegetables are rich in carbohydrates, proteins, minerals, vitamins and other protective substances. They are important for neutralizing the acidic effect produced during digestion of meat, cheese and other fatty foods and roughages promote digestion and help to prevent constipation. The vitamins which are available in almost all kinds of vegetables produce profound and specific physiological effects in human body. Ten mineral elements are required apart from carbohydrates and proteins for proper growth and development of human health. Out of this calcium, iron and phosphorous are required in larger quantities but they are not present in sufficient amount in other food stuff except vegetables. Iodine and sodium elements are also supplied by vegetables.

Q.2 Write about the cultivation of brinjal in respect of seed rate, varieties, harvesting and yield per hectare.

Seed rate: 400 to 500 g/ha

Varieties: Aruna, AKLB-9, Krishna, Phule Arjun, Phule Harit, Pusa Kranti, Pusa purple round, Pusa purple cluster, Pusa purple long,

Harvesting: Brinjal fruits are harvested when they have developed a good colour and marketable size, are still immature, tender and have not lost culinary qualities. The fruits are harvested with stalk at joint where they are attached to the branch. Normally the plucking can be done at 7 to 10 days depending upon the variety.

Yield: Early crop normally yields 20-30 t/ha. While long duration crop yields 35-40 t/ha. Many F1 hybrids yield about 40-80t/ha.

Q.3 Write in brief about raising of vegetable seedlings in nursery.

Approximately 200m² area will be sufficient for raising the seedlings to plant one hectare. Generally nursery beds are prepared in the size of 7.5 m long, 1-1.2 m width and 10-15 cm height. Well decomposed farmyard manure is properly mixed in to top soil of the bed at the rate of 3 kg/ m². A fertilizer mixture of 0.5 kg NPK of 15:15:15 per bed is mixed in the soil at least 10 days before sowing the seeds. For raising healthy seedlings, seeds should be treated before sowing with captan or thiram @ 2g/kg of seed is essential. The seeds are sown in a bed either broadcasted or in row, at a distance of 7.5 cm between the rows. After sowing, the beds are covered with a thin layer of dry grass or compost.

thereafter the beds are irrigated with a rose can. Light watering is required daily in the evening. Every week, if required, a fungicide such as Mancozeb or Difolation 0.25% should be sprayed to reduce the post emergence damping off. The seedlings will be ready for transplanting after 4 to 6 weeks of seed sowing. Now a day's various kinds of plastic seedling trays (Pro-trays) are used for raising seedlings. These trays provide congenial environment for growth and development of seedlings.

Q.4 Write the cultivation of Black Pepper in respect of propagation, planting, varieties and harvesting of the crop.

Propagation: Pepper can be propagated by seeds as well as by vegetative means.

Planting: Pits of 50 cm³ at a distance of 30 cm away from the base, on the northern side of supporting 14 tree are taken with the onset of monsoon. The pits are filled with a mixture of top soil, farmyard manure @ 5 kg/pit and 150 g rock phosphate. Neem cake @ 1 kg and Trichoderma harzianum @ 50 g also may be mixed with the mixture at the time of planting.

Varieties: Panniyur 1 to 7, Sreekara, shubhakara, Panchami, Thevam, Malabar Excel, Sakthi, Cheriyananiyakkadan, Kalluvally.

Harvesting: Pepper commences bearing third year after planting. Flowering and harvesting depend on climatic factors, the most important being rainfall. In India, pepper plants start flowering during May-June with onset of south west monsoon and harvesting is usually done in Dec.- January. At higher altitudes, the fruit growth and maturity get delayed. Generally harvesting is done when one or two berries in a few spikes turn orange or red.

Q.5 Write about the cultivation of potato in respect of soil and climate, Improved varieties, seed rate and harvesting of the crop.

Soil and climate: Soil should be well drained, deep, alluvial soil with neutral reaction. Soil should be loose, firm and without compacted layer that hinders root penetration. Soil should be free from stones and clods for avoiding deformation of tubers. Wide range of climatic conditions. Crop is raised in areas and seasons when dry and night temp. are below 35°C and 20°C, respectively. For sprouting – 22-24°C and for tuberisation – 18-20°C. Growth of potato is accelerated during long days and high temp. For flowering, potato is a long day plant.

Improved Varieties: Kufri Ashoka, Kufri Chandramukhi, Kufri Sinduri, Kufri Alankar, Kufri Sona, Kufri Chipsona, Kufri Jyoti.

Seed Rate: In general, 15-20 q for large tubers, 10-15 q medium size tubers and 8-10 q small size tubers are required for 1 ha. Area.

Harvesting: Harvesting is done when before temp. rises above 30°C. It is completed by end of January in eastern plains. Harvesting is done manually with the help of a spade or bullock-driven single row plough or mechanically with the help of 1-4 potato digger. Av. yield of early varieties is 20t/ha and that of late is 30 t/ha.

SECTION "B"

- Q6) Do as directed.
- Calicut.
 - Diallyl disulphide.
 - Konkan Sugandha and Konkan Swad.
 - Akola Safed
 - Vitamin E

- f) The edible part of cinnamon is **bark**.
- g) **Black pepper** is called as King of Spices.

SECTION "C"

Q. 7	1) For distant transportation, tomato fruits are picked at _____.		
	a)	Immature green stage	b) mature green stage
	c)	turning stage	d) Red ripe stage
	2) Brinjal borne ----- types of flower on the basis of length of style.		
	a)	3	b) 4
	c)	5	d) 6
	3) Botanical name of bitter gourd is _____.		
	a)	<i>Citrullus lanatus</i>	b) <i>Cucurbita pepo</i>
	c)	<i>Momordica charantia</i>	d) <i>Momordica dioica</i>
	4) Pungency in onion is due to _____.		
	a)	Diallyl disulphide	b) Allyl Propyl Disulphide
	c)	Capsaicin	d) Alkoloids
	5) Fruit cracking in tomato is due to deficiency of _____.		
	a)	Calcium	b) Magnesium
	c)	Manganese	d) Boron
	6) PusaBedana is a seedless variety of _____.		
	a)	Muskmelon	b) Watermelon
	c)	Sponge gourd	d) Round melon
	7) The yellow pigment present in rhizome of turmeric is _____.		
	a)	Curcumin	b) Capsicin
	c)	Capsanthin	d) Charam
	8) Part of commerce in clove is _____.		
	a)	Leaves	b) Unopened flowers bud
	c)	Fruit	d) Aromatic bark
	9) Cinnamon belongs to family _____.		
	a)	Anacardiaceae	b) Mysitiaceae
	c)	Lauraceae	d) Leguminoceae
	10) Indian Institute of Vegetable Research is located at _____.		
	a)	New Delhi	b) Varanasi
	c)	Ludhiana	d) Bhopal
	11) Okra belongs to family _____.		
	a)	Solanaceae	b) Leguminoceae
	c)	Malvaceae	d) Poaceae
	12) PusaNavbahar is a variety of _____.		
	a)	French bean	b) Cluster bean
	c)	Cowpea	d) Sponge Gourd