

## Strawberry Cultivation



### Introduction

Strawberry is good source of nutrients and vitamins as the fruit is high on the list of health fruits too. Strawberries form a great source of vitamin C, fibre, and potassium. Strawberries are grown in many areas of India. Kashmir's climate, with bright sunshine and moderate rainfall, is ideally suited to strawberry cultivation. This is the first fruit which comes after winter here and it is very good for health. The strawberries were not grown in large quantities few years back but with the gradual demand for table varieties as well as from processing units; numbers of farmers have taken up this activity. Some progressive farmers should undertake strawberry processing as a measure of forward integration. With assured supply of good quality strawberries, quality as well as competitive edge of processed products would go up. The strawberry is being cultivated in few areas of Kashmir which can be taken up on commercial scale and provide employment opportunities to the unemployed youth.

### Market Potential

Fruits are available only during 4-5 months every year and they are perishable. But with the advent of preservation techniques, it is possible to enjoy them even during off-season. There are many methods like dehydration, preparation of pulp or squash or syrup and soon. strawberry by processing them into jam, jelly, juice, ice cream, preserves, candies, freeze strawberry, soft drinks and other products.

### Cultivation

Strawberry thrives best in temperate climate. It is a short day plant, which requires exposure to about 10 days of less than 8 hours sunshine for initiation of flowering. In

winter, the plants do not make any growth and remain dormant. Strawberry requires a well-drained medium loam soil, rich in organic matter. The soil should be slightly acidic with pH from 5.7 to 6.5. A large number of varieties are available. For the hilly areas, varieties Royal Sovereign, Srinagar and Dilpasand are suitable. Some of the introductions from California, such as Torrey, Toiga and Solana may prove even more successful. Propagation is done by means of runners that are formed after the blooming season. The plants may be allowed to set as many runners as possible but not allowed to set any fruits. All the plants with good root system should be utilised to set a new plantation. Given the best attention and care, a single plant usually produces 12 to 18 runners. The land for strawberry planting should be thoroughly prepared by deep ploughing followed by harrowing. Liberal quantities of organic manure should be incorporated in the soil before plating. Strawberry can be planted on flat beds, in the form of hill rows or matted rows, or it can be planted on raised beds. The planting distance should be 45 cm from plant to plant and 60 to 75 cm. from row to row. In the hills, Transplanting is done in March-April, September-October, but in the plains, the months of January-February may be utilized for this purpose.

In cold climate the soil is covered with mulch in winter to protect the roots from cold injury. The mulch keeps the fruits free from soil, reduces decay of fruits, conserves soil moisture, lowers soil temperature in hot weather, protects flowers from frost in mild climates and protects plants from freezing injury in cold climates. Several kinds of mulches are used, but the commonest one is straw mulch. The name strawberry has been derived from this fact.

### Do's

1. The ideal time of planting runners or crowns in hilly areas is September-October.
2. Strawberry is commercially propagated by runner plants. These can be kept in cold storage before transplanting.
3. Areas where strawberries are to be planted should be free from white grubs and cutworms
4. The soil should be frequently irrigated to reduce water stress in the leaf. Defoliation suppresses the plant growth, delays fruiting and reduces yield & quality. Irrigation is applied in furrows between the rows
5. Planting distance varies according to variety & type of land. A spacing of 30 cm. x 60 cm. is usually followed.
6. A fertilizer dose of 25-50 tonnes farmyard manure, 75-100 kg. N, 40-120 kg. P<sub>2</sub>O<sub>5</sub>, 40-80 kg. K<sub>2</sub>O/ha. may be applied according to soil type and variety planted.
7. Strawberries are generally harvested when half to three fourths of skin develops colour. Depending on the weather conditions, picking is usually done on every second or third day usually in the morning hours.

## Don't

1. Plant runners early as plant lack vigour and results in low yield and quality of fruits. Neither very late, as crops are light. The ideal time is September-October.
2. The land should not be wet and bright sunlight should be available.
3. Excessive irrigation results in growth of leaves and stolons at the expense of fruits & flowers and also increases the incidence of Botrytis rot.
4. Strawberries should not kept in the open field so to avoid damage due to excessive heat.
5. Washing not be encouraged as it bruises and spoils the luster of the fruits.

## Intercropping:

Strawberry can be suitably integrated with apple as an intercrop under Kashmir conditions thus permits increased harvest per unit, better economic returns for the farming community.

## Health Benefits of Strawberries

1. Helps burn stored fat
2. Boost short term memory
3. Low in Calories - High in Fiber
4. Ease Inflammation
5. Lower cardiovascular disease
6. Promote bone health
7. Prevent oesophageal cancer
8. Anti-aging properties
9. Good for weight loss
10. Promote eye health

## Economics

<b>Capital Cost</b>	<b>₹ 1.60 lakhs</b>
a) Land	Owned/Leased
b) Shed and Pump House	₹ 0.75 lakhs
c) Fencing	₹ 0.35 Lakhs
d) Machinery/Equipment	₹ 0.5 lakhs
<b>Production/ Cultivation Cost</b>	<b>₹ 2.4 lakh/hac.</b>
<i>Grand Total</i>	<i>₹ 4.0 lakhs</i>

<b>Returns</b>	
Total yield	36 qtl/hac.
Sale price of strawberry	₹ 200/kg
Gross Return	₹ 7.2 lakhs

### Check List:

#### 1. Land

- *Area:* One Hectare (for optimal productivity)
- *Nature:* Sandy loam to loamy soil with pH 5.7-6.5 is ideal for cultivation.
- *Legal Documentation:* Lease Deed from the landlord (if not owned)

#### 2. Building

- Storage Shed: 15 X 12 sq ft

#### 3. Costs Involved

- Cost of planting material
- Fertilizers & Pesticides
- Mulching
- Cost of Labour
- Tube-well/submersible pump
- Cost of Drip (Turbo-line) with Fertigation

#### 4. Money

- Check various financial schemes at JKEDI.

#### 5. Suppliers

- Machinery (from the registered dealers)
- Agriculture Equipments (from the local market)
- Runners & Technical guidance (Department of Agriculture.)

#### 6. Buyers

- Households and Bakery
- Food Processing Industry (Jams, Jellies and canning etc.)
- Ice Cream manufacturers.
- Chemical & Pharmaceutical companies
- Export

### Relevant government departments to approach for

- Department of Horticulture, Directorate of Agriculture, Jammu and Kashmir.
- Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST), Srinagar /Jammu
- Krishi Vigyan Kendras.