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Asparagus cultivation

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Introduction:

Asparagus is referred to as "Shatawar," and it is a perennial herbaceous plant. It is planted for the soup- and vegetable-making purposes of its soft, succulent shoots, or "spears." For 10 to 15 years after the plants are established, they continue to yield. A white, crystalline chemical called asparagine, which has diuretic qualities, can be found in spear juice.

Varieties- They are broadly divided into two groups-

1. The more popular and frequently utilized varieties are those that produce spears that are green in color.
2. Primarily used for processing is asparagus that is white or pale green in color.

Varieties

- ✓ Perfection
- ✓ Selection-841

Climate

A temperate zone crop, it prefers temperatures between 16 and 24 °C for the most of the growing season to produce nice spears. The manufacture of spears is hampered by the prevalence of high temperatures. Low temperatures are necessary when plants hibernate.

Soil and Field Preparation:

Since it is a perennial crop, it needs a sandy loam soil that is deep, fertile, well-drained, and rich in organic matter. The ideal pH range for soil is 6.0 to 6.7. To make the soil friable and loose, one deep ploughing followed by two to three cross harrowings is adequate. The field needs to be leveled through planking.

Manure and Fertilizers

When preparing the field, incorporate the well-decomposed FYM or compost at a

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rate of 300-400 q/ha. Add between 80 and 120 kilogram of nitrogen, 100 to 200 kg of phosphorus, and 60 to 80 kg of potassium per hectare per year, depending on the soil's productivity. Just before planting crowns, seeds, or seedlings, apply the entire amount of phosphorus and potassium. Nitrogen may be provided in 4-5 separate applications, including at planting, 20–25 days later, and then immediately following the first, second, and third cuts. The first year has a higher nitrogen need, which decreases to around 50% after that.

Raising of Plants

For improved germination, immerse the seeds in water for 24 hours prior to sowing. For one hectare of land, two to three kilograms of seed are needed. 25–30°C is the ideal range for seed germination. For plains and hills, respectively, the optimal sowing seasons in nurseries are July–November and March–May. Sowing should be done in rows that are 30 cm apart, 4 cm deep, and 3–4 cm wide. Early spring seeds require 3–4 weeks to germinate. After transplanting the seedlings to the field, keep them in the nursery for 8 to 12 months. 75-90 x 45-60 cm should be used as the distance between transplants.

Choose one-year-old crowns with huge buds and robust branching and growth. Approximately 20 centimeters of the crown were dug up. Place the crowns in furrows that are 15-20 cm deep and 1.5–2 m apart, keeping rows 45–60 cm apart. Press firmly all around the crowns as you correctly and slightly above ground level cover them with soil

Irrigation

Irrigating the crop is not necessary in humid areas, but it is in plains. During the summer, irrigation must be done often at intervals of seven days. The crop may usually be raised with two irrigations during cutting season and two more after that. Making provisions will help prevent waterlogging.

Inter-Culture and Weed Control

Maintain the field's weed-free status by routinely cultivating in between the rows without hurting the "spears." In the time leading up to cutting, hand hoeing is preferred. Morning operations involving intercultures are best avoided since spears are still tense, brittle, and likely to break. Every year, harrowing should be done, and fertilizer should be applied before growth begins. Metribuzin @ 1 kg/ha used pre-emergence in direct-sown crops and applied early post-emergence effectively controls the broad-leaved weed.

Blanching:

Cover the plants with soil up to a height of 25 to 30 cm in order to produce the white spears, specifically for canning purposes. Prior to harvesting the green spears for the fresh market, it is a standard procedure in the growing of asparagus.

Harvesting and Yield

Starting in the third year, it is preferable to harvest the crop. But certain spears might be acquired in the second year. After the establishment of seedlings, the crop can be harvested in roughly 13 to 20 months. In the spring (March–April), the spears are prepared for harvest. Using a special knife, slice the sensitive spears, which should be about 10-15 cm long, at a depth of 3-5 cm below the soil's surface. At present, harvesting should take place early in the morning, and produce should be swiftly transported to markets.

From the third year on, a sizable yield is obtained, and it continues to generate an economic yield for another 10-15 years. The yield climbed for 6-7 years, then stabilized for 12 years before beginning to steadily fall. However, the best spears are produced in the harvest between 4 and 10 years. Crop yields are typically between 25 and 40 q/ha. Considering that this crop is dioecious, male plants bear more spears and as a result provide a bigger yield than female plants, which give larger individual spears.

Insect-Pests and Diseases

Asparagus beetle - Beetles eat the foliage and spears, causing the spears to become bent and dull.

Control

I. Cut the affected spears at every 3 to 5 days.
II. Spray Malathion 50 EC @ 1.5-2.0 ml/litre water.

Garden centipede - The bug hollows down the spears below the ground's surface, rendering them unfit for human consumption.

Control

I. Remove the affected plants.
II. Flooding the field.

Fungal Diseases

Asparagus rust

Control

Small reddish yellow patches can be seen on the leaves, branches, and main stem of the plant. They eventually change color to a reddish-brown hue. The plant's top has been destroyed.

I. Destroy debris of the previous crop.
II. Locate to resistant varieties.
III. Uproot affected plants and destroy them.
IV. Spray Dithane M-45 at 0.2%.

Fusarium wilt Fusarium species). The fungus lives in the soil. The affected spears remain stunted, show brown discolouration and finally wilt.

Control

I. Follow crop rotation.
II. Use disease free planting material.
III. Remove affected plants and destroy
IV. Spray Dithane M-45 at 0.2%.