

Asparagus – Multi Purpose Herbaceous Plant

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Asparagus (*Asparagus officinalis*) traditionally known as shatavari means “who possesses a hundred husbands or acceptable to many” in ayurveda, this amazing herb is known as the “Queen of herbs”, because it promotes love and devotion. It is perennial herb, Rootstock creeping. It is also eaten as salad. The genus *Asparagus* is an herbaceous plant comprising approximately 150 species around the world which are comprised of herbs, shrubs and vines. The plant was distributed in Central and Southern Europe, the Middle East, Western Siberia and Northern Africa. It may be grown in the sun or semi – shade and is a very useful plant for a security hedge as it is extremely spiny. The fruit consists of a rounded berry which has a width of about 5-6 mm and it contains only one seed.



Synonym – Shatavari, rgine, tyrosine, flavonoids, resin and tannin.

Chemical constituents –The plant also contains – vitamins A, B1, B2, C, E, Mg, P, Ca, Fe and folic acid.

Other primary chemical constituents – essential oils, asparagines,

Traditional uses – Particularly in the rural areas where herbal medicine is the main source of the healthcare systems. The roots were for non-specific inflammatory diseases of the efferent urinary tract and for prevention of kidney and bladder stones, liver disease, asthma and gout. Used to treat irritable cough. Coughing with blood, Tuberculosis, uterine infection.

Plant part used – the herb, rhizome and root were used medicinally.

Climate – Asparagus is grown in temperate and sub – tropical region.

Soil – Well drained sandy soils. The optimum Ph is 6.5-7.5

Varieties

<p>Green: more popular and produced mainly for fresh market.</p>	<p>Light green: used in processing.</p>	<p>White: used in processing.</p>

Other varieties

- **Perfection** – improved variety released at IARI, New Dehli.
- **Jersey Centennial** - Vigorous, rust resistance and more productive than Marry Washington.
- **Marth Washington**
- **Marry Wahington.**
- **Palmetto**
- **Mammoth White.**
- **Jersey Giant.**
- **SL 831.**

Sowing time – in hills – March – May

In plains – July - November

Seed Rate – Its requires about 3-4 kg seed for cultivation.

Nutrient management – Apply Form Yard Manure @ 150-250 quintals per hectare as basal dose. N – 80-12 kg, P – 80-100 kg, K – 60-80/ ha.

Planting – There are three methods of planting –

1. Crown planting –

- Use only certified crown for planting as they may carry several diseases.
- Plant asparagus crown (roots plus plant buds) so that the top of the crown is 15 cm below the soil level.



2. Direct seedling methods –

- Seeds should be places 5 cm spart in the row, 2 to 2.5 cm deep.
- Single row seedling -2.5-3.4 kg / ha.
- Double row seedling – 4.5-6.8 kg/ ha.
- Seed germination temperature – 24 c



3. Seedling transplanting method –

- Asparagus seedlings can be grown successfully in peat pots, plastic pots or seedling type
- Good growth above the crown and good root system development require planting the seed not more than 1.25 cm deep.
- Transplanting of seedling is preferred after the threat of frost but before temperatures get above 32c.



Use of plant growth regulators

- Abscissic acid - promote sink strength or encourage phloem uploading.
- Gibberellic acid – growth of asparagus buds.
- Butyric acid - spears emergence.

Irrigation – Adequate moisture should be maintained for good germination and early seedling growth. Water stress during the early stage ca reduce yield.

Weed Management – Timely cultivation is a critical part of any asparagus weed control program, especially during the first two years.

The numbers of cultivars may be reduced by using herbicides.

Harvesting – Asparagus can be harvested on limited basis (2 to 3 weeks, or 8 spears per plant) during the first year after planting.

Allow spears to reach 20 cm tall and then cut with a knife or hand snap at the soil surface.

Spears should not be allowed to get taller than 22.5cm.

Blanching –

- Mounding the soil to a height of 25-30 cm over the rows is practiced to blanch the young spears and get white asparagus for canning.
- After harvest, the spears should be held in a cool shaded place and sprinkled with water to prevent shriveling and wilting.

Marketing – When preparing asparagus for market, spears should be uniform in length.

Tie in bunches of 500-1000g or pack loose in a carton.

Pack 6.8 or 13.6 kg in special pyramid shaped crates.

Yield – Yield depended upon the type of the varieties, region, climate and sex form.

Average yield – 25-40q / ha.

Storage – Asparagus can be stored for 2-3 weeks at 95% RH and at 0-2° c.

Diseases –

1. Crown rot and root rot –

Asparagus is affected by two *Fusarium* species,

- I. *Fusarium oxysporu* pv. *Asparagi* – crown rot.
- II. *Fusarium moniliforme* – root rot

In asparagus crown are planted that have crown rot they will not produce spears for more than 4-7 years, and this is not profitable.

Control –

Purchase only certified crowns,

The root rot pathogen may be spread through asparagus seed. Make sure to treat seeds for producing crown.

2. Cercospora blight – (*cercospora asparagi*) –

Symptoms –

1. Include small, oval and grey to tan lesions with reddish brown borders on the needles and small branches.
2. It causes the needles to fall from the mature fern.
3. It can be identified by the browning of needles.

Control –

- There are no known asparagus varieties resistant to *Cercospora* blight.
- Disposal of infested reduce in the spring delays blight appearance by about one week.
- Rows should also be planted in a north – south direction to take advantage of prevailing southerly winds in drying foliage burning.

3. Soft rot – (*Erwinia spp.*) –

Harvested asparagus is susceptible to bacterial soft rot.

Control –

Management is based on avoiding injuries and immediately cooling harvested spears.

Wash water and water used for hydrocooling should contain chlorine.

Pest –

1. European asparagus aphid –

1. It can be a problem occasionally.
2. When the aphid forms colonies, it causes Christmas tree or bonsai effect.



3. The blue-green aphid forms colonies in August or September.
4. The new fern becomes shortened or stunted and new needles look like they are clustered.

Control –

It can be controlled with a spray of Malathion 0.05% or Oxydemeton methyl 0.025%.

2. **Asparagus beetle** – Asparagus beetles and their larvae attack on spears and ferns.

Control – Spray carbaryl 0.1% to control this insect.

3. **Army worms**

**References**

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