Juniperus communis Linn.

Fam : Cupressaceae

Ayurvedic name	Vapusha, Hapusa
Unani name	Abhal
Hindi name	Aaraar, haubera, abhal
English name	Common Juniper
Trade name	Hauber
Parts used	Berries, leaf, bark and wood

Juniperus communis

Morphological Characteristics

It is a dense sub-erect or prostate perennial shrub growing up to 1.5 m height. Leaves are 5-13 mm long, in whorls, linear, sharply pointed, spreading nearly at right-angles from the branchlets, convex on the back, concave and glaucous bluish white on the upper surface, jointed at base and continued down the stem with a large gland on the decurrent portion.

Floral Characteristics

Flowers are dioecious, axillary, supported by small imbricating bracts. The male cones ovoid, yellow; antheriferous, scales broad ovate and acuminate. Stamens are decussate or in three, connective enlarged ovate or peltate at the apex bearing 2-6 globose pollen sacs near the base. Female flowers are in cones, composed of 2-6 opposite or ternate scales, usually not all fertile. Ovules are 1-2 to each fertile scale.

Fruit are 7.5-10.0 mm long, sub-globose, blue-black, glaucous berries tips of the scales visible at apex. Seeds are 1-3 with a thick hard testa and often connate into a hard several-celled mass.

Distribution

Juniperus is a temperate species, which occurs in forests throughout Western Himalaya from Srinagar to Kumaon at 1700-4200 m msl.

Climate and Soil

Sandy clay loam soil rich in humus is more suitable for this crop. It prefers temperate climate.

Propagation Material

Plant can be multiplied through stem cuttings and seeds, however, meristems and stem-cuttings are ideal material as plants propagated from stem-cuttings grow faster than that of seedlings.

Agro-technique[9]

Nursery Technique

- **Raising Propagules:**

  The right time for collection of seeds is October for raising seedlings of *J. communis*. Moreover, the rate of success of nursery using seeds is very poor. Hence, to multiply the plant through vegetative propagation is preferable. Stem cutting is suitable in May. Apical shoot (15cm) performs better root formation than the older part of the stem. Sand is most suitable medium for planting. In propagation chamber or polytunnel, the success rate of rooting is 40 to 57%. IBA 2500 ppm promotes rooting in maximum cuttings (80%) followed by IBA 3000 ppm (60%). Peeling of bark at the lower end of the cuttings improves the rate of success as compared to round or normal cut and crushing at the lower end. Normally, stem-cuttings take 60-70 days for rooting. The rooted stem-cuttings should be hardened at least for 6 months before transplanting in field. In nursery, the stem-cuttings should be planted at 10cm X10cm spacing.

- **Propagule Rate and Pre-Treatment:**

  About 10,000 saplings are required for one hectare land.

Planting in the Field

- **Land Preparation and Manure Application:**

  July-August is the suitable period for planting rooted stem-cuttings or seedlings of plant in main field. It is not necessary to plough entire field for planting crop. The planting spots marked at desired space should be made weed free before making planting pits of dimension 45cm X 45cm X 45cm. Pits are filled with equal proportion of soil and sand. About 15 t/ha of Farm Yard Manure (FYM) should be applied as basal dose at the time of transplanting in main the field. In subsequent years, FYM @ 15 t/ha should be applied at the time of bud-break in March-April, after winter dormancy.

- **Transplanting and Optimum Spacing:**

  Sapling is planted at the centre of the pit and the soil is gently compressed after planting. The pits are made at a spacing of 1m x 1m accommodating 10,000 plants/ha. Plants should be watered lightly after the planting.

- **Intercropping System:**

  Intercropping is not suitable for the crop.

[9]Agro-technique study carried out by Institute of Himalayan Bioresource Technology (Council of Scientific and Industrial Research), Post Box No. 6, Palampur-176061 Himachal Pradesh

- **Irrigation Practices:**

  In the absence of rainfall, irrigation at weekly interval is essential for about a month after transplanting to ensure establishment of the saplings in field.

- **Weed Control:**

  Hand weeding twice at monthly intervals during July-September provides effective weed control in the initial 2-3 years of the crop.

- **Disease and Pest Control:**

  No disease or insect-pest has so far been noticed in this crop.

Harvest Management

- **Crop Maturity and Harvesting:**

  J. communis bears flowers / fruits after attaining the age of about five years. Fruits rip during September-October, hence it is the right time to harvest the fruits. Bark and leaf can also be collected during October.

- **Post-harvest Management:**

  Bark, leaf and fruits can be air dried and stored at room temperature in a dry place.

- **Chemical Constituents:**

  Plant contains 4-terpineol (18.14%), marpol (7.96%), α-pinene (6.96%), γ-terpinene (4.46%), β-fenchyl alcohol (1.53%) and oplopenone (0.69%) are major constituents. As per literature, sabinene (48.8%), α-pinene (6.2%) and endofenchyl acetate (5.8%) are major components of the essential oil from needles of *J.communis* growing in nature. Fruit yields 0.8 – 1.2% essential oil and 8% resin. It also contains the bitter substance juniperin.

- **Yield:**

  Yield could not be recorded because of destructive methods for extracting leaf, bark and wood.

Therapeutic Uses

Berries, wood and oil are used in folk remedies for cancer, indurations, polyps, swellings, tumors and warts. Its fruit and essential oil possess carminative, stimulant, deobstruent, diaphoretic, digestive and diuretic properties. They are useful in different forms of dropsies, either administered alone, or in combination with other diuretics. They are also used to treat mucous discharges in gonorrhoea, gleet and leucorrhoea; and some cutaneous diseases. The wood is sudorific in action.