Isabghul

**Plantago ovata** Forsk.

**Family: Plantaginaceae**

A stemless or sub-caulescent softly hairy or woolly annual herb; leaves narrowly linear or filiform, entire or distantly toothed; flowers in cylindric or ovoid spike; capsules ellipsoid, 8mm. long, obtuse, the upper half coming off as a blunt conical lid, membranous, glabrous; seeds ovoid-oblong, 3mm. long, boat-shaped, smooth, yellowish brown.

**Distribution:**

P. ovata is indigenous to the Mediterranean region and West Asia, extending up to Sutlej and Sind in West Pakistan. It has been introduced into India and cultivated for its seeds which are mainly valued for their husk. Its cultivation on a commercial scale is confined to the district of Banaskantha and Mehsana in north Gujarat, Punjab and Uttar Pradesh.

**Vernacular Names:**

Sanskrit – Snigdajeera

Hindi – Isabghol

English - Isapaghula

Kannada – Isafgolu

Telugu – Isapgola

Gujarati – Isapghol

Malayalam – Karkatsringi

**Agro-climatic requirements:**

P. ovata is a hardy crop and can be grown on variety of soils, but it does well on rich, well drained loamy soil. It is recommended as suitable crop where soils are sandy or goradu in Gujarat. Cool and dry weather is favorable to the crop.

**Varieties:**

**Cultivation:**

The land should be given a thorough preparatory tillage of 4-6 ploughing and brought to fine tilth. The land after being leveled and pressed with a plank is laid out into small compartments to facilitate irrigation. Seed is sown broadcast or drilled in lines 30 cm. apart. The seed rate
varies from 6 kg to 13 kg. per hectare. Seeds are gently mixed in soil with a broom made of weeds.

Manure and fertilizers:

No manure is usually given, but if need be, 30-35 cartloads of well-rotten farmyard manure should be applied to a hectare of land while preparing.

Intercultural and pruning:

Crop is given 5-8 irrigations till it attains maturity. Generally, first irrigation is done after 20-30 days of sowing, and subsequent irrigation at an interval of 7-10 days. Weeding is done when the crop is one and half month old.

Plantation protection:

Major insects: White grub

Major diseases: Powdery mildew, downy mildew and rhizoctonia wilt.

Schedule:

1. Application of 5% Aldrin or Lindane at 25 kg per hectare at the time of last ploughing during the preparation of land is effective in protecting the crop against white grub
2. To control powdery mildew, spray the crop with 0.2 % wettable sulphur at 15 days interval two or three times.
3. Spray Bavastin at 0.1% to control downy mildew immediately after the appearance of the disease and repeat the spray 15 days later.
4. Seed treatment with Captan 5 g/kg of seeds followed by drenching the soil and spraying the plant with 0.2% Captan solution and repeating the same a week after first application controls the spread of rhizoctonia wilt.

Harvesting and yield:

Crop is ready for harvesting in about three and half to four months from sowing. The spikes are harvested in the month of Mar-Apr when they turn red. Harvesting is done in early morning when a little dew is present which prevents seed shedding. Plants are cut 15cm above the ground with a sickle. That is then thrashed and thrashed material is winnowed, sieved and repeatedly winnowed till the seed is clean.

Yield of seed varies from 500 to 1100 kg. per hectare.

Cost of Cultivation: Approximate cost of cultivation comes around Rs.25,000/- per hectare.
### Inputs:

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Materials</th>
<th>Per acre</th>
<th>Per hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Seeds (kg)</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>Farm Yard Manure (t)</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>Fertilizer (kg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>20</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>P₂O₅</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>K₂O</td>
<td>12</td>
<td>30</td>
</tr>
</tbody>
</table>

### Parts used:

Seeds and seed husk

### Medicinal uses:

Dried seeds and husk are used as emollient, demulcent and laxative, and in the treatment of chronic constipation, amoebic and bacillary dysentery and diarrhea due to irritation of gastric tract. Isapghol preparations are given after colostomy to assist the production of a smooth solid fecal mass. Biological experiments have proved that the mucilage forms a coating over the surface of the ulcer, thereby protecting the injured mucosa from the irritating products of gastrointestinal digestion, but would also prevent access of the motile bacteria which would be entangled in the meshes of the gel.

In indigenous medicine the seeds are considered cooling and diuretic as well, and recommended in febrile conditions and the affections of kidney, bladder and urethra. A decoction of seeds is prescribed in cough and cold, and the crushed seeds made into a poultice are applied to rheumatic and glandular swellings.