

# HOW TO GROW SUGAR BEET IN INDIA . . . . .

## 1. SOIL PREPARATION & SOWING

- Sugar beet can be grown on a **wide range of soils**. But a deep soil (> 1 m) is better adapted to its long tap root. The crop grows well between pH 4 and 9 and tolerates saline soils better than sugar cane
- Soil preparation is **similar to other crops**. But extra care should be taken to have a **thin seedbed**: harrowing is needed after plowing in order to break the clods. The ideal sowing depth is 2.5 cm (maximum 3 cm)
- Optimum plant population is  $\pm 100,000$  plants/ha (42,000 plants/a). This requires an initial sowing density of  **$\pm 1.2$  unit/ha**
- In India sugar beet can be sown **by hand or mechanically, one seed per hole**, either on a **flat bed** (50 cm between rows and 20 cm between plants) or with **ridges** (on a single side of the ridge: 75 cm x 13 cm; on both sides: 75 cm x 26 cm). Ridges are very practical for irrigation
- Tropical sugar beet is monogerm: a single plant comes out of each seed and therefore **thinning is not needed**
- The ideal sowing period in Maharashtra and Karnataka states is **October or November**, but it can be extended until January



Sugar beet can grow on a many different soil types



Ridges sowing is practical for irrigation



Sowing can be done by hand

## 2. FERTILIZATION

- A **single application of mineral NPK** (default rate: 120-75-75 kg/ha) **1 or 2 weeks before sowing is needed**. Nitrogen can also be applied as organic manure earlier in the season. There is no point to give N after canopy closure: the tap root of sugar beet is very efficient and can pump N deep in the ground until late in the season. There is no point to give too much N: it will lower the sugar content and sugar extractability in the root and it will not improve the final yield.



### 3. WEED CONTROL

- Weed control is very important **from sowing until canopy closure** ( $\pm$  1 or 2 months after sowing). It can be done by hand, mechanically or chemically



Weed control is very important and can be done manually



Once emergence is completed, irrigation is needed  $\pm$  every 10 days

### 5. PESTS & DISEASES MANAGEMENT

- Our seeds are coated with plant protection products. In addition, the biopesticide NIPROT - a formulation based on the fungus *Trichoderma viride*, tested by Pest Control India (PCI) and SESVanderHave on sugar beet - can also be applied by the farmer on the seeds right before sowing or added to manure. This package will protect your plants against early attacks from insects and fungi
- Sclerotium root rots are regularly observed in India and can cause severe losses on sugar beet. The biopesticide NIPROT allows an efficient control of this fungus, early and later in the season
- Leaf-eating caterpillars such as spodoptera are common pests in India. Aphids, bugs and leaf minors might also appear once in a while. In many cases our seed coating will offer a proper protection against these pests. Depending on the pressure, extra protection might be needed, for instance with special pheromone traps
- Powdery mildew and other leaf diseases caused by fungi may occur in India after canopy closure. In some cases they may require spraying



Sclerotium root rot is one of the most common and severe disease of sugar beet in India



Leaf-eating caterpillars such as spodoptera are common pests of sugar beet in India



Sugar beet can be harvested after 4, 5 or 6 months

### 4. IRRIGATION

- **Sowing:** If soil temperature is  $> 35^{\circ}\text{C}$ , irrigate directly after or even before sowing, to cool down the soil
- **Until emergence is completed:** it is essential to maintain a good soil moisture
- **After:** irrigation will be needed  $\pm$  every 10 days, depending on the evolution of soil moisture (in any case irrigation should be stopped 1 week before harvest)

### 6. HARVEST

- Sugar beet has **no ripening stage**. If well managed, the crop can continue to grow almost indefinitely. In practice, harvest can be done after 4, 5 or 6 months
- Sugar beet can be **harvested by hand or mechanically**. The **leaves should stay in the field** and **the amount of soil on the root** should be limited as much as possible