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## Chia

Chia was considered the third most important crop of the Aztecs, after maize (Zea mays L.) and beans (Phaseolus spp.), followed by amaranth (Amaranthus cruentus L. and A. hypochondriacus L.).

Chia was an essential crop for the Aztecs, utilizing the seeds in their diet, medicine, art and offerings in religious rituals. It also functioned as currency and tax in the empire.

Chia (Salvia hispanica) is a member of the mint family (Lamiaceae). Chía is a shortday species, however, the cultivar Aztec has been developed for temperate conditions. Heavy rain and winds are not liked, as can cause significant seed fall and lodging. Plant height is 0.70 to 1.70 m.

### **Cultivation instruction**

Climate zone	Europe (n to s), Asia, Africa, South America
Establishment	Prepare an optimal seedbed for the relatively small chia seed
Row spacing	50 cm, 20-25 seeds per meter
Sowing rate	5 kg/ha
Weed control	Weeds can be a problem in early stages until canopy closes.
Harvest	Swathin or/and direct combining
Yield	Ranges from 450 to 1250 kg/ha.

#### Establishment

Seeds will emerge in 1-2 weeks, depending on the temperature. Minimum and maximum growth temperatures are 11 and 36 °C, with an optimum range of 16-26 °C. Chía is a drought tolerant species, requiring only 250 mm precipitation during cultivation.

#### Flowering

Three months after sowing, flowering is reached, with a need of cold nights, not frost, in order to flower. Blue flowers is seen for black chía, and white flowers for white chía.

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#### Harvest

Harvest takes place after ca. 5 months. The harvest indicator is when 80% of the foliage lose color turning from green to brown. If maturation is irregular or to avoid a rain forecast, biostimulation with Madurex (Ethephon) can be applied. When the indicated harvest time is exceeded, the mature seeds start to fall to the ground.

There are two ways to harvest by combine harvester, in both cases it is recommended to harvest at night and about 5 days without precipitation beforehand:

- Direct combining: In case humidity is higher than 8%, it should be dried within 12 hours after harvest, with ventilation.
- Swathing and combining: cut and leave the plants in rows to dry one to two weeks, then lift and thresh

## **Nutritional quality**

Chia is being regarded as a superfood, being a source of Omega-3, antioxidants and fibre for human nutrition.

Several studies have focused on the nutritional potential and as a nutritional supplement for preventing diseases such as cancer, diabetes, cardiovascular diseases, inflammatory disorders, and nerves (Muñoz et al. 2013; Hernández-Pérez et al. 2021).



In addition, its soluble dietary fibre helps to counteract problems of constipation, diverticula, and colon cancer (Alvarado Rupflin 2011).

# USES

Chia has a great potential as a functional food. It is grown in Argentina, Mexico, Bolivia, Paraguay, and Australia. Chia has a high potential to become an essential crop for human consumption worldwide (Valdivia-López and Tecante 2015).

Chia seeds can be used for porridge, baked goods, and for smoothies.





Jacobsen, S-E. 2022. Chia spec. From www.quinoaquality.com, 4 p.

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