



# Saffron: An overview

Saffron (*Crocus sativus L.*) is valued for its flower part which is used as both a spice and a color dye. Saffron production requires a lot of labor and careful management including regular weeding, careful monitoring of soil moisture and meticulous post-harvest handling. Herat is one of the main areas of saffron production in Afghanistan.

## Growth Requirements

Saffron is an adaptable crop that grows best where:

- **Temperatures.** Saffron can tolerate extreme temperatures (-18°C to +40°C), but it prefers a climate with wet winters and hot, dry summers.
- **Moisture.** Saffron grows well with an annual precipitation of 300 mm (12 inches).
- **Soil.** Soils should have moderate to good structure and drainage, high soil organic content and a pH between 7.0-7.5. Sandy loams are best, but a range of soils are possible.

**Notes:** Avoid soils that are 1) prone to water logging as this encourages fungal diseases, and 2) very fertile which promote excessive vegetative growth and reduce product quality.



Saffron Crocus with red stigma. Photo: Wikipedia

## Production Practices

- Plow land in the autumn or winter (20-25 cm deep)
- Level land to improve irrigation and drainage
- Remove weeds, any large pieces of crop residue, and rocks that might limit crop emergence
- Add 4-6 tons of decomposed manure per 0.2 ha (= one jerib = 0.49 acres)
- Plant in spring. There are three primary methods for planting in Afghanistan:
  1. *Ridge planting:* Labor intensive, but improves irrigation and reduces water logging and disease:
    - a. Rows are 30 cm high ridges, 50-75 cm apart
    - b. Corms should be planted 20-25 cm below the ridge top
    - c. Plant between 1,000 kg and 2,600 kg of corms per 0.2 hectares
    - d. Corm distance is flexible, though single file down the ridge
  2. *Flat Bed Planting:* Labor intensive, but has similar benefits to *ridge planting*.
    - a. Broad, flat-topped beds are prepared with multiple rows per bed
    - b. Planting density of 1,000 kg per 0.2 hectares
    - c. Crop spacing of either 20 cm (row distance) x 10cm (plant distance) or 40 cm x 5 cm
    - d. Plant 15 -20 cm deep
  3. *Traditional Method:* Saffron corms are planted in individual holes on a level field. Although not as productive, it is less costly and easy to teach.
    - a. Holes are spaced 25 cm apart throughout the field (edge to edge)
    - b. Holes should have a radius of 20-25 cm
    - c. Planting depth is 20-25 cm
    - d. 3-15 corms are planted per hole



Traditional saffron field in Heart Province. Photo: ICARDA



Ridge method of planting saffron in Europe. Photo: European Saffron Project

## Harvesting

- Harvesting is by hand and the time of day can affect quality. For example, it is better to harvest early in the morning (5-7am) when the weather is cooler as the quality of the saffron flower drops as temperatures rise.

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Primary reference: ICARDA Manual: "Saffron: Afghanistan's Red Gold".

<http://www.icarda.org/Ralfweb/PDFs/SaffronManualForAfghanistan.pdf>; and European Saffron Project:

<http://www.europeansaffron.eu/>

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