



Cotton Production

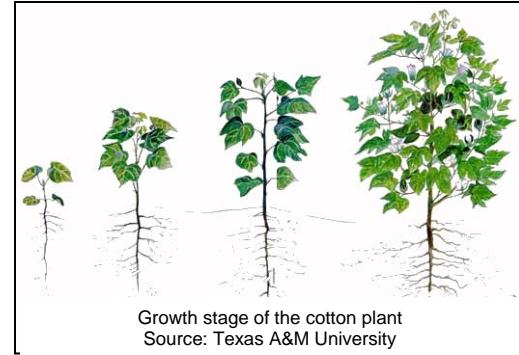
Cotton Background

Cotton was a very important crop in Afghanistan and remains important in some provinces. Although grown commercially as an annual crop, cotton is actually a perennial.

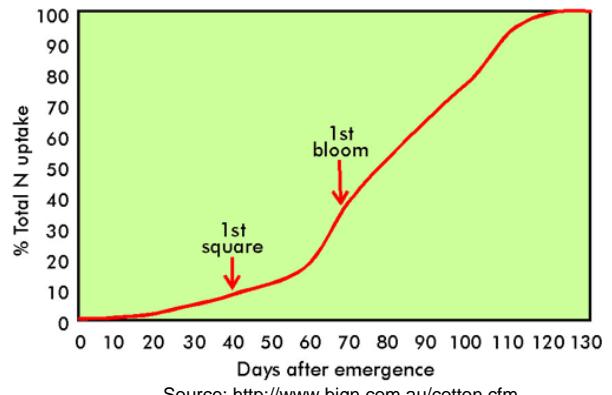
Cotton growth and requirements

Characteristics of cotton:

- **Water use.** Requires 600 to 1200 mm water (1000-1200 mm in drier, higher temperature environments).
- **Drought tolerant.** Cotton is known as a drought tolerant crop – in part because after periods of stress (and due to its indeterminate growth), it will produce new leaves and flowers.
- **Salt tolerant.** Cotton is somewhat salt tolerant (e.g., no crop loss with EC_e up to 7.7).
- **Temperature.** Cotton is very sensitive to frost. Boll development and maturation are optimum at temperatures from 27 to 32°C. At temperatures above 38°C, yields are reduced.
- **Flowering.** The first small buds (or squares) form after 30-35 days of vegetative growth. These squares flower after a further 21 days. The flower (or boll) takes around 6 weeks to mature.



Growth stage of the cotton plant
Source: Texas A&M University



Source: <http://www.bign.com.au/cotton.cfm>

Cotton field management

- **Seed quality.** Seed quality is very important as stand establishment and variety determine yield and Lint quality.
- **Planting.** Planting time is usually after the first rains in spring (when the field is not too wet). Delayed planting can cause yield lose as the boll may develop when temperatures are lower.
- **Early management.** Maximum early season growth - achieved by high stand establishment and good crop nutrition and irrigation - can result in better yields.
- **Crop Nutrition.** Avoid excessive late season nitrogen as this leads to excess leaf growth. Cotton requires around 45kg N, 30 Kg P₂O₅ and 65 Kg K₂O per ton of cotton.
- **Pest management.** Some early damage can stimulate additional flowering. However, later, flowers need to be protected. See UC IPM:
<http://www.ipm.ucdavis.edu/PMG/selectnewpest.cotton.html>
- **Irrigation.** Avoid water stress, especially from the time that the first square is set. This is critical to ensuring good plant structure and fruiting for high yield and quality. Avoiding stress is even more important in early-maturing varieties.
- **Crop rotation.** Crop rotation reduces weed, and disease problems.
- **Harvest.** Cotton in Afghanistan is harvested by hand and so is picked multiple times.
- **Quality.** Plant to avoid wet weather during harvest, as the cotton can become discolored and prices will be lower.

Prepared Hussain Sharifi and Mark Bell, 2012

For more information visit: www.ip.ucdavis.edu

References: Cotton. FAO http://www.fao.org/nr/water/cropinfo_cotton.html; Cotton Production Manual, UC Davis ; Advancing Cotton Education <http://www.cotton.org/tech/ace/index.cfm>

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