

(3b) Crop weather interaction

Cotton, sugarcane and weather



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Cotton

Examples

- Seed germination is optimum under temperature ranged from 18 to 30°C, with minimum of 14°C and maximum of 40°C
- During the vegetative stage a temperature of 20°C to 30°C is required
- Proper bud formation and flowering requires a warm day temperature $>20^{\circ}\text{C}$ and night temperature $> 12^{\circ}\text{C}$, but should not exceed 40 and 27°C respectively
- Temperature between 27 and 32°C are optimum for boll development and maturation;
- Under temperature above 38°C, yield is reduced
- Minimum rainfall requirement is 500 to 650 mm

Sugarcane

Examples

- Sugarcane requires a long, warm growing season with a high incidence of radiation during day time.
- It requires adequate moisture, followed by a dry, sunny and fairly cool nights but frost-free during ripening and harvesting period
- Optimum temperature for sprouting (germination) of stem cuttings is 32 to 38°C
- Mean daily temperatures ranged 22 and 30°C is required for optimum growth.

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Sugarcane (Contd..)

- During active growth stage, minimum temperature requirement is approximately 20°C.
- Relatively low temperature (20 to 10°C) is required at maturity for the enrichment of sucrose in the cane
- Water requirements of sugarcane is 1500 to 2500 mm and it should be evenly distributed over the growing season