(3) Crop weather interaction
a. Sorghum, groundnut, pigeon pea and weather

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Climatic requirement of crop is determined by

- Habitats where the crop species had originated
- Cardinal values of various ecological parameters for optimum growth of plant and completion of various development stages

Sorghum

Examples

- Sorghum, being a C4 plant, which tolerate high temperature and water stress; However, no repose to elevated CO_2
- Minimum temperature should be 8 to 10 ^oC for seed germination, while the optimum is 18 to 21^oC
- Needs 27 to 30 ^oC mean temperature for its optimum growth; tolerates up to 35 to 40 ^oC temperature
- Being a short day plant, flowering is delayed in long day period
- Total water requirement is 350 mm

Groundnut

Examples

- Groundnut is cultivated mainly in two seasons in India *viz*., monsoon or rainy season (*Kharif*; June-October) as well as in post-rainy season (*Rabi*; November to February).
- The optimum temperature of 30^{o}C is required for germination of seeds
- The mean daily temperature for optimum growth is 22 to 28°C
- Low temperature retards growth of plants and lengthens flowering
- Maximum pods can be harvested under soil temperature of 23^{o}C
- Water requirements range from 500 to 700 mm for the total growing period

Pigeonpea

Examples

- Pigeanpea is cultivated mainly in semi-arid climate and; sub-humid climate
- Optimum temperature required for seed germination is 29 - 36°C
- It can be grown under temperature ranged from 26° to 30°C in rainy season (June to September) and 17° to 22°C in the post-rainy (November to February) season
- Flowering gets affected during monsoon seasons
- Cloudy weather reduces pod formation
- Tolerate wide range of rainfall, but prefers > 625 mm in the plains and >2000 mm in elevated areas