

# (3c) Crop weather interaction

## Sugarbeet, Chickpea and weather



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# Sugar beet

## Examples

- Sugar beet is cultivated under irrigated condition normally in sub-tropics
- Seed germination occurs at 5°C, however, the effective minimum temperature is ranged from 7 to 10°C, while optimum is 15-20°C
- The favourable soil temperature for the germination of sugar beet seed is around 15°C.
- Higher temperature during vegetative growth is preferred
- However, high sugar yields are obtained when night temperatures prevails between 15 and 20°C and day temperatures between 20 and 25°C during the latter part of the growing period
- During maturity period temperature above 30°C greatly decreases sugar yield
- Total water requirement is from 550 to 750 mm during growing period

# Chick pea

## Examples

- Chick pea is an important cool season grain legume
- Chick pea is sensitive to heat stress which is grown during post-rainy season under stored soil moisture
- Chickpea seeds germinate at an optimum temperature of about 28-33°C under optimum soil moisture level (80 % ASM)
- The crop may tolerate cool (5 to 10 °C) and frosty nights (0 to -1 °C) during its vegetative stage and even warm (20 to 27°C) and hot (>30°C)
- The optimum temperature for chick pea is 21° to 26.6°C during day time and 17.8° to 21°C during night time.

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## **Chick pea (Contd..)**

### **Examples**

- Temperature above 30 °C, especially 32 to 35 °C during flowering distinctly affect the yield
- The water requirement of chickpea depends on available stored soil moisture.
- The water requirement of chickpea is 110 to 280 mm