

Impacts of frost and high temperature for a range of vegetable crops

Crop	Frost sensitivity	Specific frost-sensitive stage	High temperature sensitivity	Effects of prolonged hot weather
Broccoli	Tolerant	Emergence to 8 weeks	Very sensitive	Very poor quality heads, hollow stem, leafy heads, no heads, bracting.
Brussels sprouts	Tolerant	Emergence	Very sensitive	Cool season crop only
Cauliflower	Moderate tolerance	Emergence to 8 weeks	Very sensitive	Very poor quality curd, hollow stem, leafy heads, no heads, bracting.
Beans	Very sensitive	All stages affected by cool temperatures	Sensitive	Pollination problems, high fibre in pods
Carrots	Tolerant	Emergence to 8 weeks	Sensitive	Reduced yields & low beta carotene content (poor colour). Temperatures < 10°C or > 20°C
Celery	Moderate tolerance	Emergence to 8 weeks	Sensitive	Poor quality stems
Lettuce	Low tolerance	All stages	Sensitive	Bolting & small light heads, tipburn, bolting, loose, puffy heads. >24 °C day and 15 °C night, poor shelf life.
Babyleaf general: chard, Asian greens	Moderate tolerance	All stages	Sensitive	Low yield
Garlic	Tolerant	Emergence to 8 weeks	Sensitive	Cool season crop only
Kohlrabi	Tolerant	Emergence	Sensitive	Poor root quality
Leek	Tolerant	Emergence to 10 weeks	Sensitive	Cool season crop only
Parsnip	Tolerant	Emergence	Sensitive	Poor root quality
Peas	Tolerant	Flowering	Sensitive	Poor pollination
Babyleaf spinach	Moderate tolerance	All stages	Moderate	Low yield
Babyleaf rocket	Moderate tolerance	All stages	Moderate	Low yield
Turnip	Very tolerant	Emergence	Moderate	Poor root quality
Tomato	Very sensitive	All stages affected by cool temperatures.	Moderate	Fruit cracking, sunscald, poor fruit set above 27°C. Blossom-end rot when combined with water stress.
Beetroot	Tolerant	Emergence	Moderate	Poor root quality
Cabbage	Moderate tolerance	Emergence to 8 weeks	Moderate	Loose, light heads
Wombok	Moderate tolerance	Emergence to 8 weeks	Moderate	Loose, light heads

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Onion	Tolerant	Emergence to 10 weeks	Moderate	Bulb splitting
Snow peas	Moderate tolerance	Emergence to 6 weeks and flowering	Moderate	Reduced growth, fruit set
Asparagus	Very tolerant	Dormant in winter	Tolerant	High fibre in stalks, feathering and lateral branch growth. Temperatures > 32°C, if picking frequency is not increased.
Capsicum	Very sensitive	All stages affected by cool temperatures	Tolerant	Reduced pollination and yield, sunburn on fruit.
Parsley	Moderate tolerance	All stages affected by cool temperatures	Tolerant	Tolerant
Potatoes	Low tolerance	Emergence to 8 weeks	Tolerant	Poor tuber set, secondary growth and heat sprouting.
Pumpkins	Very sensitive	All stages affected by cool temperatures	Tolerant	Poor fruit set
Radish	Tolerant	Emergence	Tolerant	Poor root quality
Rockmelon	Very sensitive	All stages affected by cool temperatures	Tolerant	Sunburn
Shallot	Tolerant	Emergence to 10 weeks	Tolerant	Tolerant
Silverbeet	Moderate tolerance	Emergence to 8 weeks	Tolerant	Tolerant
Sweet potatoes	Sensitive	All stages affected by cool temperatures	Tolerant	Tolerant
Cucumber	Very sensitive	All stages affected by cool temperatures	Tolerant	Lack of pollination
Eggplant	Very sensitive	All stages affected by cool temperatures	Tolerant	Sunburn on fruit
Watermelon	Very sensitive	All stages affected by cool temperatures	Tolerant	Sunburn
Zucchini & button squash	Very sensitive	All stages affected by cool temperatures	Tolerant	Poor pollination
Sweet corn	Very sensitive	All stages affected by cool temperatures	Tolerant, affected >35°C	Pollination problems, poor kernel development, poor husk cover, tassellate ear.

Source: Based on QDPI information http://www.daff.qld.gov.au/26_15331.htm with modifications