

## Mango Flowering in the Northern Territory

Production regions found in the Northern Territory (NT) experience flowering between the cool season months of April and August. Harvest will usually start around August with the earliest flowering varieties reaching maturity first in the Darwin region. Harvest in the NT continues into December when the last fruit reaches maturity in the Katherine/Mataranka region.

### Annual production cycle

The annual production cycle in this region is dictated by the arrival of cool-season weather between April and August (Figure 1). Changes to the timing of its arrival will change the timing of flowering. The fruit growth component of the production cycle also relies on temperature as too cool or too hot temperatures can limit fruit growth. Warm temperatures throughout the off-season period (December to March) coincide with monsoonal rainfall which encourages vegetative growth and tree recovery. This is a critical period in the annual cycle of the tree where carbohydrate reserves are accumulated to support future plants functions, such as flowering.

### Climate drivers for flowering

The NT region is unique amongst other mango production regions in Australia as it has consistently warm maximum temperatures which ensure growth all year round. However, as occurrences of cool weather are restricted to a short period, opportunities for flower induction are limited. The onset of cool weather occurs when high pressure systems in southern Australia direct cool dry south-easterly air streams to Northern Australia. This phenomenon can be observed and forecasted in [wind maps](#) of Australia, found on the Bureau of Meteorology website. The timing of arrival of cool weather in the NT can vary from year to year.

After the commencement of the cool period, the daily maximum and minimum temperatures fluctuate slightly. This fluctuation may limit the potential for induction of mango flowers during this time, depending on the specific temperature thresholds for each mango variety.

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## Management practices for the NT

Key management practices that promote mango flower induction in the NT are:

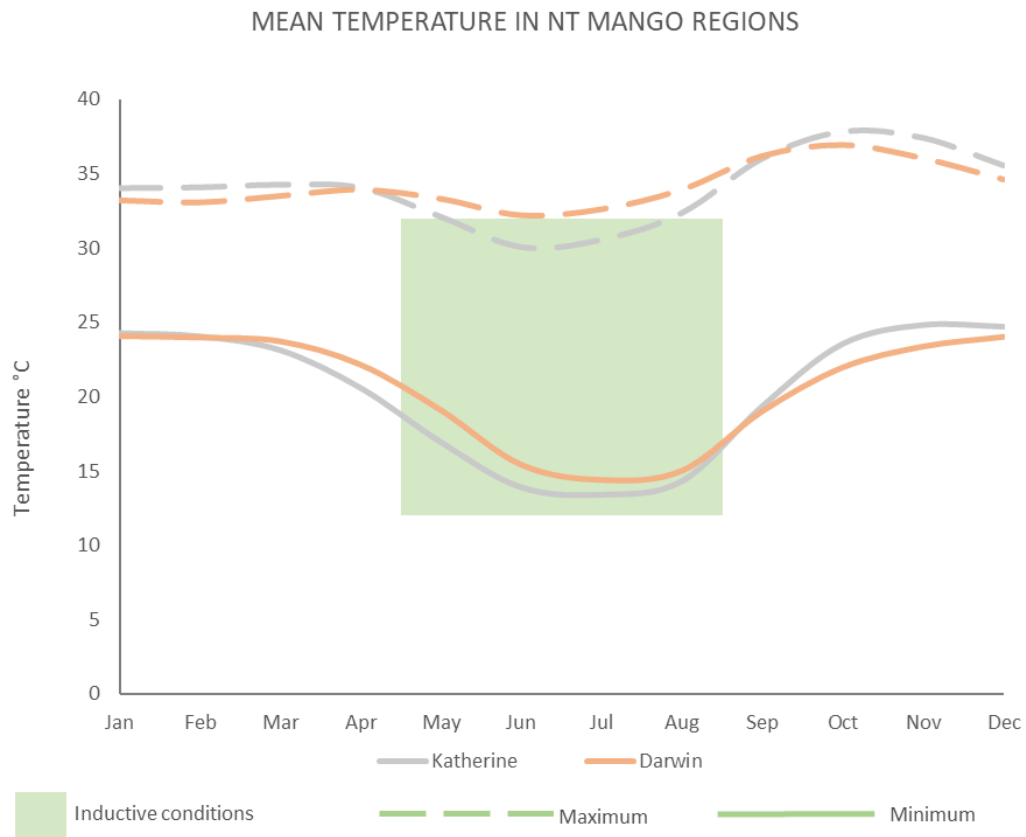
1. Preventing new vegetative growth immediately before flowering by limiting irrigation and preventing the application of nitrogen fertilisers.
2. Foliar applications of boron and potassium nitrate at bud break may increase flower number and vigour.
3. Apply paclobutrozol 4 weeks after harvest or no later than mid-February.

## Key references

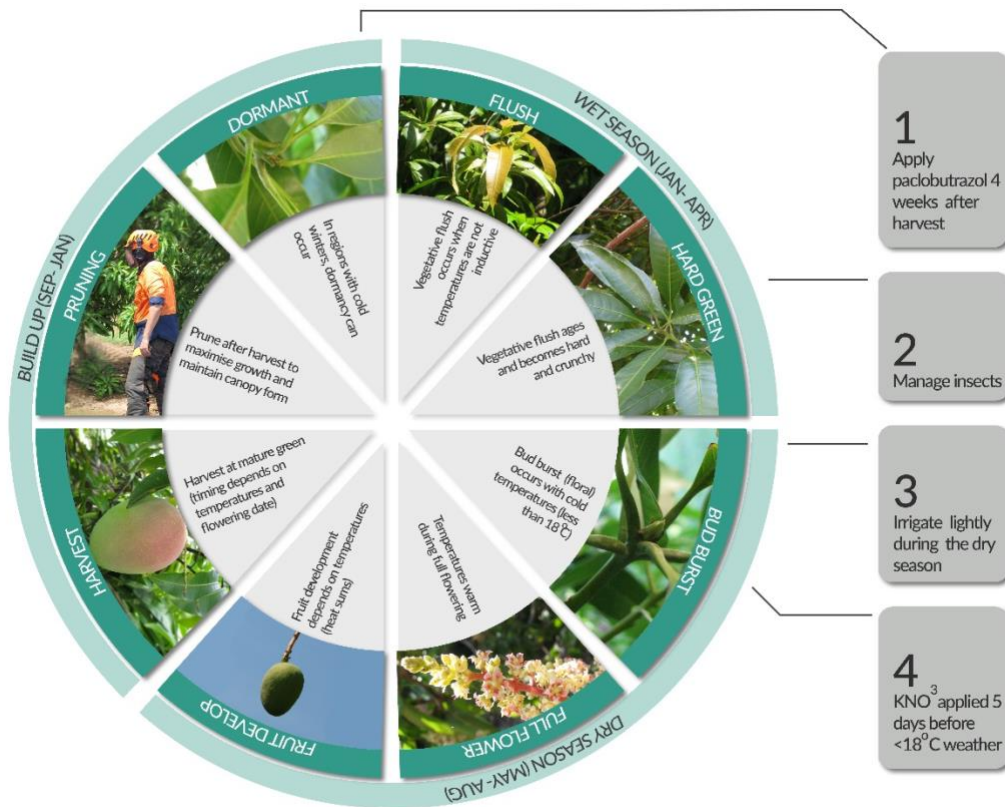
Australian Government Bureau of Meteorology (BOM). 2020. Monthly mean maximum temperature data for several locations. Retrieved from <http://www.bom.gov.au/climate/data/>

[Technical Report, Chapter 7 Regional Climate of Northern Australia. East Arm Wharf Expansion Project \(2011\) Northern Territory Government](#)

## Tables and Figures



**Figure 1. Mean minimum and maximum temperature for each month and floral inductive period for Katherine and Darwin mango production regions. Temperature data is monthly average maximum and minimum for the period of 1996 – 2019. Weather stations Middle Point (Darwin) and Tindal RAAF (Katherine). Data source: Australian Government Bureau of Meteorology (BOM) 2020.**



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**Figure 2. Annual flower management and phenological cycle for mangoes grown in the Northern Territory.**



*Figure 3. Mango flowers*