

## Plant growth regulators

Plant growth regulators (PGRs) can be used in combination with other management practices, such as pruning, to aid in canopy management. The most common PGR used in the mango industry is paclobutrazol (PBZ). PBZ is in the triazole chemical group. Triazoles inhibit the production of gibberellin, a plant hormone responsible for cell elongation. Application of PBZ after post-harvest pruning, results in reduced internode lengths of new shoots, helping to control vegetative vigour. Paclobutrazol applied at this time may also promote greater flowering\* and may also reduce alternate bearing in some mango varieties. The understanding is that reducing vegetative vigour frees up carbohydrate resources that can be allocated to flowers and fruit.



The use of plant growth regulators should be carefully managed and monitored, as undesired outcomes are not uncommon. For example, flower panicles may become excessively compact and require treatment for webworm if paclobutrazol is applied later than recommended.

\*For more information on how paclobutrazol has been used to manipulate flowering in the Top End, see – NTDITT's [factsheet](#) on Flowering and Fruiting in the Top End with Paclobutrazol.

### When to apply

As per the label instructions, application is recommended once per year within four weeks after harvest and no later than mid-February. Prior to and after application, ensure trees are well watered and only apply if the trees are healthy and not under any stress. It is not recommended to treat young trees that have a canopy of less than 3 metres in diameter.

**NOTE:** At the time of publication, according to the APVMA website, products containing paclobutrazol are only registered for use in mango in Queensland, Northern Territory and New South Wales. Always follow all directions on the label.

## How to apply

Apply as per the label instructions as a collar drench mixed with 0.5 to 2.0 litres of water onto the soil/trunk crack line evenly around the base of the trunk.

## Retreatment

Treatment effects can last more than one season and can differ with soil type. For sandy soils, do not retreat until after normal growth has resumed. For clays and red volcanic soils, retreatment can be undertaken each year, however if growth units become progressively more compact, postpone treatment and do not retreat until normal growth has resumed.

## Rates

**Table 1. Application rates for paclobutrazol where active constituent of product is 250 g/L**

Tree Age (years)	Soil type	Rate per tree (mL)
3 – 6	Light sands	8 - 12
	Clay, red volcanic	12 - 16
6+	Light sands	16 - 20
	Clay, red volcanic	20

## Key references

APVMA (2022). APVMA PubCRIS database. <https://portal.apvma.gov.au/pubcris>

Bhatla, & A. Lal, M. (2018). *Plant Physiology, Development and Metabolism* (1st ed. 2018.). Springer Singapore. <https://doi.org/10.1007/978-981-13-2023-1>

Litz, R. E. (1997). *The mango: botany, production, and uses*. New York: CAB International