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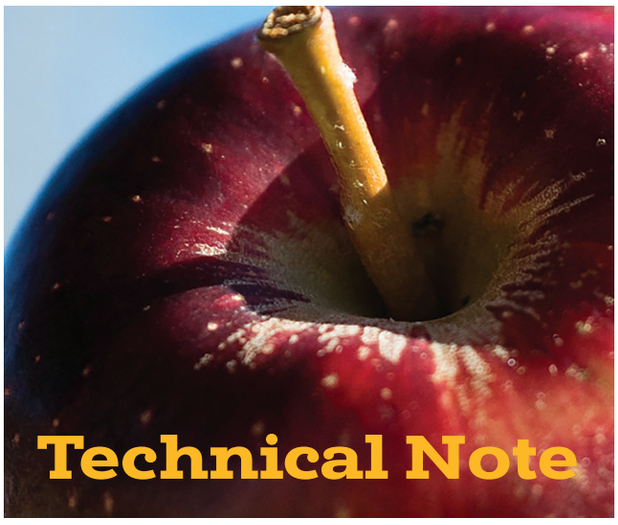

Technical Note

ANABP 01Φ – Thinning to Establish Crop Load

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The ANABP 01Φ crop requires both light access and space for fruit development to maximise the volume of apples meeting the BRAVO™ quality specification. ANABP 01Φ relies on light exposure during the growing season to enhance the fruit colour from 'dark red' to the distinctive 'black/dark burgundy' BRAVO™ colour. A critical first part of this process is winter pruning and tree training. The next challenge is thinning, chemically and/or by hand, to ensure even fruit distribution throughout the canopy.

ANABP 01Φ full bloom, depending on region, is generally mid to late October. 4 weeks post full bloom fruit is set, natural shedding has occurred and targeted crop thinning can continue. Optimum timing for thinning is before fruit reach 30-35mm which is no later than 8 weeks post full bloom. Fruit size increases ~5mm per week from fruit set for the first 8 weeks. The earlier the crop load is reduced through thinning, the better for fruit size, uniformity and quality at harvest. Sun damage to young fruit, first exposed during thinning, will be reduced when thinned and during milder conditions. In addition, early thinning can increase the probability of a good return bloom the following season.

ANABP 01Φ tends to set multiple fruit clusters towards the end of limbs and shoots, with less fruiting points towards the trunk. In situations like a 3D trained systems, best results have been achieved by thinning to doubles at the ends of branches and singles further into the tree. This accommodates the desired outcome of trying to grow the majority of fruit in maximum light. More fruit at the ends also weighs down limbs naturally to assist with tree shape and allowing light penetration. In a 2D or double leader growing system where there is good exposure to light, colour can be attained by leaving more doubles. Thinning to triples has shown that the bottom most fruit is shaded and struggles to meet colour specification. This will compromise the colour and growth of the remaining fruit.

Attention needs to be made to remove any fruit resulting from late set flowers which occur on new green shoots (Rats Tails).

This prolonged flowering can occur for up to 5 weeks post full bloom in some years. The application of a dormancy breaking chemical prior to budburst can be used to compact the flowering period and reduce this late flowering. This fruit reaches maturity as a longer, dense and poor coloured piece of fruit which lacks the flavour and quality of a BRAVO™ apple. Late flowering may be removed through careful applications of chemical thinners. When hand thinning, firstly remove this late set 'Rats Tail' shoot from the apple cluster before choosing the best fruit to retain and thinning.

When thinning to doubles;

- Try to leave 2 fruit with adequate space to grow into. Remove late set, small, misshaped or damaged apples.
- The best 2 fruit may not include the king bloom, unless there is sufficient space for both fruit to grow. By harvest, there is generally no benefit for leaving the king bloom.
- The king bloom can dominate the second fruit for uniform growth and position causing varied size and poor colour development where fruit are touching.
- The king bloom tends to have a thicker stalk which may increase the risk of stem punctures at harvest and packing.
- The king bloom already has a slightly elongated fruit shape. If Cytolin is used to lengthen and soften stalks and give flexibility to the skin, this fruit shape may be stretched too much by harvest.

When thinning to singles within the tree canopy;

- Select the best fruit in the most open position to enhance colour development.
- Leave space for fruit to grow away from limbs and wires and void leaving fruit within 100mm (1 hand width) of the trunk. This will reduce the risk of rubbing, causing injury or blemishes to fruit.

When cropping young trees before they reach maturity at years 5 to 6, allow ~8–10 fruit per cm^2 Trunk Cross-Sectional Area (TCA). This will be ~4 fruit per cm^2 Branch Cross-Sectional Area (BCA) on the first established branches. Remove all fruit from the tops of young trees to promote tree growth and development. Uniform and best overall fruit quality is not expected until at least year 4 when less nutrients are required and applied to promote tree growth.

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FIGURE 1: Late flowering

FIGURE 2: Late fruit set

FIGURE 3: Red fruit to be removed by thinning

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