

YOUNG TREE DEVELOPMENT PROGRAMME

NON-BEARING TREES

INTRODUCTION

Production of apple orchards in the first three years after planting is greatly enhanced by having well developed, well feathered (branched) trees to plant and grow on.

Well feathered trees require attention to overcome the apical dominance of the tree. This can be achieved with some degree of success by heading cuts to rods planted in the orchard, but significant growth, time and production is lost.

Applications of plant growth regulators (PGR's) have been commonly used in the nursery industry and on non-bearing trees in the orchard for many years with great success.

BAPSOL/BAPSOL 100 – 6 BA (CYTOKININ)

6-benzyladenine or 6-Ba is the active ingredient in BAPsol. It is a synthetic Cytokinin commonly used for fruit thinning. It has been widely shown to enhance the number of feathers produced in the nursery and in the orchard on young non-bearing trees by increasing bud break on one year old wood that tends to suffer from blind budding.

BAPsol/BAPsol 100 will produce feathers on new actively growing material. It is not successful at producing feathers on older growth (last season or earlier). Typically results in the nursery situation for Royal Gala on M9 show increases of branch numbers from 1-2 to 8-10 in one season.

BAPsol works by temporarily blocking the production of Auxin by the apical bud thereby allowing the buds up to 10-15 cm below the apical bud to break

APPLICATION TIMING

To enhance bud-break and promote feathering on new season wood, apply BAPsol once 10-15cm of new growth has occurred

PRODUCT RATES FOR BAPSOL

Knapsack/Handgun 200ml per 10 litres water
Air Blast Sprayer 2L per 100 litre water

GROWTH™ – GIBBERELLINS A-3 (GA-3)

Growth is a product used to enhance extension growth in apple trees. Growth applied to the meristem (growing tip) of a shoot promotes apical growth, giving a longer stronger period of shoot extension. Growth will stimulate the growing tips of shoot initials to grow into longer more flexible branches.

APPLICATION TIMING

Growth should be applied once shoot elongation has started in late September, early October. Commencing applications later in the season will give results, but not as effective as those begun earlier. Repeat applications at 14-21 day intervals applied 4-6 times will give best results. Adjust the number of applications to limit or increase the response.

Growth only works on actively growing shoots tips, therefore applications to hardened off, terminated shoots will produce little or no response.

Apply Growth at a dilution rate of 1L/100L of water.

THESE PRODUCTS INCLUDE:

BAPsol™ 20g/litre 6-benzyladenine
BAPsol 100™ 100g/litre 6-benzyladenine
Growth™ 40g/litre Ga-3
Budcyt™ 1g/litre Thidiazuron

Application of the plant growth regulator - Cytokinin to the canopy of young trees can encourage shoot development and enhance the number of feathers produced. Cytokinin is produced in healthy growing root systems and is exported to shoots where it encourages growth and shoot development.

PRODUCT RATES FOR BAPSOL 100

Knapsack/Handgun 40ml per 10 litres water
Air Blast Sprayer 400ml per 100 litre water

APPLICATION

Like all plant growth regulators, BAPsol activity is enhanced when applied in slow drying conditions (early morning) followed by warm weather on the day of application and the days after.

A non-ionic surfactant such as Spray Aid is recommended with all applications to enhance coverage, and most importantly extend absorption time.

Most PGR's work best in slightly acidic solutions (target pH 4.5-5.5). In situations where acidification is required, apply a non-ionic buffering agent such as Buff-it.

BAPsol has a localised effect, so well setup spray equipment is essential to achieve consistent results. Ensure water rates are sufficient to thoroughly cover all branches where bud break/feathering is required.

Ensure water rates are sufficient to thoroughly cover all actively growing shoots.

APPLICATION

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WARNING: May cause a reduction in return bloom the following season.



YOUNG TREE DEVELOPMENT PROGRAMME CONT.

BUDCYT – THIDIAZURON (CYTOKININ)

Budcyt is a PGR used for the promotion of bud growth on blind bud apple wood. Budcyt does not create buds, but rather stimulates those ones present that are blind on young wood.

APPLICATION

Best results are achieved on wood 1-3 years old, so the best time to address blind budding is in the nursery, or 1st year after planting in the orchard.

Budcyt performs better on flatter wood (horizontal position) opposed to upright wood (vertical positions). Blind sites on trunks are the most difficult to promote.

Budcyt has a localised affect, so application should be targeted to blind bud sites using a clean sponge, paint brush, or corrugated roof iron roller. Ensure an even coat is applied to upper and side surfaces of bare wood.

If using Budcyt in conjunction with cincturing to ensure bud break, ensure to apply Budcyt prior and do not cincture until dry.

Apply Budcyt undiluted from 4 weeks before anticipated bud break until bud break has occurred on spur sites. Best results are typically gained from the earlier applications

Ensure sufficient drying time before rain – 4 hours plus.

Best results are achieved when applied in slow drying conditions (early morning) followed by warm weather on the day of application and the days after.



Once bud burst has occurred, it's important to follow up with Ga-3 (Growth) applications at 3-4 week intervals. Growth applications should commence when shoots are roughly 5-10mm in length.

Warning: Do not apply Budcyt to fresh cuts or pruning wounds. Do not mix with surfactants and/or oil.



BAGA FOR BUDBREAK ON NEW PLANTINGS

When planting young trees, paint the buds after planting with a single strong application of BaGa anytime in the period from four weeks prior to and up to anticipated budbreak. This can enhance budbreak, bring forward and compact flowering as well as improving branch development.

APPLICATION TIMING:

Single application during period from 4 weeks prior to and up to bud break.

RATES:

1L BaGa to 2L water applied with paint brush.

SURFACTANTS:

Not required.

COVERAGE:

Good coverage of all buds from height of desired first branch.

