

SPRING PLANTING, GRUB CONTROL AND APPLICATION EQUIPMENT

Canegrowers planning to use suSCon Maxi® in their 2011 spring-planted cane have been requesting information about suitable application equipment.

In research trials and on commercial cane farms, suSCon Maxi - with the active ingredient imidacloprid - has proved to be the most effective canegrub treatment to apply in the plant-cane crop, providing excellent longer-term protection against canegrub, and leading to yield increases over the life of the crop.

suSCon Maxi is currently registered to protect the planted crop against greyback damage for at least two years, and against Childers and Negatoria canegrubs for three years.

This reliable product is the result of long-term, cooperative research and development between Crop Care and BSES Ltd, which continues to further develop controlled release suSCon products.

One aspect of the ongoing R&D program has focussed on refining grower application techniques - how to best place the product into the ground, and how to ensure growers get the 'best bang for their bucks' from suSCon Maxi.

APPLYING suSCon MAXI

Treatment with suSCon Maxi granules at sett level at planting is generally the most effective and convenient method, particularly for two-year life-cycle canegrubs such as Childers and Negatoria grubs (Diagram 1).

Of the open-furrow application options on the suSCon Maxi label (Diagrams 2 & 3), treatment 'at or near first working' is more reliable than 'at fill-in' for medium to shallow planting. However for deep planting (30cm or greater), application at drill fill-in is best, particularly for greyback canegrub.

BSES trials show that either method gives the same result, as long as granules are at least 10cm (4 inches) below the consolidated soil surface.

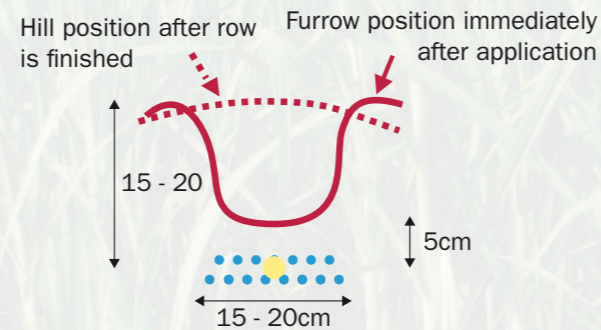


Diagram 1: Application at planting

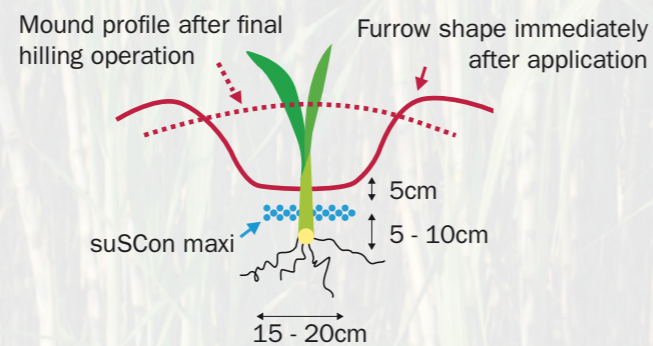


Diagram 2: Application at or near first working

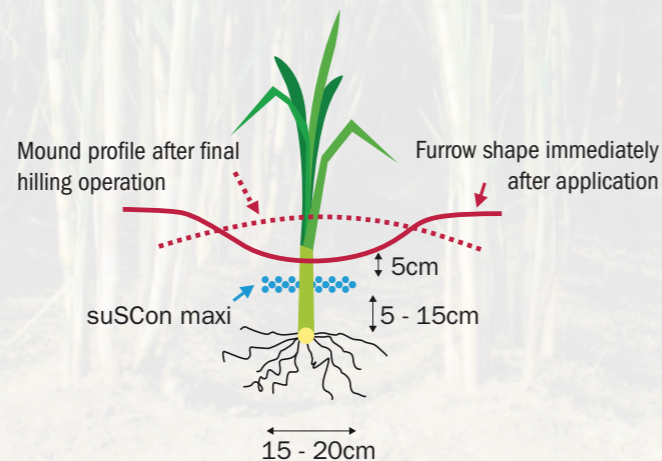
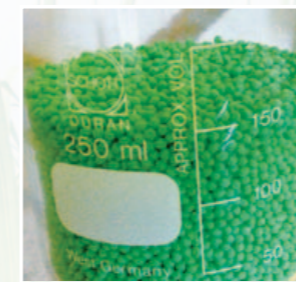


Diagram 3: Application at drill fill-in

BSES senior research scientist Keith Chandler provides the following advice on suitable application equipment for suSCon Maxi.

WHY IS PRECISE METERING OF suSCon MAXI IMPORTANT?



Precise equipment is needed to evenly distribute the small amount of suSCon Maxi used. The volume of the recommended dose of suSCon Maxi is half that of suSCon Blue, so requires greater application precision. The recommended rate is 10-15 kg / ha, or 150-225 g / 100m of row.

Pictured is 150gms of suSCon Maxi - less than a 'cupful' - which needs to be evenly distributed over 100 metres of row (at a rate of 10kg/ha).

IMPORTANT PRINCIPLES OF THE METERING EQUIPMENT

- The rotating shaft of the metering mechanism continuously delivers precisely measured volumes from either separate fluted rollers, or dimples or grooves in the shaft.
- The quantity delivered/ ha travelled is independent of ground-speed.

SOME APPLICATORS WILL NOT APPLY suSCon MAXI EFFECTIVELY

- Applicators that drop granules through a variable sliding aperture are not ideal for applying suSCon Maxi. Consistent application rate with this style of equipment depends on maintaining constant ground-speed; but speed changes near headlands, on slopes, and under different wheel-slip or row-conditions.
- Applicators with fine worm-drive (screw-drive) shafts - formerly used to apply much larger volumes of Mocap, Rugby or BHC - generally cannot consistently regulate the low application volumes of suSCon Maxi. Delivery of granules tends to be erratic, with large dollops followed by lesser amounts or nil. Also, tolerances of the shaft in the housing must be very fine, and the housing well-maintained for the unit to remain effective.

IS ACCURATE APPLICATION OF suSCon MAXI POSSIBLE WITH ANY EXISTING EQUIPMENT?

With minor modification and re-calibration, suSCon Maxi is delivered very efficiently through the same machines that growers have used successfully to apply suSCon Blue over the last 20+ years. The most efficient of these have been Horstine Microband applicators - or locally produced equipment that operates on the same principles.

The main adjustment is to accurately reduce the volume of granule delivered.

- Fit new fluted rollers with smaller or finer scallops than were used to apply suSCon Blue. Modified fluted rollers for these machines are available from Blakey Welding at Ayr (Phone (07) 47837356; admin@blakeywelding.com.au). They are made of 6mm stainless steel; four pieces are needed (two each side).
- Reduce shaft-speed for the applicator to apply the correct amount of granules (150-225g/100m of row or bed).

Likewise it's easy to convert 'generic-copy' machines by modifying in the shaft, and/or reducing shaft-speed.



NOTE: Simply reducing shaft speed with the original fluted rollers will lead to very intermittent application. Fluted rollers (**left**) for supplying suSCon Blue and (**right**) for applying suSCon Maxi - delivering smaller doses and rotating more slowly.

SHOULD GROWERS PURCHASE A HOPPER & METERING DEVICE OR MORE THAN THAT?

Growers or contractors want an applicator that (a) operates on a planter, and/or (b) one or more that can be fitted to a row-cultivator. In both cases the shafts on applicators can be directly coupled to a drive from a shaft on the planter, or to a ground-drive from the cultivator depth-wheel.

A clutch or decoupling mechanism is convenient to quickly turn the machine on or off.

Rate-controllers linked to hydraulic or electric drives can be used to control rates of application. This may be an option if adding a granule applicator to other equipment - whether the controller is linked to a GPS or a ground-speed sensor.

A third option is a separate ground-wheel drive mechanism - a peg-wheel mechanism that trails behind the toolbar. However most growers have found this attachment non-essential and prone to damage.

Good examples of suitable suSCon Maxi application equipment are these two machines owned by Burdekin contractor and equipment-hire operator Joe Linton, Home Hill.



Above: Horstine Microband metering units on a large-scale suSCon Maxi applicator on a dual-purpose toolbar. Important features are the ground drive and depth wheel; straight drop to row; and backward-sloping, row-centred tine to deflect cane shoots and direct the granule band to the row centre. Granules are covered in a separate operation.



Above: Microband granule applicators fitted to a cultivator - designed to apply suSCon Maxi and to fill-in plant cane in one pass. Important features are the stout tine leg to deflect cane shoots and direct the granule band to the row centre; applicators sitting directly over the row to keep granules flowing through the tubes; and discs and tines to fill-in and start hill-up.

WHY HORSTINE MICROBAND APPLICATORS, OR IS THERE AN ALTERNATIVE?

Horstine Microband PDA - Positive Displacement Applicators - have been developed over many years to suit granular products. They are reliable, efficient and widely marketed in the UK and USA, and there is currently no other equipment as suited to suSCon Maxi available in Australia.

Modern options with Horstine equipment that may suit sugarcane farming include a ground-speed-related drive unit; 2-outlet and 3-outlet housings; the standard 35L, or 70L or 150L rectangular hoppers; and an electric clutch.

Horstine equipment information and supply:

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0400 456 131 or (03) 6491 2320

