

Dr Watson's Avoid the ups and downs of golf course spraying

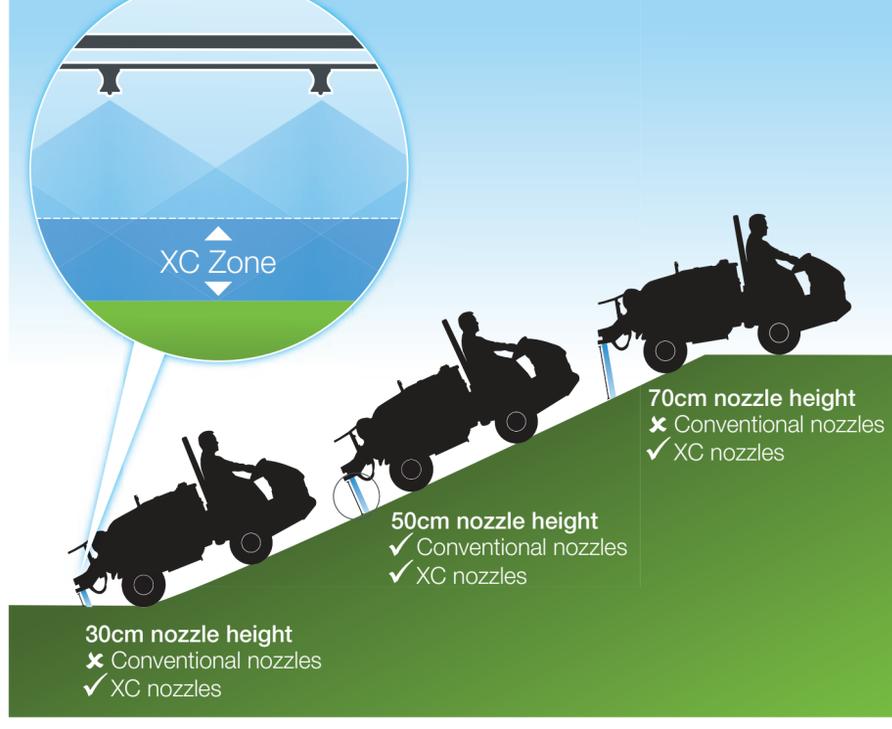


Conventional nozzles of all types are designed to give even spray coverage at a working height of 50cm - which is fine on flat greens surfaces and smooth fairways. Any deviation below the optimum, however, will interfere with the spray pattern and result in inconsistent application across the width of the spray boom.

Reduced nozzle height is frequently encountered when spraying:

- Greens aprons and approaches
- Bunker edges
- MacKenzie greens
- Raised tees
- Fairway undulations

Nozzle Height		
less than 50cm	50cm	Greater than 50cm
Spray pattern inconsistency risks striping	Good coverage	Significantly increased risk of drift



Inconsistent coverage

At a nozzle height of 30cm, using a commercial sprayer set-up with 50cm nozzle spacing, conventional 04 flat fan nozzles have repeatedly been shown to deposit twice as much spray directly under the nozzle, compared to between the nozzles. (demonstrated below)



The result can be severe stripes affecting turf quality or, in extreme cases, turf loss. This has been demonstrated with spray pattern indicator above.

Problems of stripes appearing on turf from uneven application have most frequently been reported with:

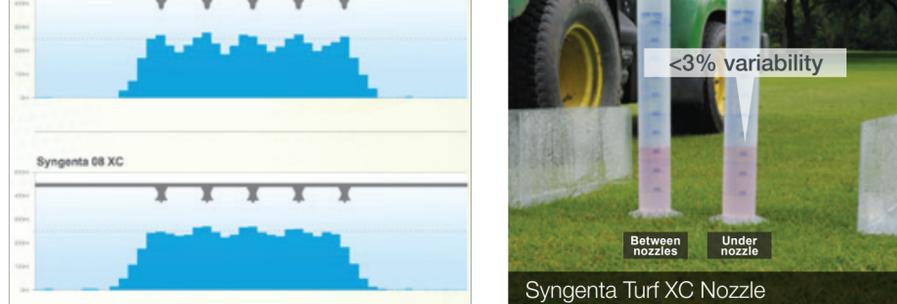
- Liquid fertiliser
- Iron treatments
- Herbicide mixtures
- Spray pattern indicator

However, such uneven application also has implications for the performance of fungicides to minimise the risk of disease infection and for Primo Maxx to maintain even growth regulation.

Syngenta's nozzle research has shown that simply widening the fan pattern of conventional nozzles does not resolve the issue, since it only serves to spread the inconsistent droplet spectrum over a wider cross-section.

XC Nozzle orifice design

The engineered solution designed into the new Syngenta XC (eXtra Coverage) nozzle has been to reshape the orifice, such that it produces an even distribution of more consistent sized droplets across the full spray pattern.



As a result, if the sprayer nozzle height falls to 30cm, the XC Nozzles still deliver a 97% even spray deposition across the full boom, with typically less than 3% difference directly under the nozzle compared to between the nozzles. (above, right)

The XC Nozzles have been shown to be equally consistent at 50cm nozzle tip height and when the spray height rises above 50cm.

Consistent coverage across the spray boom results in:

- No unsightly stripes
- Improved results from all applications
- Even turf health

Contour hugging booms

Sprayer manufacturers have previously attempted to engineer a number of solutions and machine designs in an attempt to maintain consistent boom heights.

Automatic boom height sensors may also have limitations in coping with humps and uneven ground within the width of the boom, and some options can struggle to adjust the boom height sufficiently quickly enough to respond to changes in ground height at faster spraying speeds.

Where automatic boom height adjustment is fitted, check:

- Ground sensors are kept clean
- Response speed is operating correctly
- Boom movement is free enough to enable smooth operation, but not so loose as to exacerbate issues with yaw and oscillation

All contour booms will still be enhanced from fitting with Syngenta XC Nozzles to help overcome limitations, and to benefit from drift reduction, the opportunity to reduce application water volume and to improve coverage.

Where booms are fitted with height adjustable guide-wheels, ensure that the equipment does not interfere with the spray pattern.

Boom overhang

When assessing the design of a sprayer, look at the distance between the rear axle and the boom. The longer the length, the greater the effect that will be seen in boom dip and rise as the sprayer traverses slopes.

Although all sprayers types are affected, there are differences in the level of severity. Typically most self-propelled golf-course and amenity sprayers are relatively compact; utility mounted sprayers are more variable - according to their design and way they have been mounted. Tractor mounted sprayers on a three-point linkage can be most susceptible to boom height movement.

Added advantages of XC Technology

In addition to the key objective of delivering consistent spray coverage, XC Technology brings significant advances in turf spray application techniques including:

Reduce risk of drift and improve spray retention on the leaf. Innovative air incorporation technology incorporates a cushion of air in every droplet.	<ul style="list-style-type: none"> • More available spray days • Produces less than 3% drift susceptible fine droplets, compared to up to 14% drifty droplets from conventional nozzles
Lower water volume capability	<ul style="list-style-type: none"> • Greater sprayer output for more timely application • Less weight carried on greens • Better spray retention on leaf
Angled spray pattern	<ul style="list-style-type: none"> • Counteracts the forward movement of the sprayer to give all round coverage of the leaf. • Better spray retention and improved results
Full product range	<ul style="list-style-type: none"> • XC Technology will be available in 025; 04 and 08 nozzle sizes for greens and fairway foliar applications and soil treatments



Three easy ways to buy your NEW Syngenta XC Nozzles:

- From your Eversis Area Manager
- Syngenta product supplier
- or Call 0800 652 4215

For more information on XC Technology and the principles of spray application, visit the GreenCast website.