

Nozzle selection for shields

By John Rochecouste, Mike Burgis, Graham Betts and Jamie Nicholls

We cannot totally prevent leakage from shields because of the air movement in and around the shield. This air movement is a result of travel speed, wind speed and wind direction.

One of the simplest things we can do to reduce drift outside the shield is to increase the size of the droplets. To better understand the details of spray quality see the booklet *Shields Ain't Shields*, Section 6. Bigger droplets spend less time in the air (lower sedimentation time) and are quicker to hit the target and less likely to move with the lateral air currents.

The problem is that we can only go so far in doing this, because at some point we are going to reduce spray coverage and that can reduce weed control, particularly with contact herbicides.

In *Shields Ain't Shields* we detail the effects of various nozzles. But what growers ask us most often is "what nozzle should I use?" The answer is that it depends on how you intend to use it.

HOW TO CHOOSE A NOZZLE

Although growers would prefer to set up their shield with just one nozzle for all uses, the reality is that conditions vary enormously and different nozzle types are useful to more effectively balance the need between crop safety and weed control.

In choosing a nozzle(s) consider the weed stages you normally spray (for size and type) and the level of urgency or risk management profile you are happy to accept to keep operating. For example, if you like to tackle weeds very small, and you have a large cropping area that you have to keep on top of, you would most likely be going for

TABLE 1: Summary of nozzle characteristics

DG95**	TT110**	AI95 or AI110**
Finer spray quality	→	Coarser spray quality
More prone to have driftable fines	↔	Less prone to driftable fines
Better weed spray coverage	↔	Reduced weed spray coverage

a coarser spray quality option (TT11002 or AI95015E).

This may be at the expense of coverage. This may be acceptable where coverage may not be as critical, but you need to operate in a wider range of conditions. On the other hand, if cotton is a smaller part of the operation and you do not spray as often and the weeds are most likely bigger, you may need finer droplets to give you improved coverage (such as DG95015E or TT110015). Make sure conditions are suitable.

You may also allocate a particular nozzle for a set of conditions. Set the parameters you want and allocate nozzle, pressure and tractor speed to match. 🌱

