



On-farm Seed Treating

EverGol[®] Prime

On-farm Seed Treating using Bayer CropScience Seed Growth Products

Prior to treating, growers should ensure that they have been recommended, or chosen the seed treatment that best fits their needs. Bayer has a large range of seed treatments to choose from including; EverGol[®] Prime, Raxil[®] T, Baytan[®] T, Jockey[®] Stayer[®], Hombre[®] Ultra and Gaucho[®] 600 Red.

To maximise disease defence and to ensure that seed is adequately protected against fungal diseases and insect pests, seed must be treated correctly with uniform coverage and at the appropriate application rate. Seed to be treated should be free of dust and other extraneous materials.

Ensure the equipment is adjusted, calibrated and used correctly, otherwise the coverage and product performance may be adversely affected.

Equipment Required

Augers are a popular choice for on-farm seed treatment.

Product is fed into the auger from a simple pumping unit (generally 12 or 240 volt). Most major spraying equipment companies provide 12 volt pump kits or inoculators that are suitable.

Importantly, these units are equipped with pressure gauges and regulating/bypass valves, which allow for precise control of pressure and flow - both of which are essential for accurate application.

Positioning the Applicator Pump

If possible, elevate the pump unit above the nozzles and shorten the delivery line to what is necessary for your situation. This will allow a smooth flow of seed treatment to the nozzles and maintain consistent pressure. Always ensure an on/off flow tap is easily accessible in the delivery line to the nozzles, so you can control the application of the seed treatment. Switch the seed treatment unit on before starting the auger. With the tap in the off position, the bypass should be activated and the seed treatment solution agitated. This helps mix the seed treatment and prime the pump and lines.

Nozzle Type

Hollow (figure 1) or solid cone nozzles are the best nozzles to use because they work at low volumes, produce fine droplets, are less prone to blockage and generally help to provide better coverage than flat fan nozzles. Consult the equipment manufacturer's guide for further details.

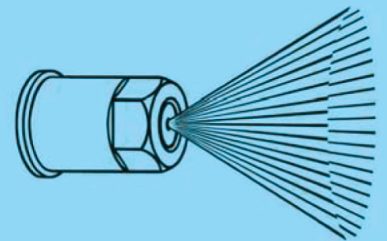
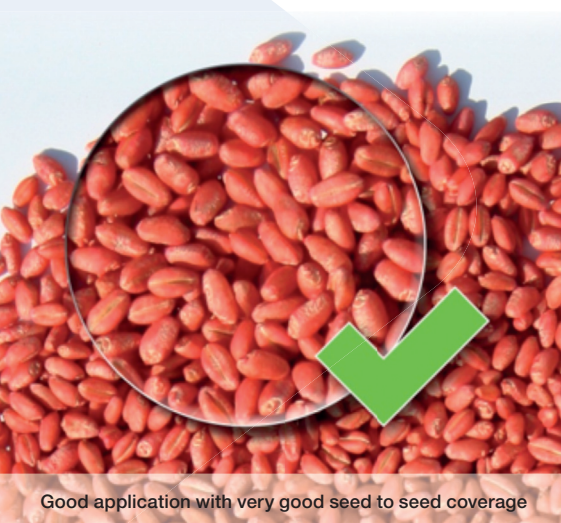


Fig 1. Hollow cone nozzle



Good application with very good seed to seed coverage



Poorly applied seed treatment - patchy and uneven

Seed Treatment

On-farm Seed Treating

What's the best nozzle set-up on the auger?

For maximum coverage, two nozzles should be used, set flush or slightly into the barrel of the auger, as shown in figure 2. Alternatively, nozzles can be set up closer to the hopper where the grain enters at the base of the auger however this is generally regarded as less effective.

Filtration is important

If the water or chemical lines contain any foreign particles, in-line filtration or nozzle filters may become blocked. The relative viscosity of some seed treatments may exacerbate potential blockages. Ensure that in-line filtration is adequate and that all filters are cleaned regularly, otherwise the application rate may be incorrect. Only slotted filters should be used.

How do I calibrate my equipment?

Calibration is essential to ensure the correct amount of chemical is applied to the seed; there are four easy steps that should be taken to ensure this occurs:

1. Run grain through the auger. Once the flow rate is constant, collect grain for a known time (**T**, seconds).
2. Weigh the grain (**W**, kg). Collect 20 to 30 kg of seed to improve accuracy.
3. Grain flow rate: **W** (kg)/**T** (seconds) X 3.6 (conversion factor) = tonnes/hour
4. Set up the spray unit and calibrate with water, adjusting flow rate by varying the output pressure, ensuring that the operating pressure remains within the recommended range. A final calibration should then be completed when using the spray mix, because different chemicals can have varying formulation viscosities, which would alter the flow rate through the pump.



Figure 2: Nozzle placement is important for effective coverage

Use this table to determine the target spray output (L/min).

| Table 1: Estimated grain flow rates and required output targets for various spray mix rates/100 kg seed. | | | | | |
|--|--------|-------------------------------------|--------------------|--------------------|--------------------|
| Grain flow rate | | Total spray output (L/min) required | | | |
| Tonnes/h | kg/min | 300 mL/100 kg seed | 400 mL/100 kg seed | 500 mL/100 kg seed | 600 mL/100 kg seed |
| 1 | 17 | 0.05 L | 0.067 L | 0.083 L | 0.10 L |
| 5 | 83 | 0.25 L | 0.33 L | 0.42 L | 0.50 L |
| 10 | 167 | 0.50 L | 0.67 L | 0.84 L | 1.00 L |
| 15 | 250 | 0.75 L | 1.00 L | 1.25 L | 1.50 L |
| 20 | 333 | 1.00 L | 1.33 L | 1.66 L | 2.00 L |

Operating the auger

A constant flow rate of product and seed through the system will help achieve thorough and uniform coverage. Running the auger at half to three-quarters of its normal operating speed produces the best results. Ensure that the mixture in the spray vat is lightly agitated during spraying, and do not leave the mixture standing without agitation for any more than a few hours.

Secondary mixing of grain is an important part of effective seed treatment, which occurs as the grain moves up the auger and into storage. This can often account for up to 50% of the application process. The auger should be of sufficient length to allow secondary mixing to occur (minimum 2 metres).

Other important points

1. Always read the label before using the product and adhere to the recommended application and dilution rates.
2. Stir or shake container thoroughly before use.
3. When using and handling seed treatment products or treated grain ensure the correct safety equipment is worn, and always wash your hands when finished.
4. Ensure all used drums are triple rinsed and add rinsings to the mixing tank and return them to a drumMUSTER center.
5. Further information on products can be found on the relevant SDS sheets and label. Copies may be obtained from your local reseller or www.bayercropscience.com.au.