

## Variable rate prescriptions

**B**elt-Wide Agriculture is a Wee Waa based company providing variable rate prescriptions. The company began last season providing variable rate cotton defoliation in the Namoi Valley. One year on and Belt-Wide is acquiring images and writing variable rate prescriptions over three valleys.

“We have over 35 farms, six agronomists and consultants using the variable rate technology for plant growth regulators and defoliant applications,” says Edward Tomlinson of Belt-Wide Agriculture.

### Advantages of variable rate

Variable rate technology allows products to be applied exactly where they are needed in the field, at the rates best suited to each management zone. This converts to saving on input costs as well as improvement of overall yield and a more consistent crop.

Variable rate plant growth regulators not only minimise input costs, but the big saving is in yield potential. Instead of applying blanket rates across the paddock, different plant maturity levels can receive a different application rate. This improves yield potential in all parts of the field.

Variable rate defoliation can reduce costs and get pickers into the paddock earlier. Through VRT you can apply more defoliants to the less mature areas, while minimising defoliants on the more mature cotton. This effectively evens out the defoliation, allows picking up to seven days earlier and can save growers up to \$20 per hectare.

### Belt-Wide images and prescriptions

Images in different wave-lengths are taken from an aeroplane at 12,000 feet. These images are then processed using InTime algorithms to generate ‘scout maps’ with a two metre ground resolution per pixel. The scout map is available 24 hours after image acquisition.

The scout maps highlight the differences within the field, putting them into seven different zones. These zones are determined through the level of biomass (plant vegetation). From this scout map, a prescription can be generated allowing different rates to be applied to different zones. Once the image is taken, any amount of prescriptions can be generated from the scout map.

### Creating the prescription

Prescriptions are generated automatically from the InTime website in minutes. The agronomist or farmer uses the scout map to ‘ground truth’ the paddock and determine application rates. Once the application rates are known, it’s a simple matter of logging into the website, selecting the paddock and entering the application rates for each zone. The prescription is then generated for the applicator.

### Variable rate application

VRT can be applied via ground or air. Many aerial applicators already have the equipment required to do VRT applications. On the other hand, most ground rigs

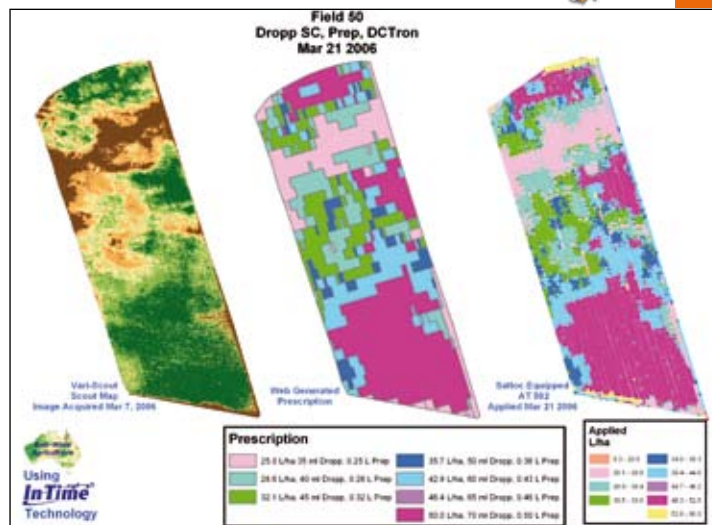
	Treatment 1	Treatment 2	Treatment 3
Treatment Type	Harvest Aid	Harvest Aid	Additive
Treatment	Dropp SC	Prep	DCTron
App Units	Litres	Litres	Litres
Price/Lit	\$0.00	\$0.00	\$0.00
Class	<input type="radio"/> Application Rate (L/ha)	<input type="radio"/> Treatment Rate (ml/ha)	<input type="radio"/> Treatment Rate (L/ha)
1			
2			
3			
4			
5			
6			
7			
Concentration			

Example of creating the prescription and entering rates on the InTime website.

don’t have the equipment to do VRT, but with low costs can add a third party device that will enable VRT. Currently there are four aerial operators and four ground rig operators set up in the three valleys using Belt-Wide and InTime VRT prescriptions.

### End result

The end result is that you can put the correct rate of treatment on each zone. Precision agriculture is about being site specific, so we are working from the smallest site possible when creating the prescription. As the prescription is generated automatically it isn’t costing extra time or money to be more precise and the more precise the application is, the greater the benefits and savings to the grower.



An example of an aerial VRT application supplied by Belt-Wide and InTime. To the left is the scout map, in the middle is the VRT prescription to be applied and on the right is the application or verification map of how the aerial VRT controller applied the prescription (using a Satloc VRT Equipped Air Tractor 502).