

Growing Western Canola Case Study (Medium Rainfall) 2005

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Location

Wittenoom Hills is in the Esperance Shire, approximately 60km North East of Esperance

Rainfall: **400mm** - Relatively mild climate with favourable spring finishes most years. However finishes can be influenced by a Goldfields weather pattern during late September/October, which can result in very unpredictable hot weather, often with high winds that can finish crops very rapidly.

Area sown to Canola in 2005: **480 hectares**

Average yield last 5 years: **1.4t/ha**

Target ave yield: **1.8t/ha**



Ashley Stewart harvesting Clearfield 44C73

History of Growing Canola:

Our first attempt at growing canola was in 1997. We planted 110ha of Narendra, a non TT variety at 5kg/ha. The crop was successful, yielding 1.5t/ha. Today we grow 500 to 600ha of TT and Clearfield varieties.

Soils:

Most of our soil types consist of loams with some deeper sands. Our loam soils have a pH of 6 or higher in the top soil, increasing in the sub soil to well over 8. The deeper sands have been clayed where non wetting was a problem. Claying has fixed the non wetting problem as well as providing a liming effect due to the alkaline clay used for spreading.

Yield and Rotations:

Canola is grown in a continuous cropping rotation. In the past canola has typically followed a cereal crop; the challenges in this situation are to adequately meet the crops nitrogen requirements without going over the top.

Yields targeted are 1.5t/ha. Nutrients are applied to meet this target yield, however if we feel the season has better potential we readily apply another strategic application of Nitrogen (or any other yield limiting nutrient). Our five year average is currently sitting at 1.4t/ha, this average includes the high average yields of 2003 of over 2t/ha and the low average yields of 2002 of 0.5t/ha.

We are presently changing our rotation to growing canola after a legume crop, predominately field peas. The three main reasons behind this are to provide:

1. Two break crops in a row to lower cereal root disease pathogens.
2. 100% ryegrass control in two successive years.
3. The obvious rotational benefits of organic nitrogen fixed by the previous legume crop, that often results in the highest yielding canola.

A typical rotation in the past consisted of Legume/Wheat/Canola/Barley, whereas going forward the rotation may consist of Legume/Canola/Wheat/Wheat/Barley. Our main aim with rotation is to keep cereals at 60% of the area sown, as cereals are still our most profitable crops. If we can achieve a long term average of 1.8t/ha with canola, this may then be one of our more profitable crops.

2005 Program: *"The perfect break followed by a soft finish"*

In 2005 we sowed the TT varieties Trigold and Tornado and the Clearfield variety 44C73. We also tested varieties for Oilseeds WA as part of their annual variety testing program (*Ed note: Thanks Ashley*).

In 2005 we had the perfect break, after a dry summer the opening rains of 73mm falling from March 29th - April 3rd. June was a very wet month with well over 120mm. A dry July saved us from any bad waterlogging problems. August, September and October saw average rainfall coupled with cool mild conditions that allowed the canola to flower and fill seed in ideal conditions.

Seeding of 44C73 and Tornado commenced on April 17th. Trigold was sown several days later, with the entire canola sowing program well wrapped up by ANZAC day. Seed was sown at 2.9kg/ha into ideal moisture conditions using a DBS machine. Conditions dried very quickly after sowing with a run of 30 degree days, this however did not retard establishment with a very good germination percentage achieved. In fact, plant numbers were well over 70-80m² with a 2.9kg/ha sowing rate. We are now considering reducing our seeding rate even further. This year has once again highlighted that a plant population of 30-40m² always results in higher yields. We are also keen to lower our seeding rates in the future, as we will be purchasing more expensive GM or Hybrid seed and may not be able to afford the luxury of high seeding rates.

Canola is swathed using a New Holland [CR970](#) Header. Whilst this is doing an adequate job of making swaths, it has its limitations, especially in heavy crops. Next year we will definitely be looking to use an SP swather, which will make better swaths with less bunching and should improve picking up of rows. An SP swather will also provide us with an opportunity to tow a spray cart, allowing us to crop top escapee ryegrass with Paraquat as we swath (providing another tool for reducing ryegrass seed set).

Canola yields for 2005 have averaged 1.6t/ha, with Trigoild yielding between 1.5 to 1.7t/ha depending on the paddock. Tornado yielded 1.6t/ha, this variety was a little disappointing in its yield as it looked much better than 1.6t/ha. As in the previous 5 years the Clearfield variety 44C73 was the highest yielding variety at 1.9t/ha. The Clearfield varieties 44C73 and Surpass 603 on average have yielded at least 100kg/ha, better than any TT variety over the last five years.

Nutrition:

Soil tests are carried out by CSBP with the interpretation of results conducted using NUlogic models, in conjunction with our independent agronomist. Plant tissue testing is undertaken at 6-8 weeks after sowing to assess the nutrient status of the crop. Corrective action can then be undertaken if any deficiencies are found.

One of the key nutrients we have been concentrating on over recent years is Potassium. We have adopted an approach of applying maintenance rates of Potassium across our cropping program, to try to at least supply as much Potassium as the crop is likely to remove in grain exported from the paddock.

Nutrients applied include:

- Super Phos @ 85kg/ha topdressed in January.
- Agstar E @ 45kg/ha + MacroPro Extra @ 85kg/ha banded below seed.
- Flexi N @ 50L/ha banded below seed.
- Split applications of Flexi N:
 1. Flexi N @ 80L/ha @ 7-8 weeks after sowing.
 2. Flexi N @ 50L/ha @ 10-11 weeks after sowing

TT Canola:

Knockdown – Glyphosate 800mL/ha + Lontrel 20g/ha + Hammer 25mL/ha + Fastac 300mL/ha + SOA 1% + Wetter 0.2%

PSPE – Atrazine 2kg/ha

Early Post Emergent – Select 70mL/ha + Targa 250mL/ha + Hasten oil 0.5%

Clearfield Canola:

Knockdown – Same as TT canola.

Early Post Emergent - OnDuty 20g/ha + Lontrel 30g/ha + Select 70mL/ha + Targa 250mL/ha + Hasten 0.5%

Cost of Production:

Fertiliser \$140/ha

Chemical \$60/ha

Operations \$90/ha (Seeding, spraying, spreading, swath and harvesting)

Total cost \$290/ha ~ approximates to around 0.8t/ha of canola (at \$350/t).

How do we do it?

- Spraying summer weeds is a priority to maintain high levels of stored soil moisture.
- Grading seed very hard to obtain to biggest seed possible.
- Applying Maxim XL seed dressing – we had an excellent result with Maxim XL in a trial last season.
- Sowing at the earliest opportunity from mid April onwards.
- Monitoring crops very closely during the first 4-6 weeks after sowing, mainly for insects such as Veggie Weevil, Balaustium mite and Bryobia mite.
- Acting quickly when problem identified.
- Being flexible with Nitrogen application; top up levels as the seasons yield potential unfolds.
- Growing TT canola in our system to control Silvergrass; otherwise Clearfield canola would be a better option due to consistently higher yields.
- Keeping seeding rates down to manage costs and plant density, the DBS is an excellent machine for establishing canola with seeding rates of 2 to 2.5kg/ha.
- Retaining all the stubble on all cropping paddocks.
- Spraying for aphids at early flowering if they are causing economic levels of damage.
- Monitoring for budworm and DBM in spring and spraying if required.
- Harvesting as early as possible to avoid wind damage of swathes.
- Assessing new varieties on our own farm to evaluate how they perform in our environment.

Where are we headed?

Ideally we would like to achieve a long term average of 1.8t/ha, which we believe is possible.

GM canola and TT or Clearfield Hybrids, along with being able to encourage more root growth into the subsoil to extract currently under utilised soil moisture, will probably deliver our next biggest gain.

We would also like to achieve earlier crop establishment by utilising RTK 2cm accuracy auto steering. With this system we are confident of being able to sow directly into last season's row. We continually notice how last years rows wet up very quickly, even after minimal rainfall. We are keen to be able to capitalise on this to utilise any early sowing opportunity. Sowing into last years Field Pea rows will allow us to do this without any stubble handling problems with a DBS machine.