



Optimising
Irrigated Grains

IRRIGATED GRAINS TRIAL 2020: CANOLA AGRONOMY



TRIAL OPERATIONS

- April 23rd** Trial dry sown
April 24th Trial watered up (flood only)
June 4th Clethodim (500ml/ha)
June 18th Lontrel Adv (125ml/ha)
July 1st Topdress N 55 kg N/ha
August 6th Topdress N Flood 80kg N/ha, overhead 40kg N/ha reflecting the different soil N. N application was sufficient for 5 t/ha

Spring Irrigation

Flood Irrigation

September 8th 0.9 MI/ha

Sprinkler Irrigation

September 1st 25 mm

September 8th 15 mm

OPTIMUM PLANT POPULATIONS OF CANOLA GROWN UNDER OVERHEAD AND FLOOD IRRIGATION

These trials evaluate the plant population of hybrid TT (Triazine tolerant) and Roundup Ready hybrid grown at different plant populations under flood and overhead irrigation.

The individual objectives are as follows:

- Evaluating the influence of three different plant populations on dry matter production and grain yield under flood and overhead irrigation.
- To compare the economics of canola grown under flood versus overhead irrigation sown at the same time.
- To examine the influence of plant population on disease levels and canopy structure under two different systems of irrigation with non-limiting nutrition and full crop protection.

VARIETY AND POPULATION

Variety	Sowing Rates (kg/ha)			
	20 seeds/m ²	40 seeds/m ²	60 seeds/m ²	80 seeds/m ²
45Y28 (RR)	0.96	1.92	2.87	3.83
Hyttec Trophy (TT)	0.87	1.74	2.61	3.48

Notes:

With high levels of N post sowing, the '40 seeds/m²', or approximately 30 plants/m² treatments have effectively caught up to the higher rates in both canopy (NDVI measurement) and biomass by green bud stage.

Biomass has been greater in the flood irrigated trial. Initially the RR variety showed greater vigour but the TT closed the gap, particularly in the flood irrigated trial.





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- April 23rd** Trial dry sown with 45Y28 targeting 40 plants/m²
- April 24th** Trial watered up
- June 4th** Clethodim (500ml/ha)
- June 18th** Lontrel Adv (125ml/ha)
- June 19th** '6 leaf' treatment topdressed
- August 5th** 'Green bud' treatment topdressed. N applied was 0 through to 320 kg N/ha on top of starting N of 125 kg N/ha post-sowing

Spring Irrigation

September 8th 0.9 MI/ha

NITROGEN USE EFFICIENCY - OPTIMUM RATES FOR THE NITROGEN (N) APPLIED IN IRRIGATED CROPS OF CANOLA

This trial is to evaluate nitrogen use efficiency in canola under different rates of applied N fertiliser on flood irrigation.

The individual objectives are as follows:

- Evaluating nitrogen use efficiency under different N rates in canola (0 – 320kg N/ha total N).
- Influence of different rates of urea N fertiliser (46%N) on yield and oilseed quality applied as split applications between 6 leaf and green bud.
- Influence of N rate on harvest index (HI) in canola
- Evaluating the influence of N rate on crop canopy structure and dry matter at the early flower stage. Testing the hypothesis that to maximize yield the crop needs to have 7t/ha dry matter by the early flower stage (10% flower).

Notes:

From the first canopy assessments via NDVI measurements, it has been difficult to identify the nil treatments due to the relatively high starting N. Even at mid-flowering, low or high N plots are difficult to distinguish.



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TRIAL OPERATIONS

- April 23rd** Trial dry sown with 45Y28 targeting 40 plants/m²
- April 24th** Trial watered up
- June 4th** Clethodim (500ml/ha)
- June 18th** Lontrel Adv (125 ml/ha)
- June 19th** '6 leaf' treatment topdressed
- August 5th** 'Green bud' treatment topdressed
- August 19th** 'Early flowering' treatment topdressed. N applied was 0 to 240 kg N/ha on top of starting N of 210kg N/ha post-sowing
- Spring Irrigation**
- September 8th** 0.9 Ml/ha

NITROGEN USE EFFICIENCY - OPTIMUM RATES FOR THE NITROGEN (N) APPLIED IN IRRIGATED CROPS OF CANOLA

This trial will evaluate nitrogen use efficiency in canola under different timings of applied N fertiliser under flood irrigation.

The individual objectives are as follows:

- Evaluating nitrogen use efficiency under different N timings in durum canola (0 – 240kg N/ha total N).
- Influence of different rates of urea N fertiliser (46%N) on yield and oilseed quality applied as split applications at combinations of the following timings - incorporated by sowing, 6 leaf, green bus and early flowering.
- Influence of N timing on harvest index (HI) in canola
- Evaluating the influence of N timing on crop canopy structure and dry matter at the early flower stage. Testing the hypothesis that to maximize yield the crop needs to have 7t/ha dry matter by the early flower stage (10% flower).

Notes:

From the first canopy assessments via NDVI measurements, it has been difficult to identify the nil treatments due to the high starting N. Even at mid-flowering, low or high N plots are difficult to distinguish.

