

## Time of sowing in wheat

This trial was funded by GRDC

### Key findings

- Frame was the highest yielding variety when sown on the 1<sup>st</sup> May.
- As sowing date was delayed the early maturing variety Axe out yielded later maturing varieties Gladius and Frame.

### Why do the trial?

To compare the effectiveness of early sowing using a range of wheat varieties with different varietal maturities.

### How was it done?

<b>Plot size</b>	1.5m x 10m	<b>Fertiliser</b>	DAP @ 75kg/ha + 2% Zn
<b>Seeding date</b>	TOS 1 1 <sup>st</sup> May 2008 TOS 2 22 <sup>th</sup> May 2008 TOS 3 5 <sup>th</sup> June 2008 TOS 4 19 <sup>th</sup> June 2008		

The trial was a randomised complete block design with 3 replicates, 3 varieties and 4 times of sowing.

The varieties were Axe, early maturing, Gladius, early-mid maturing and Frame, mid-late maturing.

Plot edge rows were removed prior to harvest.

All plots were assessed for grain yield, protein, test weight, grain weight and screenings with a 2.0mm screen.

### Results

The highest yielding treatment in this trial was from the mid to late maturing variety Frame, sown at the early time of sowing, on the 1<sup>st</sup> May. The grain yield of Frame rapidly decreased with later sowing such that by the 5<sup>th</sup> June (TOS 3) it produced the lowest yield. By the 19<sup>th</sup> June (TOS 4) Frame and Gladius were significantly lower yielding compared to Axe.

The early maturing variety Axe had a significant yield increase with a delay of sowing by 21 days to the 22<sup>nd</sup> May (TOS 2) (Figure 1). There were 2 significant frost events at Hart in 2008,

these occurred on the 22<sup>nd</sup> and 23<sup>rd</sup> of August. It is likely that the Axe sown on the 1<sup>st</sup> May was affected by these events and suffered significant yield loss.

On the 5<sup>th</sup> June (TOS 3) there was no difference between Axe or Gladius, the earliest maturing varieties, while Frame had the lowest yield.

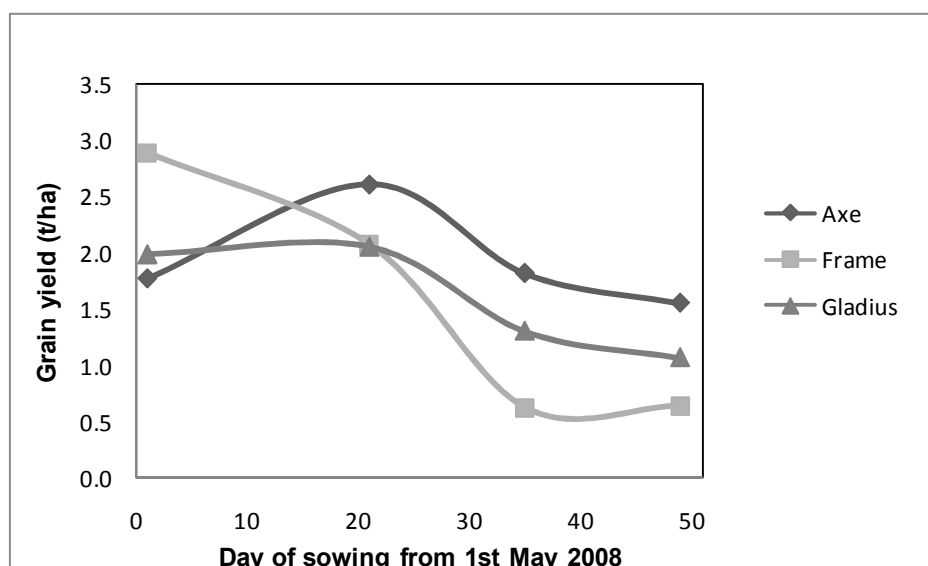


Figure 1: Grain yields of Axe, Frame, Gladius and day of sowing at the Hart field site in 2008, LSD (0.05) variety = 0.24, time of sowing = 0.58, variety\*time of sowing = 0.65

For the last 2 times of sowing the early maturing variety Axe was the highest yielding variety followed by the early-mid variety Gladius and then the mid-late variety Frame.

As time of sowing was delayed protein increased while screenings and grain weight decreased across all varieties (Table 2).

Table 2: Grain Protein (%), screenings (%) and grain weight (mg/grain) and time of sowing averaged across all varieties.

Time of sowing	Protein (%)	Screenings (%)	Grain weight (mg)
1st May	14.3	2	35
22nd May	14.9	2	34
5th June	16.4	5	30
19th June	17.9	4	30
LSD (0.05)	1.0	2	3

The grain protein values for Axe, Frame and Gladius were 15.1%, 16.3% and 16.2% respectively. Axe produced the lowest protein independent of sowing date.

Screenings for all varieties and sowing dates were 5% or less. Individual grain weights were significantly higher for TOS 1 and TOS 2.

Over the past few seasons timely seeding has had a large influence on grain yields. Results from this trial show that for early maturing varieties sowing dry or on the opening rains will not always produce maximum yields, even in years of below average growing season rainfall such as in 2008.

Varietal maturity is important and can have a significant impact on grain yields, particularly for crops sown after mid May in marginal seasons.

The Hart wheat variety comparison was sown 7 days after TOS 2 of the time of sowing trial, on the 29<sup>th</sup> May. Figure 2 shows that as varietal maturity increases grain yields decline. This trend corresponds to the time of sowing trial where at the later times of sowing Axe yielded higher than Gladius, and Gladius yielded higher than Frame.

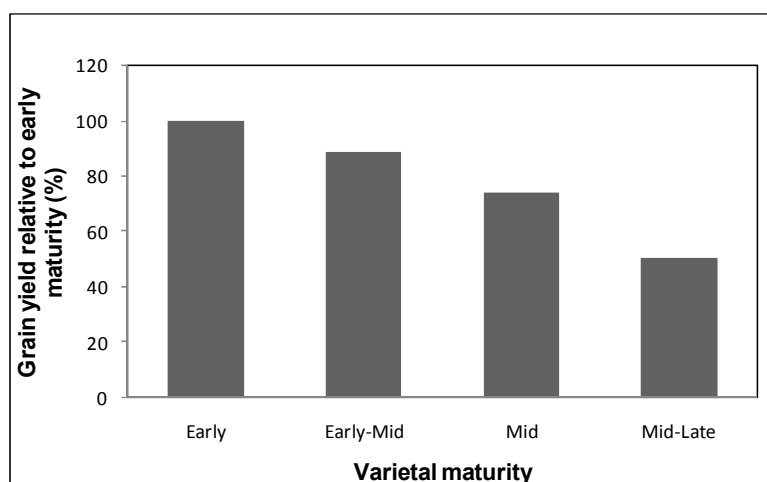


Figure 2: The interaction between grain yield and varietal maturity across all wheat varieties in the wheat variety comparison at Hart in 2008, sown 29<sup>th</sup> May.