

4.9 Chemtura seed treatments - Lake Bolac, Vic

Location: SFS Lake Bolac Research Site

Funding:

This was a Chemtura Funded Trial

Researcher(s):

Southern Farming Systems

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- SFS

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Summary of findings:

- Prior to sowing, seed was treated with various products that are commercially available although no seed treatment improved crop performance relative to the untreated control
- Rancona C had no negative effects on the germination, early vigour, establishment and yield of wheat when compared to other seed treatments or the untreated
- There was no evidence of wheat smut at the trial site this season, if disease pressure was greater we may expect to see differences in yield between the treatments

Background/Aim:

Rancona C is a triazole seed treatment fungicide for the control of smuts and bunt in wheat, barley and oats. There is nil tolerance of smut affected grain in wheat receivals around the country so control of these diseases must be considered prior to sowing to ensure some effect. The aim of this trial was to observe the early growth and establishment of wheat as well as final yield when seed was treated with Rancona C compared to other products or the untreated.

Rainfall:

2011 Total: 595 mm
Avg. Annual: 540 mm
2011 G.S.R.: 347 mm
Avg. G.S.R.: 400 mm

Paddock History:

2009: Canola
2010: Wheat - Bulk

Soil Characteristics:

Soil Type: Brown sandy loam
pH (1:5 CaCl): 6.6
P (Colwell) (mg/kg): 44
K (Colwell) (mg/kg): 460
Organic Carbon %: 1.9

Yield Potential: The Water Limited Yield Potential (WLYP) for this trial was 6.39t/ha.

Variety: Revenue

Sowing rate: 160 plants/m²

Sowing date: 17-May-11

Harvest date: 30-Dec-11

Fertiliser: 17-May-11 MAP 100kg/ha
6-Sep-11 Urea 150kg/ha

Herbicide: 17-May-11 Roundup Powermax 2L/ha,
Boxer Gold 2.5L/ha
27-Jul-11 Axial 400ml/ha,
Precept 500ml/ha,
Lontrel300 150ml/ha,
Adigor 500ml/ha

Plot size: 10m x 1.45m x 4 reps.

Plot type: Flats 8 inch row spacing

Measurements: Establishment, early vigour, yield & grain quality

- Tillage type:** The majority of trials were sown with the new SFS cone seeder on 20cm row spacing's using 2.5cm knife points. Stubble burnt prior to sowing.
- Diseases:** There was early disease pressure in susceptible wheat varieties to *Septoria tritici* due to the wet start to the growing season. This pressure eased off with the drying off of the weather. Stripe rust was also present, however it was adequately controlled and due to the dry end to the season, it did not cause too many issues. Stem rust, due to the pressure experienced in 2010, was expected to be a problem in 2011, but only small amounts were seen and again the weather did not favour the disease.

Results and discussion:

Table 1. Yield, Protein, test weight screenings and growth indicators of wheat with different seed treatment applications.

Treatment									8/06/11		28/06/11		28/06/11		28/06/11	
	Yield		Protein		Test Weight		Screenings		Plant count		Plant count		Phyto		Vigour	
	t/ha		%		kg/hl		%		pts/m2		pts/m2		0-10		0-10	
ProGuard Plus	7.80	a	7.43	a	73.45	a	2	a	146.3	a	122.81	b	1.3	a	5.8	a
Rancona C + Guardian	7.78	a	7.18	a	73.1	a	2	a	175	a	184.06	a	1.5	a	6	a
UBI 6953	7.77	a	6.9	a	73.4	a	2	a	212	a	173.12	a	1.5	a	5.8	a
ProGuard T	7.76	a	7.43	a	73.9	a	1.8	a	202	a	169.37	a	1.3	a	6	a
Rancona C	7.74	a	7.35	a	73.4	a	1.8	a	185	a	170.93	a	1.8	a	6	a
UTC	7.67	a	7.2	a	73.95	a	1.8	a	163.5	a	162.5	a	1.5	a	6	a
UBI 6953 + Guardian	7.66	a	7.1	a	73.6	a	1.8	a	192.3	a	184.37	a	1	a	5.8	a

Means followed by same letter do not significantly differ (P=.05, LSD)

Wheat treated with Rancona C had a significantly higher number of plants per meter squared on the 28th of June compared to wheat treated with ProGuard Plus, but was not significantly different from all other treatments. Phytochemical and vigour results did not show any significant difference between seed treatments. These results indicate that the application of Rancona C as a fungicidal seed treatment had no inhibitory effect on growth compared to the other treatments in the trial.

There was no significant difference in the yields produced despite the different seed treatments applied. The wheat that had been treated with ProGuard Plus produced the highest yield, however this was only 0.15t/ha higher than the lowest producing wheat which was the wheat treated with UBI 6953 and Guardian. There was also no significant difference between the test weights of the different treated wheats in this trial. Wheat treated with UTC produced the highest test weight followed closely by the wheat that had been treated with ProGuard T. Wheat treated with Rancona C and Guardian produced the lowest test weight, however the lack of significance between treatments indicates that the wheat treated with Rancona C did not suffer any yield loss compared to wheat treated with other seed treatments.

Although there was a lack of significance in the results generated in this trial, it can be concluded that the application of Rancona C did not appear to have any inhibitory action on germination, early vigour, establishment and yield of wheat relative to current industry standards.