



Cereal Seed Treatments 2013

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Observations from 2012 and lessons for 2013

Rusts

The cold winter, dry spring and widespread use of fungicides when needed kept foliar pathogens at generally low levels during 2012. Despite the high level of susceptibility in Mace wheat and the extensive cultivation of this variety in SA the level of stripe rust was low. This was also the result of a lack of infected volunteers over summer and a reduced level of disease early in the season in the eastern states. With a change of seasonal conditions in 2013 the risk of, and damage from, stripe rust could be much greater so growers are urged to remain vigilant with in-furrow treatments or early fungicide sprays to control this disease.

The widespread damage from barley leaf rust experienced in 2011 was not repeated in 2012. This was again largely due to the lack of infected volunteers through summer delaying the start of the epidemic in 2012.

Powdery mildew

Powdery mildew was much less of a problem in 2012 than the previous two years. This was in part a seasonal effect but also because in the most prone area on the Lower Eyre Peninsula most growers either used an in-furrow treatment on their wheat or else applied an early foliar spray around GS31 as a protectant against one or more of powdery mildew, eyespot or stripe rust. Similarly on the Yorke Peninsula many growers applied either an in-furrow treatment or an early spray on their wheat for protection against stripe rust and only a few untreated crops showed mildew infection. In these cases the dry spring weather dried up the infection.

Fungicide resistance

High levels of infection of powdery mildew in barley is likely to lead to the development of new mildew strains with resistance to fungicides. This has already

occurred in Western Australia where several fungicides including those containing propiconazole, tebuconazole and triadimefon are no longer effective. To help prevent this occurring in SA it is strongly recommended that all growers continue treating barley seed for mildew protection as this will keep the mildew population low and thus greatly reduce the risk of new strains emerging.

New products

Three new products have become available that are registered for suppression of Rhizoctonia along with control of smut diseases:

Vibrance, released by Syngenta, is an advance on Dividend and incorporates the new active ingredient sedaxane to the existing difenoconazole and metalaxyl actives in Dividend. Sedaxane is from a different class of fungicides (pyrazole-carboxamides) than the triazoles and thus provides an increased level of efficacy and protection from fungicide resistance compared to Dividend.

EverGol Prime, released by Bayer CropScience, claims suppression of Rhizoctonia through penflufen, which is another new pyrazole-carboxamide fungicide.

Tri-Power is a new product from Crop Care and combines the well known triazole fungicide flutriafol with metalaxyl and imidacloprid to provide suppression of Rhizoctonia along with control of Pythium and Barley yellow dwarf virus (BYDV).

Please note that where any of these new products are applied to barley then another treatment that controls powdery mildew should also be applied.

Syngenta has also released a novel insecticide for control of insects including aphids that transmit BYDV.

Cruiser Opti contains Lambda-cyhalothrin + thiamethoxam which also suppresses red-legged earth mite and lucerne flea.

Table 1: Products available that control smuts but not leaf diseases

Product	Company	Active ingredient		Form	Rates (per 100kg)	Smuts controlled at low/high rates				
		Fungicide	Insecticide			Wheat and barley		Oats	Flag smut	
						Loose	Covered ^φ		seed-borne	soil-borne
Vitaflo C	Chemtura	carboxin	cypermethrin	f	125/250 mL	-/✓	✓	✓	✓	-
Vitavax 750C	Chemtura	carboxin	cypermethrin	p	70/125 g	-/✓	✓	✓	✓	-
Vitavax 200FF	Chemtura	carboxin + thiram	-	f	250/500 mL	-/✓	✓	✓	✓	-/✓
Veteran C	Crop Care	flutriafol	cypermethrin	p/f/l	100 g/mL	✓	✓	✓	✓	✓
Vibrant 25C	Conquest	flutriafol	cypermethrin	l	100 mL	✓	✓	✓	✓	✓
Vincit C	Ospray	flutriafol	cypermethrin	p/f/l	100 g/mL	✓	✓	✓	✓	✓
Rancona C	Chemtura	ipconazole	cypermethrin	me	100 mL	✓	✓	✓	✓	✓
Tebu C25	Genfarm	tebuconazole	cypermethrin	f	100 mL	✓	✓	✓	✓	✓
Innova Tebuconazole 25C	Syngenta	tebuconazole	cypermethrin	f	100 mL	✓	✓	✓	✓	✓
Veto 25C	Conquest	tebuconazole	cypermethrin	f	100 mL	✓	✓	✓	✓	✓
Proguard T	Chemtura	tebuconazole	triflumuron	f	100 mL	✓	✓	✓	✓	✓
Raxil T	Bayer CropScience	tebuconazole	triflumuron	p/f	100 g/mL	✓	✓	✓	✓	✓
Tebuconazole 25 T	4 Farmers	tebuconazole	triflumuron	f	100 mL	✓	✓	✓	✓	✓
Premis Pro C	Crop Care	triticonazole	cypermethrin	f	100 mL	✓	✓	✓	✓	✓
Dividend M	Syngenta	difenoconazole + metalaxyl	-	f	100/130 mL	-/✓*	✓	-	✓	✓
Vibrance	Syngenta	difenoconazole + metalaxyl-M + sedaxane	-	f	180 mL	✓	✓	✓	✓	✓
Tri-Power	Crop Care	flutriafol + metalaxyl	imidacloprid	f	400mL	✓	✓	✓	✓	✓
EverGol Prime	Bayer CropScience	penflufen	-	f	40-80 mL	✓	✓	-	✓	✓#

p = powder
f = flowable
l = liquid
me = micro-emulsion

* only registered for
suppression in barley

^φ bunt in wheat
suppression only
-/✓ = only registered at the higher rate

Table 2: Fertiliser applied products

Product	Company	Active ingredient	Form	Rates (per ha)	Smuts	Stripe rust	Scald	Barley mildew	Net form net blotch	Septoria	Take-all
Various (See below) ^δ	Various	flutriafol	spray	200/400 mL	-	✓	✓	✓	-	-/✓	-/✓
Various (see below) ^Ϛ	Various	flutriafol	spray	100/200 mL	-	✓	✓	✓	-	-/✓	-/✓
Intake HiLoad Gold / Combi Sapphire	Crop Care	flutriafol	spray	100/200/400 mL	-	✓/✓/✓	✓/✓/✓	✓/✓/✓	-/-/✓	-/✓/-	-/✓/-

^δ = Impact (Ospray), Bayonet (Conquest), F-Flow (Masmart), Jubilee (Farmoz), Flutriafol 250 (Innova), Flutriafol 250 SC (4 farmers, Genfarm, Smart, Titan), Pollux (Kenso Agcare)

^Ϛ Impact Endure (Ospray), Jubilee Loaded (Farmoz), Flulfol 500 SC (Farmalinx), Flutriafol 500SC (Imtrade, Titan)

-/✓ = only registered at the higher rate

Table 3: Products available that control smuts and foliar diseases

Product	Company	Active ingredient		Form	Rates (per 100kg)	Smuts controlled		Other diseases suppressed at low/high rates					
		Fungicide	Insecticide			Wheat/ barley	Oats	Stripe rust	Leaf ^c rust	Barley scald	Barley mildew	Septoria#	Take-all#
Jockey Stayer	Bayer CropScience	fluquinconazole	-	f	300/450 mL	✓*	-	✓	✓	✓*	✓*	✓	-/✓
Quantum Pro	Chemtura	fluquinconazole	-	f	300/450 mL	✓**	-	✓	✓	✓**	✓**	✓	-/✓
Armour C	Ospray	flutriafol	cypermethrin	p/f	100 g/mL	✓	-	✓	-	✓	✓	✓	-
Arrow C	Crop Care	flutriafol	cypermethrin	f	100 mL	✓	-	✓	-	✓	✓	✓	-
V-Flow	Masmart	flutriafol	cypermethrin	f	100 mL	✓	-	✓	-	✓	✓	✓	-
Battalion C	Crop Care	triadimenol	cypermethrin	f	100/150 mL	✓	✓	✓	-	✓	✓	-/✓	-
Foliarflo C	Chemtura	triadimenol	cypermethrin	f	100/150 mL	✓	✓	✓	-	✓	✓	-/✓	-
Phoenix C	Farmoz	triadimenol	cypermethrin	p/f	100/150 g/mL	✓	✓	✓	-	✓	✓	-/✓	-
Seedpik 150C	Genfarm	triadimenol	cypermethrin	f	100/150 mL	✓	✓	✓	-	✓	✓	-/✓	-
Triadimenol 150C	Innova (Syngenta)	triadimenol	cypermethrin	p/f	100/150 g/mL	✓	✓	✓	-	✓	✓	-/✓	-
Triadimenol 150+/150C Flow	4 Farmers	triadimenol	cypermethrin	p/f	100/150 g/mL	✓	✓	✓	-	✓	✓	-/✓	-
Tridim-C	Campbell	triadimenol	cypermethrin	f	100/150 mL	✓	✓	✓	-	✓	✓	-/✓	-
Vanguard 150C	Conquest	triadimenol	cypermethrin	f	100/150 mL	✓	✓	✓	-	✓	✓	-/✓	-
Baytan T	Bayer CropScience	triadimenol	triflumuron	p/f	100/150 g/mL	✓	✓	✓	-	✓	✓	-/✓	-
Proleaf T	Chemtura	triadimenol	triflumuron	f	100/150 mL	✓	✓	✓	-	✓	✓	-/✓	-

p = powder
f = flowable
l = liquid

^c wheat only

* Barley disease control is only registered where Raxil is added

** Barley disease control is only registered where Proguard is added

suppression only

-/✓ = only registered at the higher rate

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Table 4: Products available that control specific diseases

Product	Company	Active ingredient		Form	Rates (per 100kg)	Net-form net blotch	BYDV*	Pythium	Rhizoctonia	Smuts & foliar diseases#
		Fungicide	Insecticide							
Vitavax 200FF	Chemtura	carboxin / thiram	-	f	250-375 mL	✓	-	-	-	-
Various (See below) [∂]	Various	-	imidacloprid	f	120-240 mL	-	✓	-	-	-
Cruiser Opti	Syngenta	-	Lambda-cyhalothrin + thiamethoxam	f	165-330 mL	-	✓	-	-	-
Hombre	Bayer CropScience	tebuconazole	imidacloprid	f	400 mL	-	✓	-	-	-
Proguard Plus	Chemtura	tebuconazole	imidacloprid	f	400 mL	-	✓	-	-	-
Imid-Triadimenol	4 Farmers	triadimenol	imidacloprid	f	400 mL	-	✓	-	-	✓
Proleaf Plus	Chemtura	triadimenol	imidacloprid	f	400 mL	-	✓	-	-	✓
Zorro	Bayer CropScience	triadimenol	imidacloprid	f	400 mL	-	✓	-	-	✓
Veteran Plus	Crop Care	flutriafol	imidacloprid	f	400 mL	-	✓	-	-	-
Arrow Plus	Crop Care	flutriafol	imidacloprid	f	400 mL	-	✓	-	-	✓
Vibrance	Syngenta	difenoconazole + metalaxyl-M + sedaxane	-	f	180 mL 360 mL	✓	-	✓	-/✓ ^ξ	-
Dividend M	Syngenta	difenoconazole + metalaxyl-M	-	f	100/130 mL 260 mL	-/✓	-	✓	-/✓ ^ξ	-
Tri-Power	Crop Care	flutriafol + metalaxyl	imidacloprid	f	400 mL	-	✓	✓	✓ ^ξ	-
EverGol Prime	Bayer CropScience	penflufen	-	f	40-80 mL	-	-	-	✓ ^ξ	-

[∂] = Gaucho 600 (Bayer Crop Science), Emerge (Syngenta), Genero 600 (Echem), Imida 600 (Conquest), Senator 600 Red (CropCare)

Imidacloprid 600 (4Farmers, Genfarm, Novaguard, Sharda, Smart), IMI-Flow 600 (Masmart), Nuprid 600 (Nufarm)

-/✓ = only registered at the higher rate

* reduces aphid feeding damage and hence Barley Yellow Dwarf Virus

^ξ only registered for suppression of Rhizoctonia

- This refers to the diseases controlled by similar products in Table 2

Choice of seed or in-furrow treatments

Wheat

The principal reason for using a fungicide at sowing for wheat crops has been for the control of smuts. To this end regular use of one of the products in Table 1 has been recommended as a minimum treatment.

Where powdery mildew occurs as a problem in wheat there is a strong case for applying early protection against this disease. For this purpose a fertiliser-applied treatment from Table 2 or a seed treatment from Table 3 is needed.

With large areas being sown to the variety Mace in SA there is an increased risk that stripe rust will survive on self-sown wheat through summer. This will increase the risk of early infection of crops in 2013 and hence the value of seed or fertiliser applied fungicides to suppress stripe rust. This risk will be greater should summer rainfall result in large areas of self-sown wheat. Should growers decide to apply early protection for stripe rust they can choose cheaper seed treatments containing flutriafol or triadimenol or longer acting treatments based on fluquinconazole or fertiliser-applied fungicides.

Smut Control

Wheat, barley and oat seed should be treated to control bunt, flag and loose smut in wheat, covered and loose smut in barley and smut in oats. These diseases generally occur at low or trace levels but, in the absence of seed treatments, they have the potential to increase rapidly causing significant economic losses to growers. Where farmers decide not to treat seed for one year, they are advised to treat the following year. Based on crop reports in 2012 it would appear that Hindmarsh barley may be more susceptible than other barley varieties to loose smut infection.

Smut spores spread on seed and harvest machinery, and flag smut can survive in soil for several years infecting subsequent crops. Where infection is observed, growers are advised to buy new seed and use the full rate of seed treatments. Ensure that any machinery that has been in contact with the diseased seed is cleaned.

The accepted tolerance levels for wheat are nil for bunt and three infected pieces in half a litre of grain for loose smut. Any wheat exceeding these limits will not be accepted. There is a nil tolerance level for any smutted barley or oat grain.

Emergence problems

Caution should be taken in using products in Table 3 on wheat as they may reduce coleoptile length and cause emergence problems under some conditions.

Factors other than seed treatments can cause poor seedling emergence: these include deep sowing, surface crusting, short coleoptile varieties, soil temperatures and trifluralin.

Sowing too deep is a common cause of emergence problems. The coleoptile, which surrounds the first leaf until the shoot emerges, protects and guides the shoot as it grows through the soil. If seed is sown deeper than the length of the coleoptile the plant can fail to emerge. Because coleoptile lengths vary from one variety to another some varieties can tolerate deeper sowing than others. Of the current wheat varieties most have intermediate length coleoptiles although Wyalkatchem has a shorter coleoptile. Coleoptile lengths vary greatly from one batch of seed to another. The source of seed is often more critical than the variety in determining coleoptile length. For this and other reasons farmers should seek to use the best seed possible.

Most emergence problems occur in heavy clay soils where surface sealing occurs. Extra care is required when treated seed and/or trifluralin is used in such soils.

Further advice:

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