



Pest Management in Winter Cereals



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Key Pests

Crop stage/ Pest	Emergence	Vegetative	Flowering	Heading	Grainfill
Cutworm	Blue				
Mites	Blue	Blue			
Wireworms/ False Wireworms	Blue	Blue			
Black-headed cockchafer	Blue	Blue			
Aphids		Blue	Blue	Blue	Blue
Armyworm		Blue	Blue	Blue	Blue
Helicoverpa Spp.		Blue	Blue	Blue	Blue



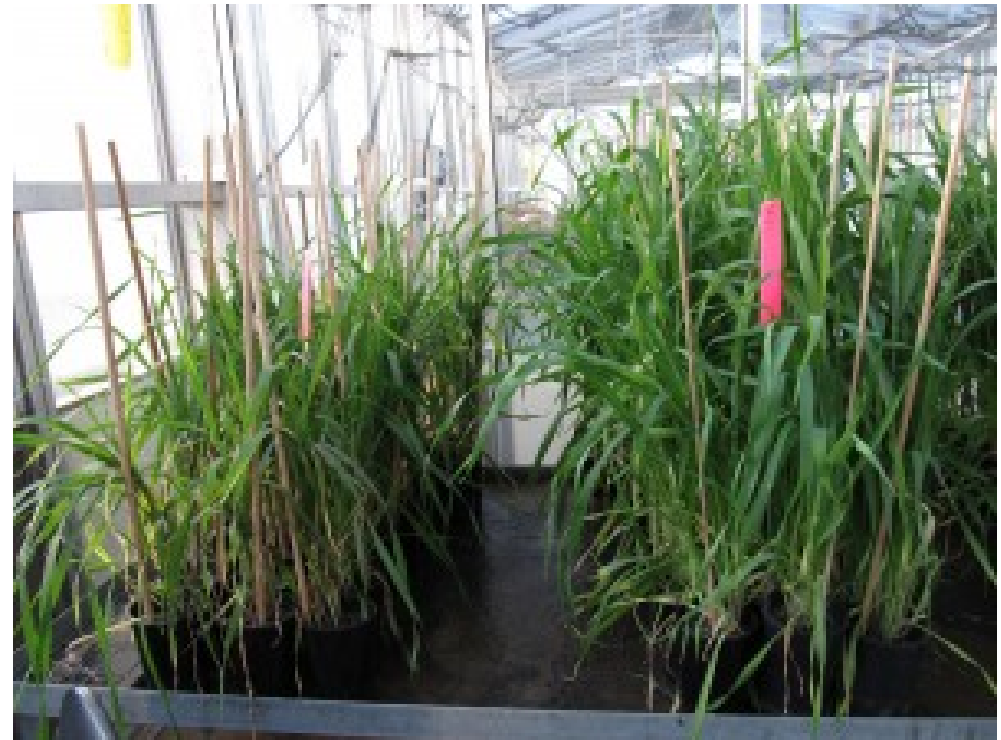
Risk Management Table

High risk	Reduced risk	Low risk
Aphids & BYD Virus		
<ul style="list-style-type: none"> • Green bridge • Warm, dry growing season 	<ul style="list-style-type: none"> • Alternative hosts controlled pre-season • Large numbers aphid predators and/or aphid mummies 	<ul style="list-style-type: none"> • Dry, cool summer/wet, cool winter • Heavy grazing to reduce plant/weed hosts
Armyworms & Helicoverpa		
<ul style="list-style-type: none"> • Heavy rainfall or flooding • Adjacent pastures chemically fallowed, spray topped or cultivated in spring 	<ul style="list-style-type: none"> • Large numbers wasp parasitoids • Weed control 	<ul style="list-style-type: none"> • Wet winter/spring



Impact of aphids

- Direct feeding
- Honeydew
 - sooty mould
- Virus transmission



Early and continuous
infestation

Late infestation

Key Aphid Species

- Oat aphid
 - July to end Aug
 - Crown and lower stems



- Corn aphid
 - Aug to early Sept
 - Whorl and top leaf axis



- Rose-grain aphid
 - Late Aug to Sept
 - Upper leaves
 - Less common





Virus transmission

Yellow dwarf viruses

- Transmitted by aphids
- Yield losses
 - 9-79% (early infection),
 - 6-9% (infected post-tillering)
- Summer/autumn “green bridge” increases aphid and virus survival





Managing aphids

- Monitor and record
 - aphids and beneficials
- Repeat sampling
 - population dynamics
- Six locations
 - 5 plants at each



Suggested Thresholds



Early crop stage (NGA)

50% of tillers - 10 or more aphids

Late crop stage (WA)

50% of tillers -15 or more aphids

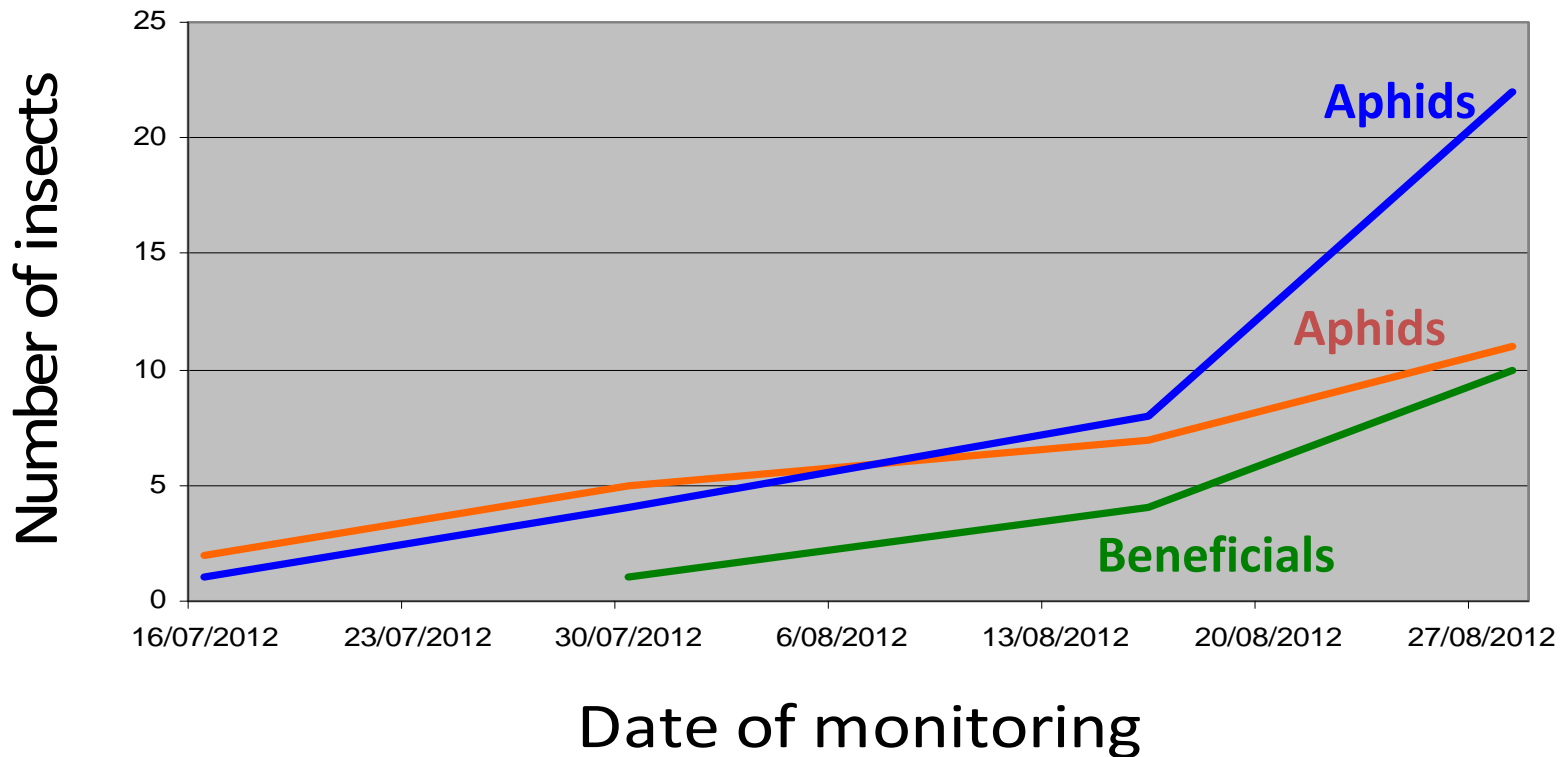
QLD

90% of plants covered with aphids,
and less than 2 natural enemies per
plant

When do I control aphids in my crop?



Aphids and beneficial insect numbers





Management considerations

- Is the population increasing?
- Intensity, duration and distribution of infestation
- Beneficial activity?
- Crop development stage?
- Is the crop stressed?
- Weather conditions



Aphids - IPM opportunities

- Cultural
 - weed control, reflective surfaces, kaolin
- Biological
 - beneficial insects
- Chemical
 - mineral oils
 - Aphid specific insecticides
 - Seed dressings



Kaolin



Hover fly larvae



Best Bet Table: Aphids

Pre-season	Establishment	Winter	Spring
Remove green bridge (weed & volunteer hosts)	<p><u>High risk</u> Wet summer/autumn: consider seed dressing</p> <p>Areas that favour virus: consider seed dressing</p> <p>Early control along edges or patches may delay infestation</p>	<p><u>High risk</u> Warm conditions</p> <p>Monitor/record density aphids and beneficials</p> <p>Delay chemical control if rain (>20 mm) forecast</p> <p>Selective insecticide</p>	<p><u>High risk</u> Warm dry spring</p> <p>Monitor/record density aphids and beneficials</p> <p>Thresholds</p> <p>Selective insecticide</p> <p>Infestations later than milky grain: No yield loss</p>

Caterpillars



- Armyworms
 - sever heads

- Helicoverpa
 - graze on exposed tips



Armyworm

- Monitor
 - Sweep net, ground searches
 - Scalloped leaves, droppings
 - Increase frequency at ripening
- Thresholds
 - Barley - 2-3 large armyworm/m² of crop
 - Wheat and oats - nominal threshold - 10 larvae/m²



When do you start monitoring – at ripening?



Caterpillar pests - IPM opportunities

- Early recognition of problem
 - Smaller larvae easier to control
- Biopesticide
 - NPV effective for Heliothis, not for armyworm
- Selective chemistry
 - preserve beneficials to do control for free





Best Bet Table: Armyworm

Pre-season	Establishment	Winter	Spring
<p>Control weeds and other green material especially ryegrass</p> <p>Know the pest: do not confuse with <i>Helicoverpa</i></p>	<p>Traps for regional presence:</p> <p>lures of 10% port, 15% raw sugar and 75% water</p>	<p><u>High risk</u> When good rain follows a dry period</p> <p>Traps</p> <p>Monitor for larvae at dusk with sweep net</p> <p>Ground search for larvae and droppings</p> <p>Look for scalloped leaf margins</p> <p>Control larvae when small</p>	<p><u>High risk</u> ↑ monitoring when crop dries down</p> <p>Consider crop stage before control</p> <p>Control late in day when larvae feeding</p>



Key messages

- Cultural control
 - Control weeds, green bridge
- Weather
- Biological control
 - Monitor beneficials
- Chemical control
 - Selective insecticides
 - Border or spot sprays

