



Pests in Cropping Systems (the bad, the ugly and the good!!)

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Pest Outbreaks

- Are often signs of ecological imbalances
- Can often be linked to use of broad spectrum insecticides that kill all species inc. pests and natural enemies.
- Can be a result of resistance to commonly used chemicals
- Are exacerbated by lack of diversity (eg crop monocultures)
- Changes in farming systems can change pest and beneficial species abundance and distribution.
- This season has been exceptional....good for all species!!



Aphids



- Many species, mostly specific to the crop, except Green Peach aphid (GPA)
- Virus transmission by aphids into crops important
- Beet Western Yellows Virus has caused major damage in SA this year (GPA)
- Barley (Cereal) Yellows Dwarf virus important
- Aphids mostly controlled by all the natural enemies.





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Cutworms (larvae of Bogong moths)



- Cutworms have been damaging many cereal crops this season
- Spring/Summer could see a major hatching of moths (towns invaded!!)
- Larvae are mostly nocturnal so monitoring and controls are best done early evening.



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Lucerne Fleas



- Massive numbers of Lucerne Flea seen on clover this season.
- Early autumn break this year gave perfect conditions for LF
- Pasture and crop growth rates out ranked the damage caused.
- Pasture paddocks going into crop next year at risk
- LF mostly resistant to SP chemicals.
- Border sprays for crops is usually all that's needed

Slugs attacking crops



- **Several species often occurring together**
- **Grey Field slug**
- **Black Keeled slug**
- **Brown Field slug**

- Picture Mark Branson, SA

What drives slug numbers? Moisture!

Contributing factors :

- Previous paddock history/pop'n size
- Low/no cultivation
- Stubble retention (habitat & moisture)
- Heavier soils (retain moisture)
- Rainfall: >450mm/year
- Summer rainfall increases populations





Research Results on Slug Control

Dr Michael Nash (SARDI, Adelaide)

- Baits must be applied directly after sowing to protect seedlings
- Just because you cannot find slugs doesn't mean they will not be a problem
- Surface application is still effective even when slugs are feeding on seedlings along the drill row
- Drilling baits does not improve efficacy
- Monitoring with surface refuges such as tiles was not effective this season as soil conditions were quite different to other years.

Slaters/ Pill bugs

Lifecycle/description

- Crustaceans related to crabs and lobsters; terrestrial but moisture dependent
- Stubble provides a cool, moist habitat; crumbly clay soil surfaces aid their survival
- Feed on decaying vegetable and animal matter; can damage all crops
- The *Australiodillo bifrons* slater species has the ability to swarm
- Prevention is best

Damage

- Canola and lentils



Flood bugs at Coonamble, NSW 2013

photo Rohan Brill, NSW DPI



Black Portuguese millipedes

Lifecycle/description

- Active in autumn and spring
- 2 years to sexual maturity
- Easily distinguishable from native species

Damage

- Mainly organic matter feeder, attacks canola and cereals
- Associated with black organic soils (although damage has occurred on lighter soils)
- Foliar grazing, cotyledons/leaves
- Nocturnal feeders



European earwigs

Lifecycle/description

- Adults 20 mm long
- Easily confused with beneficial earwigs

Damage

- Adults and nymphs attack canola, lupins, cereals
- Associated with heavier soils, stubble
- Irregular chewing of leaves, cotyledons, stems (similar to slug damage)
- Can also chew through seed pods; and occasionally are a grain contaminant
- Nocturnal feeders (inspect at night)



Don't forget the value of the Good Guys in keeping pest numbers under control





Important Resources



- Pestfacts (CESAR Uni Melbourne) email subscription and website

<http://www.cesaraustralia.com/sustainable-agriculture/>

- Murrumbidgee Landcare website (and my notes)

<http://www.murrumbidgeelandcare.asn.au>

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