

High priority exotic pests of the grains industry

The following are some key high priority exotic pest threats of the grains industry. Any of these pests would have serious consequences should they enter and become established in Australia.

Karnal bunt (*Tilletia indica*)

OVERALL RISK – EXTREME

- Hosts are wheat, durum and triticale
- Parts of seeds are blackened and crush relatively easily
- Infected grain has a distinct fishy smell
- If it became established in Australia, access to over 45 international markets would be restricted and grain price would be significantly reduced



PaDIL

Khapra beetle (*Trogoderma granarium*)

OVERALL RISK – HIGH

- Adults are small (2-3 mm long) and do not fly
- Spread in infested grain
- Larvae are hairy and can survive for over a year without food
- Phosphine fumigation gives poor control
- If established, it would affect market access



Ministry of Agriculture and
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Phosphine resistant strains of stored grain insects

OVERALL RISK – MEDIUM

- Stored grain insects with strong resistance to phosphine have been detected internationally and in Australia
- Exports are threatened due to insects surviving in stored grain
- Incorrect phosphine fumigation and poor grain storage practices increase the selection of resistant insects
- Live insects remaining after fumigation should be reported and tested for resistance



DEEDI

Russian wheat aphid (*Diuraphis noxia*)

OVERALL RISK – HIGH

- Primary hosts are wheat and barley
- Light-green, elongated aphid (up to 1.8 mm long)
- Damage symptoms include:
 - White, purple or yellowish leaf streaks
 - Rolling of leaves, flag leaf and awns
 - Bleached heads with small grains
- Crop losses up to 75% could occur



Frank Peairs, Colorado State
University, Bugwood.org



Hessian fly and Barley stem gall midge (*Mayetiola destructor* and *M. hordei*)

OVERALL RISK – HIGH

- Adults are small (2-4 mm long) and look like mosquitoes
- Pupae have a 'flaxseed' appearance
- Attack leaves, stems and heads of cereals
- Most chemical controls are not effective
- Cereal crop losses up to 40% could occur

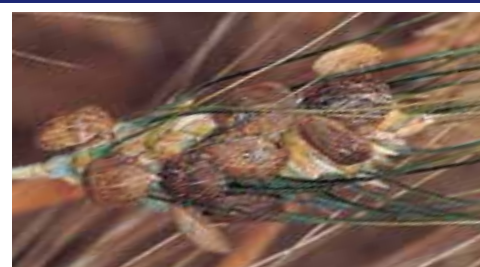


Scott Bauer, USDA Agricultural Research Service, Bugwood

Sunn pest (*Eurygaster integriceps*)

OVERALL RISK – MEDIUM

- Brown bug with wide oval-shaped body (12 mm long) with a wide triangular head
- Attacks most cereal crops
- Colonies can be seen on cereal heads in spring
- Injects enzymes into the plant as it feeds which can result in grain damage and abortion



ICARDA

Barley stripe rust (*Puccinia striiformis* f. sp. *hordei*)

OVERALL RISK – HIGH

- Would infect barley in all Australian growing regions
- Approximately 80% of Australia's barley varieties would be susceptible
- Yellow stripes of fungal spores produced between veins of leaves
- Can be spread by wind and rain, or on clothing, machinery and tools
- Any stripe rust on barley should be reported



Pat Hayes, Oregon State University

Wheat stem rust, pathotype Ug99 (*Puccinia graminis* f. sp. *tritici*)

OVERALL RISK – HIGH

- Pathotype identified in Uganda in 1999 that has overcome several stem rust resistance genes
- Many Australian wheat varieties will be susceptible
- Elliptical blisters produced on stems, which break open to reveal a mass of rust coloured spores
- Stem rust on known resistant varieties should be reported



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Remain observant on your farm and in storage facilities.

If you see anything unusual, call the Exotic Plant Pest Hotline



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