



Factsheet

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Russian wheat aphid *Diuraphis noxia*

An exotic threat to Western Australia

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FLARING SEEDLING AS A RESULT OF RUSSIAN WHEAT APHID DAMAGE

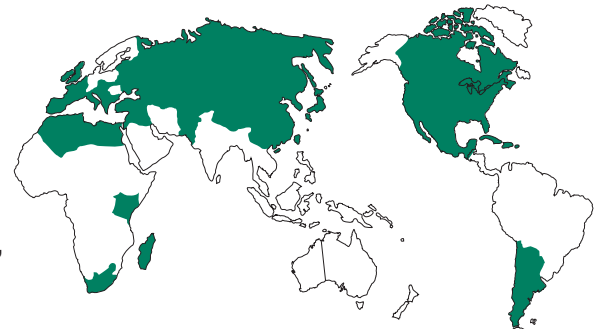
Background

The preference of Russian wheat aphid for drier climates renders the Australian wheat belt more favourable than infested regions in South Africa and the United States. The potential establishment of this aphid in the wheatbelt is high because:

- Russian wheat aphid is well adapted to low humidities and climates similar to those found in the medium to low rainfall areas in the central to the southern zone of the WA wheatbelt
- The host plants of Russian wheat aphid occur in abundance over the whole of the wheatbelt

Distribution

Russian wheat aphid has not yet been found in Australasia. It has been found in one region of the Peoples Republic of China for about 70 years, but it has not spread to the major wheat-growing areas. It has recently been found in Chile and Argentina but has not yet become a serious pest.



DISTRIBUTION



Potential impact

This aphid has a history of severe economic impact; analysis has indicated that there is a high risk of severe losses in many Australian wheat-growing areas. Since its appearance in Texas in 1986, Russian wheat aphid has become a major pest of wheat and barley in the United States, causing over \$850 million in direct and indirect losses from 1987 to 1992. Pre-emptive research has started with breeding of resistant cultivars being taken up at Sydney University with screening carried out overseas. Some chemical control options have been developed overseas.

Plants Affected

Russian wheat aphid is a serious pest of wheat and barley. Limited problems also have been noted in triticale, oats and rye.

Season of occurrence

Russian wheat aphid would occur throughout the year. Infestation of wheat and barley would start from the emergence of the crop in autumn and extend to crop maturity. During wet summers self-sown wheat and barley would serve as a "green bridge".

Symptoms

As a result of salivary toxins injected as the aphids feed, plants become purplish and leaves develop longitudinal yellowish and whitish streaks. Tillers of heavily infested plants often run parallel to the ground, giving them a prostrate appearance.

In the spring, as wheat stems begin to elongate, the aphids move upward to infest the new leaves. Eventually the aphids reach the flag leaf, causing it to roll and "trap" the emerging head and awns. The "trapped" head then curls, resulting in poor pollination. These curled heads resemble heads damaged by 2,4-D.



PHOTO: ARC, SOUTH AFRICA

INFESTED WHEAT LEAF UNFOLDED TO SHOW COLONY OF RUSSIAN WHEAT APHID



PHOTO: J.B. JOHNSON, UNIVERSITY OF IDAHO

RUSSIAN WHEAT APHID COLONY ON LEAF SHOWING CHARACTERISTIC LONGITUDINAL STREAKS

