



**Buginyanya Zonal Agricultural
Research & Development Institute**

Russian Wheat Aphid Management



Background: Wheat (*Triticum eastivum* L), basically a temperate crop, is adapted to the south western highlands of Uganda in the districts of Kisoro and Kabale and, in eastern Uganda on the slopes of Mt. Elgon in Kapchorwa, Sironko and Mbale districts.

Aphids (various species)

Symptoms: Aphids are nearly transparent, soft-bodied sucking insects (56). When present in sufficient numbers, aphids can cause yellowing and premature death of leaves. They exude drops of sugary liquid known as "honeydew", which may cause tiny scorch marks on the foliage and tends to encourage the development of sooty molds. The feeding of *Schizaphis graminin* (57) is especially damaging, resulting in the development of necrotic areas sometimes accompanied by purpling and rolling of the infested leaves. The feeding of *Diuraphis noxis* produces long white stripes on the leaves, leaf rolling, prostrate growth habit, and sterile heads.

Life Cycle: The life cycle of aphids involve winged (alates), wingless (apterous), sexual, and asexual forms. When feeding on cereals, the females of most aphid species reproduce asexually

(without being fertilized), giving rise to nymphs rather than eggs.

Hosts/Distribution: Species commonly found on cereals throughout the world include: *Rhopalosiphum padi* (bird cherry-oat aphid), *Schizaphis graminum* (greenbug), *R. maidis* (corn leaf aphid), *Metopolophium dirhodum* (rose grass aphid), *Sitobion avenae* (English grain aphid), *Diuraphis noxis* (Russian wheat aphid)

Importance: Aphids are important and widespread pests on cereal crops. When feeding in sufficient numbers, they can cause significant damage. In addition, the species listed above may act as vectors of barley yellow dwarf virus.

Biological Control

The effectiveness of biological control agents has not been fully evaluated. Russian wheat aphid is attacked by several predators and parasites commonly associated with other aphid pests of small grains. Efforts should be made to conserve these natural enemies as they are of great importance in controlling other cereal aphids and may reduce Russian wheat aphid populations as well.

Cultural Control

Destroy and remove volunteer cereals to help reduce or delay the buildup of Russian wheat aphid populations. Plants stressed for water or nutrients are more susceptible to and suffer greater damage from Russian wheat aphid, so maintain adequate soil moisture and fertilization.

Monitoring and Management Decisions

The best management strategy in areas where Russian wheat aphid is a problem is early planting, avoiding water stress, and isolation from riparian or permanent pasture. The major problems generally occur in late-planted grains. Russian wheat aphid is frequently found on the barley and wheat plants in mixes, but good forage yields can be obtained.

Check fields regularly following seedling emergence. Russian wheat aphids are often difficult to find, particularly when present in low numbers. Look for the characteristic white stripes on the leaves and stem. The earliest infestations are often found on the edge of the field, particularly the upwind side. Aphids rapidly spread across the entire field after their initial establishment.

Plant Growth Stage	Number of Aphids per Plant or Tiller
two leaf	5 (per plant)
early tillering	5 (per tiller)
late tillering	10 (per tiller)
first node	10 (per tiller)
boot	20 (per tiller)
head exertion and later	30 (per tiller)

- Chemical control of the aphid is the only option for many farmers because our commercial wheat varieties are susceptible to the aphid.

- Chemical control can be achieved when systemic insecticides are applied to the seed at planting, or when foliar systemic insecticides are applied. Tightly rolled leaves protect the aphid from contact insecticides which are not recommended.

- Foliar insecticides can be applied when damage signs are noticed. One spray is recommended but you can repeat if necessary.

Apply chemical control if aphid numbers reach the following on the indicated growth stages:

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