Extension News

Rust identification

Orange rust was observed on sugarcane in our industry for the first time in February 2022 (see *The Link*, May 2022 edition). This means that our varieties are now affected by three rust species, each causing different symptoms that are sometimes difficult to distinguish. To complicate matters, the symptoms caused by yellow sugarcane aphid (YSA) and mites feeding on the leaves can be confused with rust symptoms (see next page).

It's particularly important to distinguish rust infections from YSA damage and mite injury because each will be treated differently. Cane infected with rust should be treated with a registered fungicide while the use of a registered insecticide may be warranted for YSA. No chemicals are registered for the treatment of mites in South Africa and by the time damage is observed, the mites have usually disappeared.

Rust identification – general

When leaves are infected with rust, brown to red marks (lesions) will always be visible on both the upper and lower leaf surfaces. The lower leaf surface may feel rough and if you check carefully, you should see that the epidermis (skin) of the leaf is broken, the surface is not smooth / shiny, and spores may be visible.

Orange rust

- Lesions: Orange to reddish brown, usually less than 4mm long. Often more severe in the middle of the leaf extending to leaf tip;
- Spores: Orange to cinnamon-brown, relatively abundant. Usually on the lower leaf surface but may be present on the upper leaf surface if damage is severe;
- Infects cane of all ages;
- Favoured by warm (20-25ºC), wet conditions, high humidity.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

NOTE: The calendars indicate the time of year when symptoms are most likely to be common and severe.

Brown rust

- Lesions: Dark brown to reddish brown, up to 20mm long; Usually more severe towards the leaf tip;
- Spores: Cinnamon to brown, usually sparse. Mainly on the lower leaf surface, rarely on the upper surface;
- Tends to infect cane younger than 6 months;
- Favoured by cool, misty conditions, heavy dews.

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Tawny rust

- Lesions: Dark brown to reddish brown, up to 20mm long. Purple discoloration around the lesions common; Usually more severe towards the leaf tip;
- Spores: Bright orange when fresh. Abundant. More common on the lower leaf surface but frequently observed on the upper surface;
- Infects cane of any age;
- Favoured by cool, misty conditions, heavy dews, high humidity.

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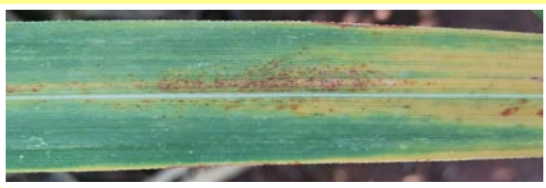

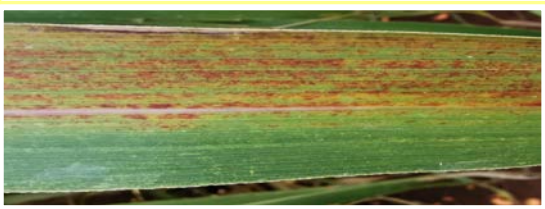

Yellow sugarcane aphid (YSA)

- Red flecks on the leaves after feeding by YSA. These flecks may combine to form large patches of reddened tissue and may be observed on one side or both sides of the leaf;
- Both leaf surfaces will be smooth and shiny. The lower leaf surface will not appear rough as with rust and no spores will be visible;
- Leaves may turn yellow and some varieties (e.g. N57) may turn purple;
- Yellow patches may develop in the field;
- Aphids may still be present on the leaves or may have dispersed by the time symptoms develop.

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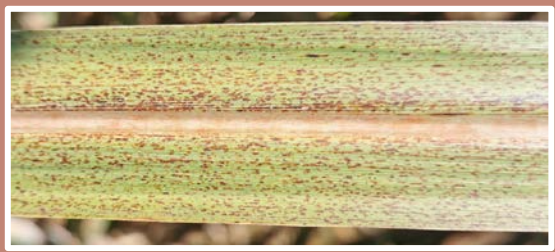

Mite injury

- Red flecks on the leaves after feeding by mites. These may combine to form large patches of reddened tissue and are generally only observed on one side of the leaf;
- Both leaf surfaces will be smooth and shiny. The lower leaf surface will not appear rough as with rust and no spores will be visible;
- Large areas of the field may turn brown, similar to rust;
- The mites have usually dispersed by the time symptoms appear;
- White exoskeletons may be observed on the leaf surface;
- Symptoms are most likely during or after hot, dry weather.