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BREEDING MEDICS TO BEAT ROOT DISEASE

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Root Lesion nematode (RLN – Pratylenchus neglectus) is widespread in the cereal growing areas of the state and reduces wheat yield from between 0 and 20% depending on the tolerance of the variety being grown.

SARDI's Root Disease Testing Service is finding the nematode at damaging levels in about 25% of the soil samples they analyse.

Four to five years ago, annual medics were suspected to be aggravating this problem by multiplying the nematode and not providing the "break" from cereal diseases that is normally associated with medic pastures. At the same time there were clearly problems with medic growth, making them a less attractive alternative for farmers.

With these concerns in mind, SAGIT, in partnership with SARDI and GRDC, set about determining the role of medics in multiplying Root Lesion Nematode and the tolerance of medics to it.

This research program has been very successful, especially considering that there had been very little previous research in this area.

Trials clearly show that in terms of the multiplication of RLN on the roots, medics are in the same range as resistant cereals such as Tahara triticale.

Subtle differences have also been measured between medic cultivars, with Caliph medic consistently showing some of the lowest multiplication levels.

The conclusion from this component of the work is that medics are moderately resistant to the nematode and therefore will limit, and in some cases even reduce, nematode numbers in the farming system

Whilst the news on nematode multiplication is good, the bad news is that medics themselves are prone to root damage by the disease. At moderate nematode levels in the field, 15% yield loss frequently occurs with intolerant cultivars.

The work has found both highly tolerant and intolerant types, and has paved the way to develop highly productive, RLN tolerant medics. Field-testing of suitable lines will commence in 2007

There is of course more material coming through the program with some Barrel medic lines already having been crossed. Caliph, with its high resistance to RLN, is also being used as a parent to ultimately produce a highly resistant and tolerant barrel medic cultivar.

This research has also had a valuable spin off in that the expertise and knowledge developed can be applied to other pasture species such as lucerne, where there is mounting evidence that RLN is having a significant impact on seedling growth. It is possible now to pursue Pratylenchus tolerance as an objective in pasture species other than medic.

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