

**Project Title:** Selection of *Pratylenchus* tolerant strand and barrel medic lines

S0306R Final Report

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## **Executive Summary**

This project completes the growth room selection of annual medics that are tolerant of the root lesion nematode *Pratylenchus neglectus*. Three cohorts of material have been developed. The first cohort has produced several tolerant versions of the strand medic cultivar Herald. The second cohort is also based on strand medic, but combines *Pratylenchus* tolerance with a number of additional traits (SU tolerance, improved nitrogen fixation, multiple aphid and mildew resistance) that are being progressed into this medic species. It will be the most likely source of a commercial release. The third cohort was developed to produce a tolerant version of the barrel medic cultivar Caliph.

All three cohorts of material have shown good levels of tolerance to the nematode through repeated growth room tests. The most advanced material, (eighth generation tolerant selections of Herald strand medic) has been tested in field soil in both the growth room and in the field. These tests were less discriminating of nematode tolerance, because even though several of the lines showed large and significant improvements in early root growth, at the end of the experiments yield differences were affected by other factors including other soil constraints and seed size. Regardless, two lines (Z2365 and Z2371) performed well in both field soil experiments and are recommended for further testing.

Seed of the three cohorts is undergoing seed multiplication and will be available for further testing by the medic evaluation unit in 2010. Some additional work, comparing nematode multiplication (resistance) in the tolerant lines is also nearing completion.