

Project Summary

Capitalising on the discovery of Messina for the pasture seeds industry

Messina (*Melilotus siculus*) is a new annual pasture legume with tolerance of both waterlogging and salinity. It has the potential to transform salt land pastures, which currently lack a suitable legume and therefore only sustain very low levels of production.

The messina cultivar Neptune, together with a new salt tolerant strain of rhizobia, were made available to growers in 2017. Their release follows nearly two decades of development work.

Herbicides that did not cause significant damage to messina included the broadleaf herbicides Broadstrike (Group B) and Igran (Group C) and Group A grass selective herbicides Verdict and Factor.

Some of the herbicides tested (e.g. Treflan and MCPA) did cause damage to messina. Previously, Treflan was thought to be 'safe' on messina and so should only be used with strict adherence to application rate (1.4 L/ha has been used safely), timing and method of application. MCPA should not be used on messina. Messina is very intolerant to residues of the Chlorsulfuron herbicide Glean and hence other sulfuron herbicide formulations. Plant back periods must be strictly adhered to.

Messina is sensitive to low soil pH. It should only be grown on soils where pH is greater than 5.5(Ca) or 6.0(water). Even this pH level may carry some risk, but this can be effectively eliminated with application of lime to the seed before sowing.

Having advocated the application of fine lime on seed, we caution that lime pelleting should not be used to push the soil pH boundary for messina below pH 5.5(Ca), because the benefits of lime pelleting are transient and limited to the establishment year. Hence, nodulation of the regenerating messina pasture would likely be poor where soil pH is less than 5.5(Ca).

Using the new rhizobia inoculant strain (SRDI-554) developed for messina is critical to ensure good establishment, regeneration and N fixation. Pelleting the inoculated seed with

Recent work funded by AgriFutures Australia has provided critical information on messina's herbicide tolerance, pH adaptation, and the impact of seed treatments on its establishment.

Avoiding failures in the first few years of a legume's release is critical to generating strong farmer interest and demand for seed production. The recent work was used to support messina's commercial release in 2017 and will be important to its ongoing adoption as farmers grow messina for the first time.

fine lime consistently improved nodulation of messina and should be routinely applied.

Application of Apron fungicide (metalaxyl) to seed improved seedling emergence, but it is not currently registered for use on messina. In the absence of Apron application some seedling losses are likely. A sowing rate of 10 kg/ha, similar to what was used in evaluation trials is being recommended to growers and should provide an adequate buffer against seedling losses.

Messina seed and inoculant is sold through Seednet/Landmark. Recommendations from this work and general information on messina are provided in the messina fact sheet.

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