

Project Title: Managing root diseases on upper Eyre Peninsula through disease suppression

S 3/05 Final Report

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Executive Summary

- Potential suppression of root disease, mainly rhizoctonia appears to be present in at least some paddocks on upper EP. Suppression offers the best prospects for substantial and long term control of Rhizoctonia in these environments.
- The factors with significant influence on disease suppression levels were average grain yield over the ten years prior to sample collection and soil collection time (higher in summer than in-crop).
- Canola can reduce rhizoctonia inoculum to levels similar to a long fallow, provided grassy and broadleaved weed are controlled.
- However, rhizoctonia continues to be a major disease problem in upper Eyre Peninsula farming systems and further research is required to more fully understand the dynamics and interactions between soil carbon and nitrogen, the soil environment, the disease, the microbial community and farm management decisions.
- Yields on upper EP are being driven by phosphorus (P) inputs (average units (kg/ha) over ten year period), potential suppression, calcium carbonate content of the soil and soil type.
- Rhizoctonia disease score in-crop from fifty paddocks in 2007 showed P inputs, average cereal grain yield over ten years and calcium carbonate content of the soil influenced the incidence of disease in crop. The addition of P reduced disease symptoms.
- The disease scores identified that current rhizoctonia disease levels reflected the long term yield achieved.
- Leaf tissue nutrient analysis of the surveyed paddocks in P and Zn deficiency are present on EP.