

Research Topic 2: Ground Prep, Fallow Management, Bed Formation, Planting

Research Site/Demonstration Number: SA02WB-02

Grower Collaborator: Amaryllis Farming

Location: Gooburrum Road, Gooburrum

State Date: July 2020

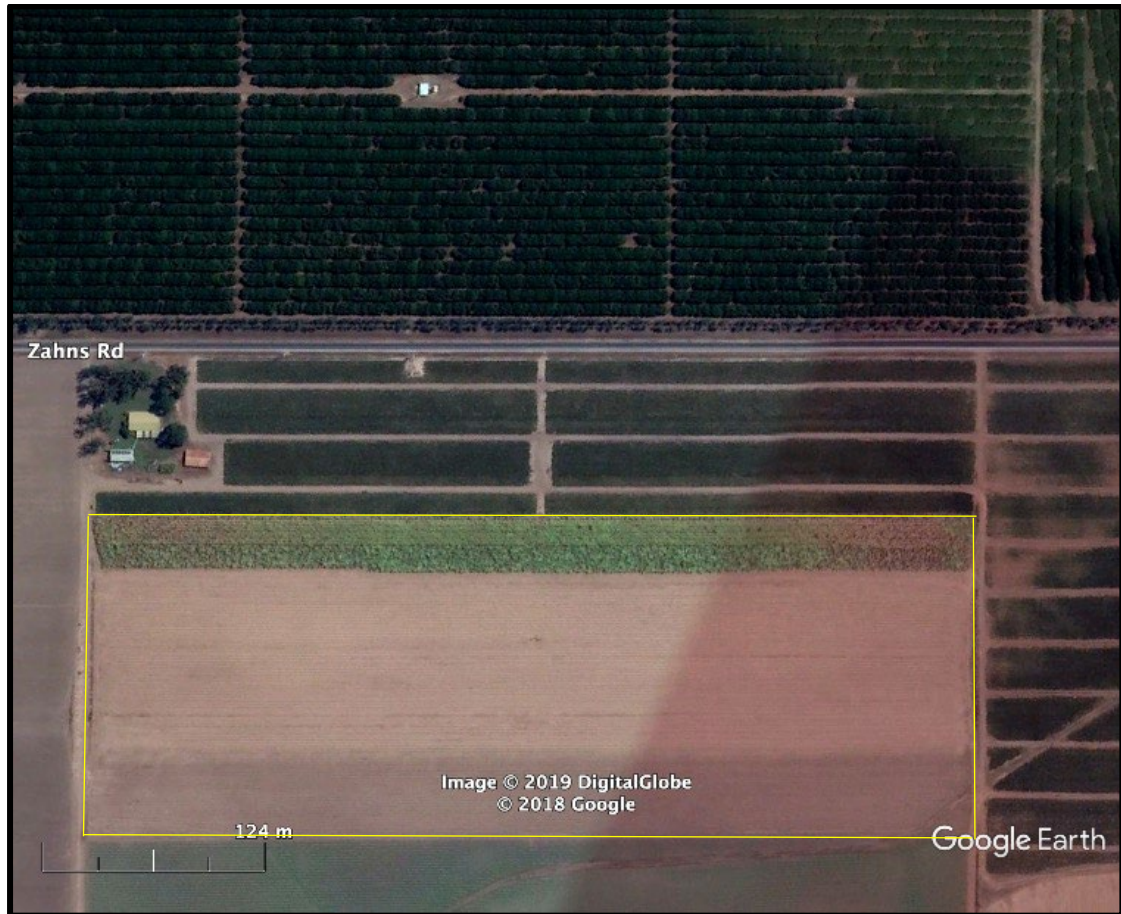
Outline: To introduce, develop and evaluate precision injection practices into pineapple planting systems targeting improved plant and root establishment.

Objectives:

- 1) To improve the methodology for better application of inputs in the planting operation.
- 2) To improve plant and root establishment in the initial six months of growth.
- 3) To improve the application of pesticide, fertiliser and root stimulants throughout the pineapple lifecycle.
- 4) To improve plant establishment in drought conditions.
- 5) To evaluate the cost effectiveness of injection and improvements in crop yield.

Methodology:

The principal purpose of injection at planting is to apply water, fungicide, liquid nutrient and root stimulant directly under the planting material. This research trial will investigate the precision application and impact of these inputs on plant and root establishment in the critical first six months after planting. This practice will be greatly beneficial in planting windows in periods of dry / drought conditions.



Trial location - Gooburrum Rd, Gooburrum

Demonstration Practice:

Treatment Number	Treatment
Treatment 1	Injection at planting Phase 1 – Injection with water Phase 2 – Injection with liquid fertiliser, fungicide and root stimulant.
Treatment 2	Standard practices – no injection

Assessment / Evaluation Method and Delivery Schedule:

Assessment and Evaluation Method	Assessment and Evaluation Delivery Schedule
Crop and root health assessment	Monthly for first six months
Yield Assessment	Plant and ratoon crop harvest
Cost analysis	Plant and ratoon crop yields

Progress Report:

Current Progress:

February 2020

Machine constructed and initial pilot tests undertaken

May 2020

Phase 1 - site planted

Treatments applied

May – September 2020

Root health measurements undertaken

May 2021

Phase 2 – site planted

Treatments applied

Issues Encountered: Will require modifications to planting machinery to accommodate injection.



Injector attached to spade on planter



Reservoir on front of planter

Results

Phase 1

The field at planting consisted extremely dry soil in drought conditions which inhibited root establishment and growth across treatment and standard. The volume of water applied through injection was 350 mL per planting hole. Results indicated the treatment has dramatically outperformed standard practice. Root volume has double in the treatment with substantially more root numbers and root length.

