The effect of groundcovers on survival of Banana rust thrips Chaetanaphothrips signipennis (Bagnall)

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Banana rust thrips
*Chaetanaphothrips signipennis* (Bagnall)

Banana Rust thrips colony locations
Can groundcovers be used to control rust thrips?
1. Is thrips mortality significant at the ground level?

2. What natural enemies are present in groundcovers?
Trial site South Johnstone Research Station
1. Is thrips mortality significant at the ground level?

2. What natural enemies are present in groundcovers?
Emergence traps
Thrips presence and Damage assessments
Thrips species collected from trial site

Banana rust thrips/Orchid thrips
*Chaetanaphothrips signipennis*

Flower thrips
*Thrips hawaiiensis*

Redbanded thrips
*Selenothrips rubrocinctus*

Grass thrips
*Anaphothrips sudanensis*

Photos: ozthrips.org
Thrips mortality was significant at the ground level.

Mean total thrips caught on top and bottom of emergence traps:

Error bars represent ± 95% LSD, \( p=0.011 \)
Bare Soil

Vegetative Ground Cover
No effect of ground cover on thrips numbers

Mean total thrips collected from bottom of emergence traps in ground cover and bare soil

Error bars represent ± 95% LSD
1. Is thrips mortality significant at the ground level?

2. What natural enemies are present in groundcovers?
Arthropod abundance across vegetative cover and bare soil

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<tr>
<th>Arthropod</th>
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<tr>
<td>Wasps</td>
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<td>Crickets</td>
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<td>Beetle larvae</td>
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<td>Ants</td>
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</tbody>
</table>

Total no. /4680g soil

Department of Agriculture and Fisheries
Mite diversity across vegetative cover and bare soil

- **Mesostigmata** – predatory
- **Oribatida** - detritivores, but nematophagy common
- **Prostigmata** – parasitic, some predatory
Potential Thrips Predators

Mesostigmata (Laelapidae)

*Cosmolaelaps* sp.
*Gaeolaelaps* sp. 1
*Gaeolaelaps* sp. 2
*Gaeolaelaps* sp. 3
*Gaeolaelaps* sp. nr *aculeifer*

- proven thrips killers
- breeding
- *G. aculeifer* used in glasshouse IPM
- No sign differences of numbers between ground covers
Summary of findings

- Four species of thrips associated with bananas
- Significant Banana rust thrips mortality occurs at ground level
- Vegetative ground cover (est. 1 year) had no effect on thrips populations
- Vegetative ground cover did increase abundance of invertebrates at ground level esp. Oribatid mites
- Five species of potential thrips predators were present
Banana rust thrips mortality

- Arthropods
- Insect attacking Fungi
- Nematodes
- Soil chemical physical properties
- Ground cover establishment
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