VALIDATION OF PESTICIDAL PLANTS (PPs) FOR FIELD CROP PEST MANAGEMENT: IMPROVING APPLICATIONS

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Presentation outline

- Introduction
- Objective
- Harvesting
- Extraction solvents
- Extraction Process
- Application
- Experiments (Lab & Field)

Why Pesticidal plants?

- Effective reduction of
  - crop damage & stored product losses
- Low cost
  - Harvesting takes time
- Less harmful
  - People and environment
- Efficacy varies amongst PPs
- Easy to source locally

Objectives

- Validate the farmers practices
- Optimise PPs processing and application

Harvesting/Processes

Sustainable harvesting

Avoid uprooting plants

Drying and Seiving

- Dry under shade

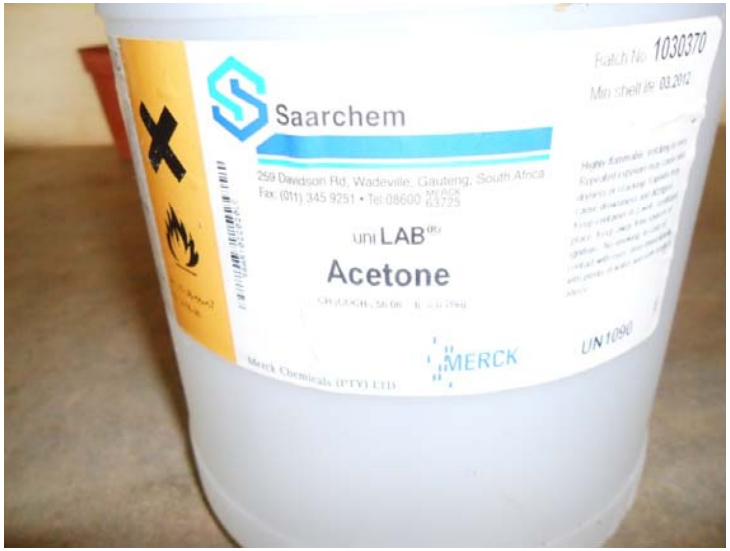
- Grind and seive

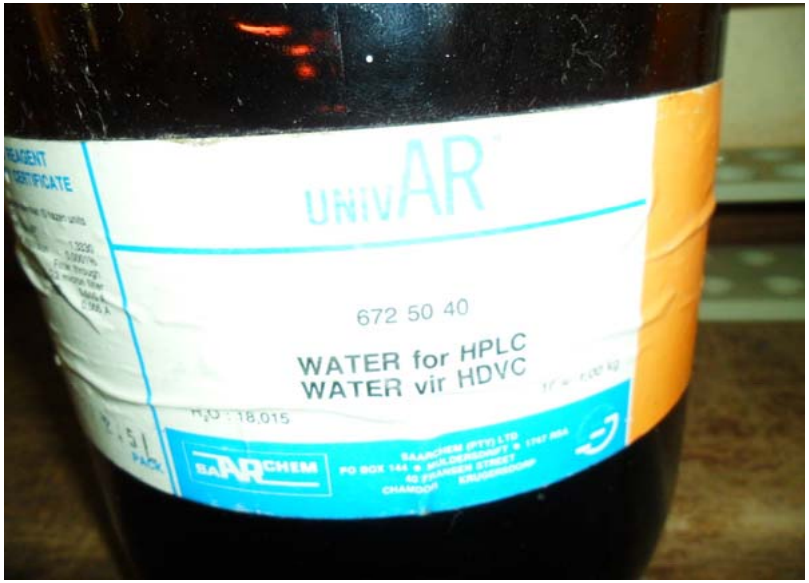
Local processing

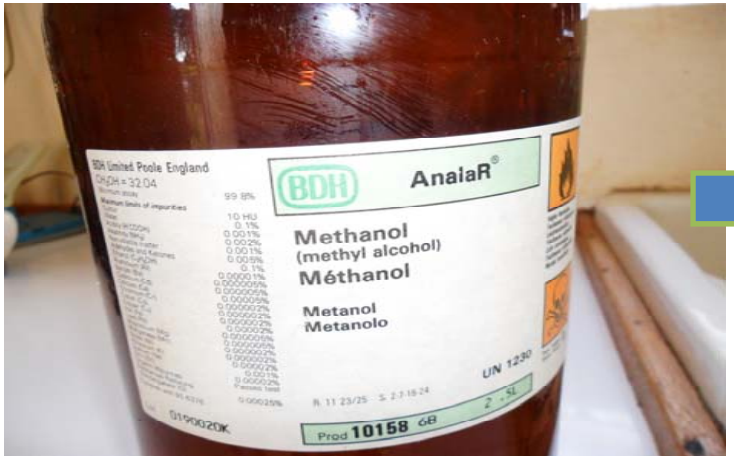
LABORATORY

- Extraction methods and application
- Using water
  - Cold
  - Hot
  - Hplc Water
- Surfactant (Sunlight Dish washing liquid)
- Methanol

SOME EXTRACTION SOLVENTS





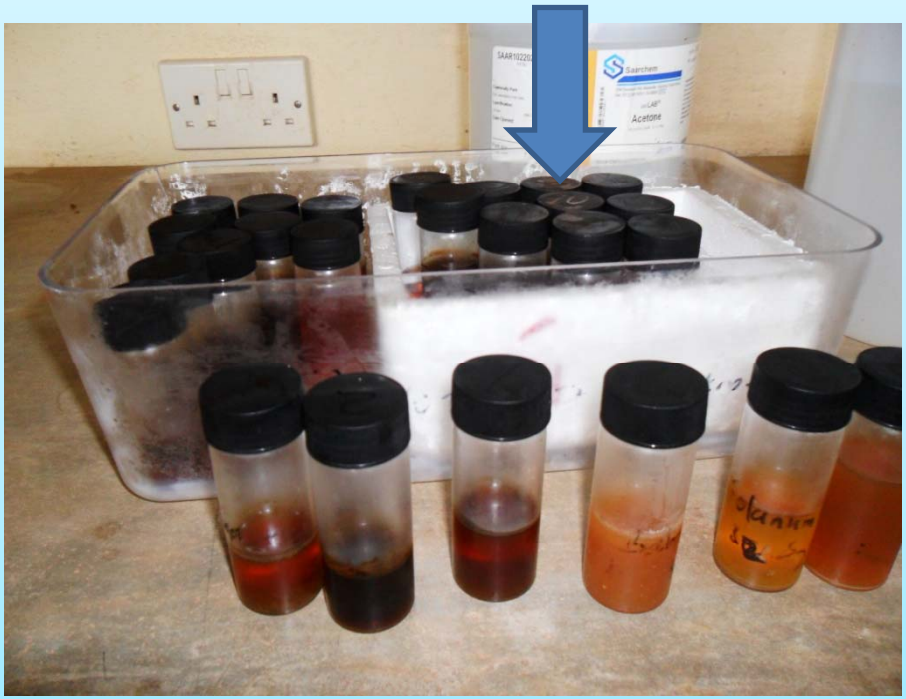


EXTRACTION PROCESS

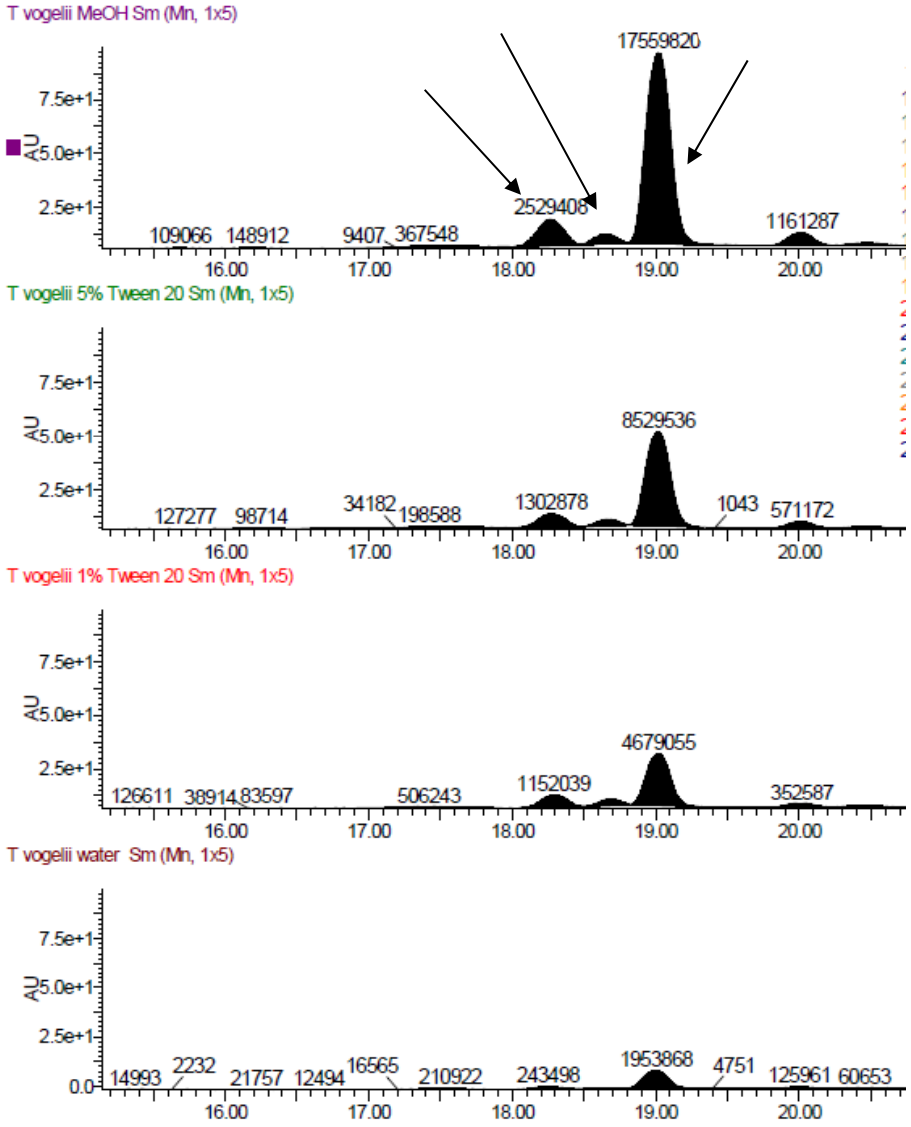
Storage after processing

EXTRACTION USING WATER

- Cold water
- Hot water



Optimising rotenoid extraction from *T. vogelii leaves*



Methanol extract

5% Tween

1% Tween

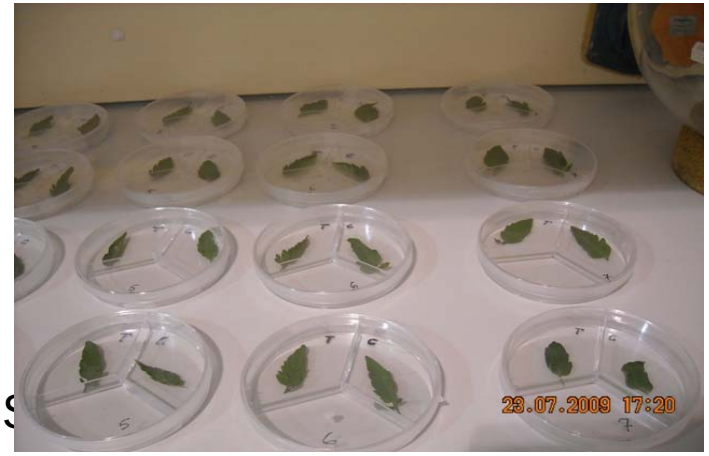
Water

LAB EXPERIMENTS

INSECT COLLECTION

VIAL SETTING

LAB EXPERIMENT……



Choice of equipment

FIELD TRIALS

Preparation of plant extracts

- 125 -200g dried products soaked in 5l of water for 12 hours
- Filtered through sieve and cloth
- Add 5l water and sprayed using knapsack sprayer
- Surfactant (Sunlight dish washing liquid) was added at the rate of 0.1%

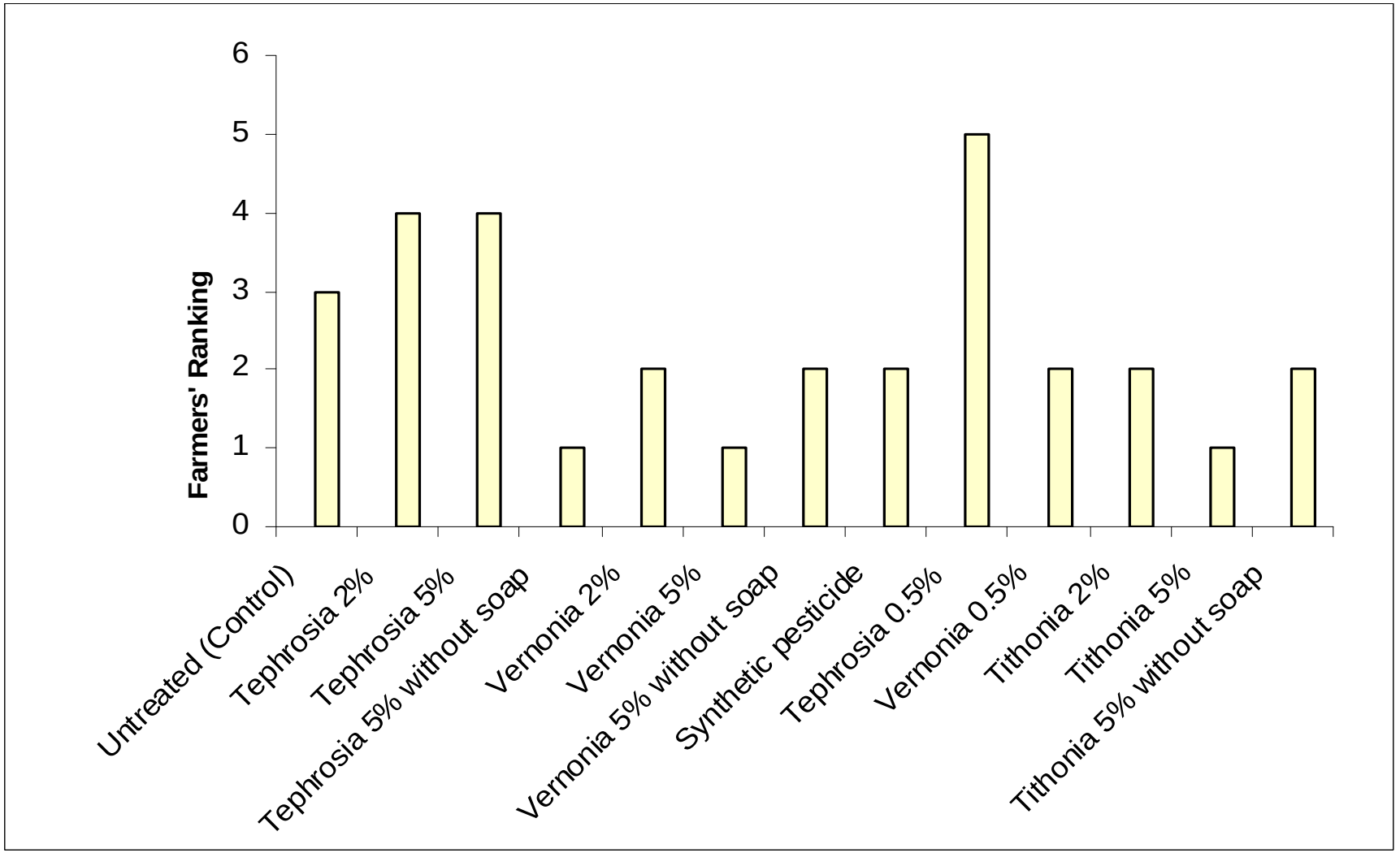
Data Collection

- Pest counts
- Crop damage
- Stand count (BSM)
- Yield

Pest count

Treatments	Redspider mites	Aphids
Tithonia diversifolia	31.0 b	6.75 b
Azadirachta indica	31.2 b	7.00 b
Tephrosia vogelii	35.8 ab	8.75 ab
Solanum panduriforme	37.0 ab	8.25 ab
Vernonia adoensis	31.5 b	7.00 b
Phoskil	11.8 a	1.5 a
Unsprayed	51.0 c	12.5 c
Mean	32.7	7.39
CV (%)	27.4	31.5
Significance	***	***

Farmers' Preference



Challenges

- Perception of PPs
  - Secretive info
- Weak policies
- Commercialisation??