

2022 FARMER'S DAY BY DUDUTECH & SATEMWA GROUP



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Table of Contents

Contents

Table of Contents.....	2
List of Figures	3
Introduction	4
Participants	5
Field Day Narration	5
Time schedule	5
Practical Demonstrations.....	6
Presentations Content	7
Field Day Highlights	9
Lessons Learnt.....	9
Annexures.....	10
Beauvitech Performance Report from Masawa Estate.....	10

List of Figures

Figure 1: Participant Distribution 5

Figure 2: Unsprayed (Thrips can be seen) 6

Figure 3: Sprayed (no thrips overtly noticed) 6

Figure 4: Inspection of nursery 6

Figure 5: Inspection of Mature fields 6

Figure 6: Barnaba Rotich from Dudutech making introductory remarks 7

Figure 7: Hilliard J. C. Kay making his presentation 8

Figure 8: Presentation Content 8

Introduction

Malawi Macadamia Association (MMA) had its first field day for the year on Tuesday, 20th September 2022 at Masawa Estate (Eastern Produce) and Thyolo Sports Club. The field day was financed and facilitated by Dudutech in collaboration with Satemwa Group with the aim of showcasing biological alternatives to agrochemicals in pest management. To kick start everything, the MMA chairman, Robin Saunders, welcomed all participants and expressed profound appreciation to Masawa Estate for hosting part of the event and to financiers of the event.

The field day was split into two sessions, first were practical demonstrations of Beauvitech at Masawa Estate and, second, were presentations by Dudutech and STIHL. The first session seemed to suggest positive findings in the use of Beauvitech in controlling Thrips populations on farms. The trials performed at the estate are likely to form a great launching pad for trials on other farms and possibly the eventual adoption of the solution in some farms. However, it was clear from demonstrations and the presentations that Beauvitech is not a replacement on all agrochemicals applied on macadamia leaves but should rather be used as a compliment.

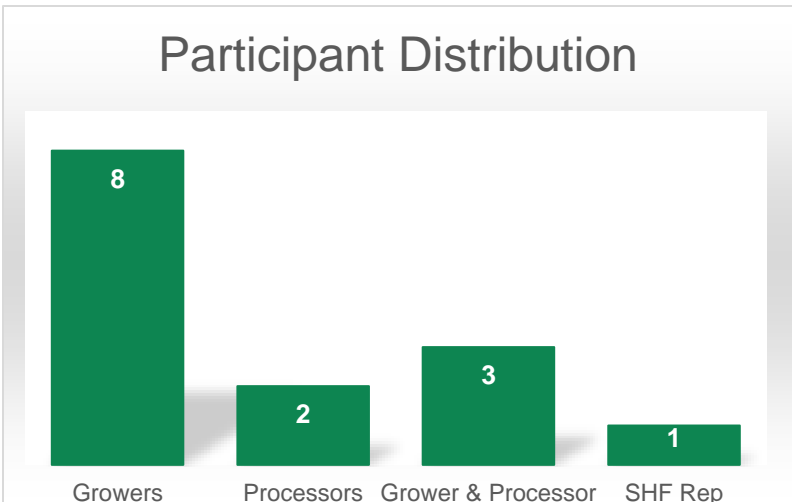
For the second session, participants were introduced to Dudutech (its mission, history and products) and the theory behind Beauvitech and other solutions were laid out in detail. Great emphasis was placed on explaining why biological solutions are a key component in having sustainable agriculture. In closing, a vote of thanks to the participants was given by Alex Kay, from Satemwa Group which is the local agent for Dudutech products.

Participants

The field day had 42 participants and 8 of them did not make confirmations with the secretariat prior to the event. For the confirmed participants, only 3 could not make it for one reason or the other. Overall, the event had a good representation of the industry due to the attendance diversity that included estate growers, processors and one smallholder farmer representative (NESMAC). It is worth noting that the event also served as a networking platform for the association’s membership to meet service providers from Dudutech and STIHL.

Though the participation was great in terms of numbers, there is need to improve the gender distribution; the entire event had two women in attendance.

Figure 1: Participant Distribution



Field Day Narration

Time schedule

The field day started on schedule at 09:30 and ended at 15:50 in the afternoon which was slightly after the intended closing time (15:30). The first session of the field day were practical demonstrations of Beauvitec at Masawa Estate and the second session had theoretical presentations that started at 11:45 at Thyolo Sports Club. Refreshments were served upon arrival at the sports club at 11:30 AM and lunch was served at 13:12.

Practical Demonstrations

Practical demonstrations for Beauvitech – a biological insecticide containing *Beauveria bassiana* used to manage thrips, whiteflies and other soft bodied insects – were done at Masawa Estate and were facilitated by Mr. James Kammwamba who is the general manager of Eastern Produce Malawi and Victoria Investments Limited. Participants were shown how application of Beauvitech has significantly reduced the population of thrips at Masawa Estate both on mature plants and at the nursery level. It was pointed out that though the results were impressive, there is need for a second round of application once another thrips action level is reached; this will confirm the effectiveness of Beauvitech.

Figure 3: Sprayed (no thrips overtly noticed)



Figure 2: Unsprayed (Thrips can be seen)



Figure 5: Inspection of Mature fields



Figure 4: Inspection of nursery



As a general rule of thumb, it was recommended to spray Beauvitech with milk to promote the development of fungus around insects. Furthermore, it was indicated that UV light inhibits the development of fungus by killing spore, therefore, spraying at night or before dawn is more desirable in having effectiveness with Beauvitech. Detailed findings of Beauvitech trials at Masawa have been placed in the annexure.

Presentations Content

The presentations at Thyolo Sports Club were facilitated by John Ogechah who is the Technical Product Manager at Dudutech. The presentations introduced Dudutech and showcased its IPM solutions for key challenges facing farmers.

Dudutech started operating in 2001 and that focuses on IPM by advocating for the smallest amount of chemical use and largest number of biological solutions in agriculture. The company believes that conventional agriculture is inherently unsustainable because of its emphasis on the chemical and physical aspects of soil while neglecting the biological aspect which is key to soil health. The company offers 360 degrees biological solutions to a crop's health, from root to fruit.

The facilitator defined IPM as a tool that utilizes cultural, mechanical and biological controls to deal with pests. During the presentations, emphasis was placed on mechanical and biological controls coupled with the products that are offered by Dudutech – a soft copy of the products will be circulated to the membership.

On mechanical controls, it was shown that farmers can use physical elements to control pest rather than application of agrochemicals or introducing biological solutions. Among these controls, farmers can use colored-sticky cards to trap pest, construct growing houses like green houses, and pheromone lures (pheromones are chemicals used by insects and other animals to communicate with each other).

Figure 6: Barnaba Rotich from Dudutech making introductory remarks



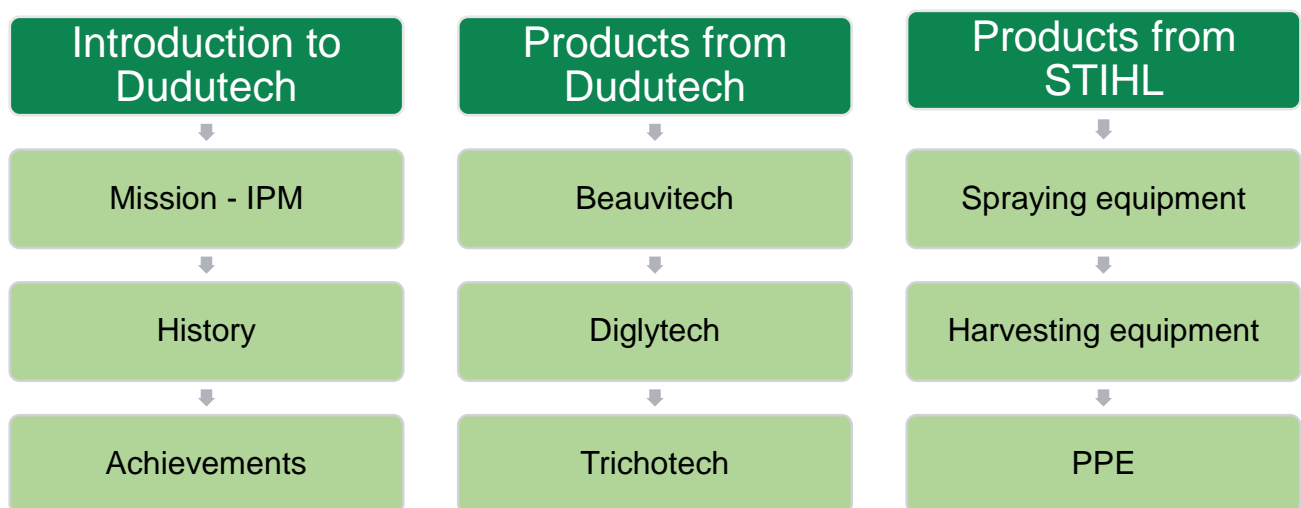
On biological controls, farmers were encouraged to use things like parasitoids; entomopathogenic fungi like Beauvitech that was demonstrated at Masawa Estate; and beneficial soil fungi such as Trichotech which helps to fight soil borne fungal diseases such as fusarium spp.

The last presentation came from STIHL and was done by Hilliard J. Cathcart Kay. It mainly outlined STIHL products that are helpful to macadamia growers and processors. Among these were spraying equipment, harvesting equipment and personal protective equipment. To find out more, check their contact details in the annexure.

Figure 7: Hilliard J. C. Kay making his presentation



Figure 8: Presentation Content



Field Day Highlights

- The field day was well attended
- Primary results of the application of Beauvitech for the control of thrips was promising, in light of the heavy infestation at Masawa and the reduction in pest incidence. Further trials are required however, for prolonged control.
- The participants were not passive, they initiated comments and questions.

Lessons Learnt

- EPM used a targeted approach on the thrips and the timing of the biological application was key.
- There is no silver bullet for macadamia pest or disease control. A spectrum of methods or applications will be required, using both biological and chemical controls, timing of applications is key based on the life cycle of the pest or disease, whilst also considering the phenological cycle of macadamias.
- Emphasize to field day facilitators to tailor make their entire content for macadamia players.
- Level expectations of participants when it comes to ordering drinks on the event's budget to avoid over shooting.
- Use such events to win more associate members.

Annexures

Beauvitech Performance Report from Masawa Estate

MALAWI MACADAMIA ASSOCIATION

FARMERS' DAY 20 SEPTEMBER 2022

BEAUVITECH PERFORMANCE REPORT AT MASAWA MACS ESTATE

1.0 INTRODUCTION:

Find below details and assessment of Beauvitech spraying as observed at Masawa Macs Estate.

- Spraying of Beauvitech at Masawa lasted from 7th to 14th April 2022 in all Macs fields.
- Rate of Beauvitech used was 0.125g/l translating to 0.25Kg/Jacto
- 1 litre of liquid cow milk was used per Jacto
- 89.5 Jacto Trips were done and 89.5 litres of milk was used
- 22.375 Kgs Beauvitech was used.

2.0 FINDINGS

Masawa initially had high levels of thrips in almost all fields before spraying Beauvitech. Scouting results showed that some fields had as high as 750 Trips above its Action Level of 150, before spraying Beauvitech but a significant reduction was noted after spraying. The table below justifies this after sampling a few fields: -

THRIPS LEVELS BEFORE AND AFTER SPRAYING BEAUVITECH AT MASAWA

FIELD	SCOUTING DATE (Before spraying Beauvitech)	THRIPS FOUND	SPRAY DATE	NEXT SCOUTING DATE (After Spraying Beauvitech)	THRIPS FOUND	% TRIPS REDUCTION
A	04/04/22	720	09/04/22	09/05/22	147	

B	04/04/22	640	09/04/22	09/05/22	90	
C1	11/04/22	690	13/04/22	09/05/22	100	
C2	11/04/22	690	11/04/22	09/05/20	78	
D1	12/04/22	720	12/04/22	10/05/20	100	
D2	05/04/22	650	11/04/22	10/05/20	80	
FIR1	12/04/22	750	13/04/22	05/05/22	96	
F2	01/04/22	530	09/04/22	05/05/22	310	
GIR1	01/04/22	710	09/04/22	06/05/22	66	
G2	08/04/22	600	12/04/22	06/05/22	57	
G4R1	01/04/22	630	09/04/22	6/05/22	42	
H2	01/04/22	520	07/04/22	07/05/22	198	
Nursery	02/04/22	165	14/04/22	06/05/22	43	
	TOTAL	8015			1407	82.5%

3.0 LESSONS LEARNT

Based on the Sample results above, observation has shown that there has been a significant reduction in thrips numbers after the application of Beautech from 8015 before spraying to 1407 after spraying representing 82.5% reduction.

At the nursery we sprayed and thrips numbers still dropped from 165 to 43 after spraying Beauvitech which gives trust for its efficiency to control thrips. There is need to apply again when thrips Action Level is reached to confirm its efficiency.

Further, Masawa on 14th April 2021 collected a mass of Two Spotted Bug eggs in Field FIR1 after the field had been sprayed with Beauvitech, on 12th April 2022. The eggs were reared but the eggs hatched.

Two Spotted Bugs and Nezaras were still being observed in fields sprayed with Beauvitech but currently not much.

4.0 WAY FORWARD AND CAUTION

Generally Beauvitech seems to be effective in reducing pests but more should be done to find out its effectiveness especially by carrying out experiments in the insectory / laboratory.

There is need to target specific pests such as thrips, borer or bug eggs/nymphs and spray using Beauvitech without spraying any additional chemical to see how it is solely impacting on the pests.

Adding of cow milk is a good initiative as it induces fungus growth. However, care should be made as local Vendors have a tendency to apply additives which may disrupt milk formulation and disturb enabling environment for fungal growth and development.

5.0 CONCLUDING REMARKS

Malawi Macadamia Association should continue promoting Field Days to let managers get firsthand information on new technologies and accord them chance to exchange ideas on spot.

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