Online

The Most Common and Misleading Statement Regarding Fruit Fly Control

When I talk with farmers about fruit fly control, the first question I get is the 'wrong one' – "*How much it cost?*"

Strange but they are **not** interested how effective it is! They are not interested in "*how much I lose because of using ineffective solutions?*". They are not interested in "*how much money can I do more if I use it*?".

I suppose they have already heard endless stories about "very effective solutions" that turned out to be 'very ineffective solutions". They lost the trust in declared or promised results. So now they believe no one. I don't blame them, I fully understand that approach.

The statement, which is following the above, and even before receiving an answer is – "*our farmers have no money*".

This question and statement show two things:

1. Farmers assume that all solutions are ineffective and result in high fruit fly infestation. Therefore, they compare **only the price!**
2. Many have no clue of the true (full) cost of fruit fly ineffective control. The main reason stems from a misunderstanding of the secondary economic loss resulting from loss of markets (in addition to crop loss).

In this article, I will refer to these two issues, in order to help us make informed decisions.

THE TRUE COST OF CURRENT FRUIT FLY CONTROL

1. My (i.e., mango grower) **current cost of fruit fly control**.

2. My total income loses today (due to ineffective fruit fly control).

Assumptions:

1. We assume that the excess expenditure, such as the cost of land, water, labor, and tree care remain unchanged.

2. To simplify things I use average numbers, which makes it close enough to draw a clear picture of the situation.

3. I apply calculations on a theoretical mango grower having 10 tons yield per hectare, and using one of the three most common fruit fly control methods:

(a) Sterile insect technique (SIT);
(b) Sprays and traps (often applied simultaneously);
(c) Bags

But first, to know '*how much we lose*' we need to understand our potential income, under the assumption that fruit flies are no longer a problem or pose a marketing limitation.

MY POTENTIAL INCOME

At an average yield of 10,000Kg per hectare mango, at a price of 1$/Kg (**for the export markets)**, the potential income is 10,000$ per hectare. Therefore, I will relate to 10,000$ as Potential Income per 1 Hectare of Mango.

We note that the price of 1Kg mango at local markets is typically 0.2$ (ranging from 0.1$ to 0.5$), which brings our Local Market Potential to 2,000$.

Now it is clear why we would like to reach Export Quality and Export.

MY CURRENT COST OF FRUIT FLY CONTROL – 3 METHODS

A factory for the production of sterile flies.

Sterile Insect Technique (SIT); –

- Cost of material and labor per hectare for each species of fruit fly: $ 1,000.
  We should assume a minimum present of 2 species of fruit flies present in every orchard around Africa and Asia. Therefore the total cost is minimum 2,000$.
- All projects of SIT involves also the application of chemical sprays and traps, which add an additional cost of 600$ per hectare.

Total Cost: $ 2,600 per Ha.

Current fruit damage by fruit flies in projects where *Bactrocera dorsalis* and *Ceratitis cosyra* are present and the protection method used is Sterile insect technique (SIT) is 30$ to 50%!!

Note, today there is no available laboratory species for most fruit flies. Development of such species for commercial use may take 20 to 50 years and an investment of over 100's of USD M.

SPRAYS AND TRAPS (the most common method)

Cost of material per hectare: Sprays $200 + Traps $100

Cost of labor per hectare: $300

Sanitation per hectare: $ 100 (often not applied)

Total Cost: $ 600 per hectare (without Sanitation)

Current fruit loss 30% - 90%, with an average of 50% **and limited (if any) ability for export** of fresh fruits.

Bags - wrapping each fruit with a bag.

Cost of material per hectare: 800$ per hectare.

Cost of labor: 800$ per hectare.

Total Cost: $ 1,600 per hectare.
Note that unlike other methods, with bags the cost of control per hectare increases with the increase of production, e.g. to control fruit flies for 20 tons per hectare will cost 3,200$.

Current fruit loss: <5%, with the ability to export.

MY TOTAL INCOME LOSS TODAY

As discussed above, the potential income per hectare is 10,000$.

Under SIT control regime, as well as Sprays + Traps control regimes the average fruit loss is 50% while using bags, infestation rate can be under 5%.

To calculate the TOTAL ECONOMIC COST OF FRUIT FLY DAMAGE we will combine:

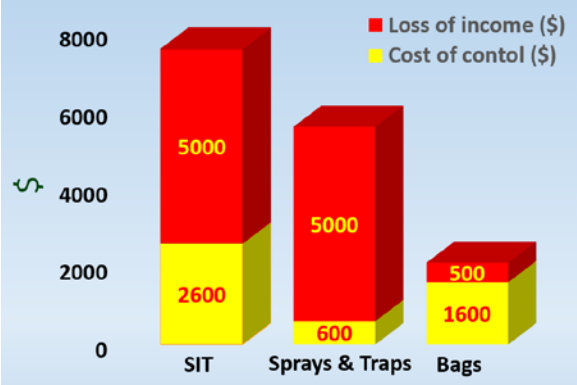
(a) The cost of fruit fly control.

(b) The cost of fruit loss and

(c) The cost of loss of export markets (sales only at local, low price, markets)

THE TOTAL FRUIT FLY COST PER HECTARE WILL THEREFORE BE:

- **SIT = 7,600$** (2,600$ + 5,000$)
- **Sprays plus Traps = 5,600$** (600$ + 5,000$)
- **Bags = 2,100$** (1,600$ + 500$)



Income loss ($) under common fruit fly control.

What do we learn from this exercise?

That cost of fruit fly control varies from 600$ to 2,600$. It is easy to see it and focus on it.

However, the real high loss stems from the high fruit damage (typically 50%), leading to inability to export, and therefore loss of high-value export markets, resulting in a drop of the maximum potential income to $2000 only!

But this is not all. In the above calculation, I assumed that the remaining fruit is sold at 'export price', while in reality it is sold locally at 'local price'.

So in practice, the potential income loss is often over 90% versus potential in export markets, leading to a total income in the range of 200$ to 1,000$ per hectare.

Fighting fruit flies is the first and most important stage, in developing export capabilities, resulting in developed high-income profitable agriculture in Africa and Asia.

To give fruit growers and nations a multilayer solution Biofeed brings a complete toolbox:

1. Apply an effective fruit fly control solution - *FreeDome* is our tool for achieving that.
2. Grow high-yield and high-quality produce - *Green Valley* project is our 'tool' to achieve that goal.
3. Export the quality produce to high-value markets - *Green Valley* projects is the 'tool' to achieve this target.

So next time we meet I hope to hear the following question: "***how much more can we make while using Biofeed toolbox for fruit growers?***"

Now you already know my answer; "*a lot more from export markets*" : -)

Regards,

Nimrod

P.S. Last week I have extended an Invitation to the President of Togo for a Demo-Day, where he will meet farmers taking part in Togo National Fruit Fly Project, and the members of Togo National Fruit Fly Committee.

This is following the ending of the second year of successful fruit fly control in Togo. The meeting is aiming to discuss future steps to help turn Togo into a significant mango exporter.

P.P.S. Your feedback is great and more requests for webinars keep coming in.

So this one is for you, because in-between my trips, I make special time for one more webinar, to help you understand how you can use recent changes in crop protection for your benefit.

>> How to turn a fruit fly into your cash cow << (link) is the webinar you have been waited for, and the one you need to get a full picture straight from leading experts who are changing crop protection as we speak.

P.P.P.S. From May 25 to June 5, I am in Ghana. I will participate in the ***GHrow-IL Agribusiness Innovation & Technology Summit***, June 3-5. For more information see the link http://www.ghrowil.org/ . Contact me now and let's meet.

P.P.P.P.S. We were invited to take part in ***GoforIsrael China-Israel Investment Conference Jinan 2019***. Dotan, our Head of Business, will represent us there (May 27-28), and then continue for more meetings at Beijing (May 29-31). I am glad that we finally reach out to China, and I invite you to save time for meeting with Dotan.

And once again, press here for registration to the life-changing webinar ***>> How to turn a fruit fly into your cash cow*** <<