

WE BELIEVE IN QUALITY WHICH LEADS TO RESULTS

MAGGOT PRODUCTION GUIDE



Prepared By Thomson Zulu

MBA, BSc Prod Mgt, KCN

Call Us on 0974847338 or 0965075873

Introduction

Maggot farming has become a rising aspect of farming because of its immense benefit to livestock and crop farmers all over the world. Some decades ago, if someone had told you that those maggots can be raised to make money, I wouldn't believe that myself.

But here we are, Maggot is turning broke people to millionaire farmers. Don't let the sight fool you, millions are staring at you in the form of nature's amazing maggots. They are your usual housefly larva, easy to feed and manage with less input. Maggots are produced from wastes and this calls for integration so as to boost sustainable Agriculture. In other words, without wastes, there are no maggots. The objective of every farmer is to maximize profit and you will agree with me that feeding alone accounts for about 70% of the total cost of animal production and if you can be able to reduce this feeding cost, then, you can make more profit...and one of the ways you can do this is via maggot production.

Maggot is the larvae gotten from domestic flies and a farmer needs the facilities to engage in the mass production of maggots. Though, the construction of a maggotery can be cost effective. Most livestock farmers like fish and poultry now purchase a large number of maggots either dry or fresh and add them to their livestock feed or feed them directly to the animals. Maggot is a major source of protein and other natural nutrients that animals need to perform their daily activities.

Maggot farming currently not too competitive like sago worm because most people are not aware that its possible to farm Maggots and make money from it, talk more about making millions. The truth is that it is possible if you do it correctly.

This is the right time to venture into this business and build a sustainable brand. You must have become a household name before people start flooding the business. Now that your heart tells you to start, let's talk about all you need to start.

Maggot Nutrient:

- Protein
- Lysine
- Calcium
- Potassium
- Phosphorus
- Magnesium
- Copper
- Zinc
- Fatty Acid
- Amino Acids
- Iron

Uses of Maggot:

- Maggot is an alternative to feed fish
- It is use to feed various **poultry** like chicken, turkey and duck
- Maggot also serves as an excellent replacement for fishmeal in feed production.
- It is a potential solution to waste management on the farm because the waste is the raw material to produce maggots.
- Maggot provide fertilizer for crop production

How to Start Producing Maggot:

Select Location: Select a location with vegetations like trees and leaves so that they can help to absorb the odour from your pen. Check for termites and other predators that can feed on your maggot and installed protective measures.

Construct Your Housing:



Pic; collection of Maggots

Construct housing to suit your space and scale of production. You can construct a small open house with a roof. The floor of the pen house should be floored with concrete.

Things to consider in building a maggotery

Site selection: because of the smell and bad odour associated with the maggotery, it can not be done anywhere/everywhere. It should be located, preferably, away from human residence. It should be erected in places where there are trees or surrounding vegetations as these help to absorb the offensive odour from the maggotery and reduce the ambient temperature.

Housing: the building should be oriented in the east-west direction to reduce the effects of the sunlight on the substrates.

So, specification of the housing is: a building with opening at the top and sides for proper ventilation. The roof can be made from corrugated iron sheets or thatched; and the following dimensions can be used (can be altered to suit you):

- *3m from the top to the feet of the building.

- *3.2m from the floor to the ridge of the building.

- *the walls of the building are short (maximum of 3 block coaches) and are open sided to enable aeration.

NOTE: as the building are open, predators can come in to steal your maggots such as birds, rats, lizards, etc and as such, you have to protect it with nets so that when birds or other predators get in, they get trapped and are then used as fly attractants.

You can start by using plastic drums as substrate drum and collecting drum. construct drainage around the pen house to prevent termites, lizard and rats from accessing your pen and causing damage.

Collect Your Raw Materials: Poultry dropping is the most popular raw material for maggot production. You can get poultry dropping from poultry farmers within your location for a small fee.

Introduce the dropping and fly attractant into the substract tank after collection. Rotten fruits and food is also a good alternative to poultry dropping and they are excellent attractant.

Production Process: Here is how the magic happens!

- Adult female flies lay up to 2500 eggs under controlled condition.
- They lay their eggs on the substrate (Poultry Dropping)
- The eggs hatch after 8 to 12 hours.
- The larval stage lasts about 5 days while the pupal stage for 4 to 5 days.
- The housefly has 6 days cycle under controlled conditions.
- Water the substrate daily to increase production.
- Maggot is ready to harvest within 4-5days.

Feeding:

- The adult fly feeds mainly on decaying organic matter.
- Maggots feed for 4-5 days and then migrate to pupate in a dry place. ,
- The flies mate and lay eggs between feeding periods.
- 450 grams of fresh manure can feed 1500 maggots

Harvesting:

You will see your maggots clustered as ant hill, so, you use a 'parker' or a tray, sweep the clustered maggots into a bowl containing water and a sieve. Place your maggots into the bowl and then sieve out the little substrate which will be floating. Decant the water and then you have your maggots left in the bowl.

Now, after harvesting your maggots, you must feed them immediately to your fish or birds except you are preserving or processing. If you leave them fresh, they will turn to pupa which will later turn to housefly. Remember that the maggot is gotten in the life cycle of a housefly and if there is delay in feeding your animals with it, the lifecycle continues and then you end up having much housefly or you end up multiplying the houseflies in your maggotery.

You can harvest maggot with three different methods;

- The flotation method where the manure is mixed with water and the larvae and pupae float out to be collected with a sieve.
- The screening method where the manure is spread in a thin layer on a sieve (3 mm) placed over a basin under sunlight: the larvae try to escape the light by passing through the screen and fall into the basin.
- The self-collect method is where the larva is trapped by collecting tanks when the larva is trying to escape.

NOTE that as the maggots are produces, some of them may stray away. To prevent this, you need have some surrounding cannals around your maggotery and these cannals should have water and should house some some fishes (tilapia, catfish or carp fish). As the maggots stray away, they fall into the channals and are then consumed by the security guards...the fishes. By doing this, no maggot is lost. The above concept is called the ZERI (Zeri Emission Research Initiative) Concept where nothing is lost to protect the environment.

Storage:

You can store your harvested maggot by washing and parboiling the maggots to remove and kill pathogens. Dry them using either the sun or the oven. After drying, put them in airtight containers and store in a dry place.

Market/Sales:

Introduce the maggot to farmers in your location and use social media to network with other farmers. Selling dried maggot meal will provide the opportunity for you to brand your product with packages and increase sale.

Factors affecting the yield of maggots

Season: the production of maggots during the dry or harmattan season is usually low.

Temperature: the lower the temperature, the less maggots produced. The production of Maggots is best in the temperature of 30oC and above. If the temperature falls below this, yield is affected negatively.

Humidity: production is better in humid conditions.

Quantity of fly attractants: the more attractants, the more maggots produced.

Quality of fly attractants: some attractants attracts more flies than others.

Predators: the more they are, the lesser your yield.

The operators' skill: if the operator is not skillful enough, he/she may miss the target as at the right time to harvest.

USE OF MAGGOST

Maggots can be used in feeding fishes, poultry and also in feeding other animals via maggot meal

or even feeding then fresh. Grasscutters which have difficulty in digesting/utilizing animal protein digest maggots especially in the form of maggot meal (mixed with concentrates).

CHEMICAL COMPOSITION OF MAGGOTS

Dry matter-24.7%

Crude protein-47.5-60%

Minerals-9%

Lipids-93.2%

Ash-23.2%

Ca-1.5%

P-1.2%

Mg-0.3%

PRESERVATION OF MAGGOTS

The best method of preservation is sun-drying. When, they dry, you can incorporate it into any feed and feed your animals. Alternatively, you can oven dry or you steam them and sundry (so they will not escape). These ones have effects as the protein content of the maggot is slightly reduced. However, when you just sundry, most will stray. So, you can oven dry or steam and sundry so that they do not stray away. You can also crush into meal.

MAGGOT MEAL

After harvesting the maggots, you can steam them and dry or them and steam and then oven dry. After, you can mill your maggot into meal (powder). This is even consumed by man because of the high nutrient content via tea, coffee, pap, etc.

Constraints of maggot production

The constraints to the production of maggots include but not limited to the following:

Water logging of substrates during production: this affects yield hence the use of dwarf wall is vital. You can also use wind breaks in places where rainfall is accompanied by wind.

Harmattan or dry air: they dry the substrates faster, hence the reason for low yield during dry season. To avoid this, you water the substrate frequently.

Direct sunlight on substrate: cover the open sided walls with bamboo sticks or palm fronds or dark colored plastic sheets.

Soldier ants: the solution to this is to maintain water regularly in the channel. They cannot cross the cannal as they will only serve as feed to the fishes if they try.

Birds: use of traps or nets is vital to catch these birds or rats or lizards.

Human vigilance: this is vital to ensure you harvest when you're supposed to harvest. This is also vital as people may enter your maggotery to steal your maggots.