



George Muturi demonstrates the art of rearing worms and insects. Photo Credit: Comfort Worms and Insects FB

Kiambu youth finds profitable venture in worms and insects

By Zablon Oyugi

WITH the increasing need for nutritious food and a shift to sustainable methods of agriculture production world over, worms and insects rearing has never been so inviting among farmers seeking for new and untapped streams of income.

In Kenya, this venture is especially becoming popular with the youth and women farmers owing to the growing attraction of organic farming and the need for cheaper nutritious animal feeds.

A 2021 report by Australian Centre for International Agricultural Research showed many women and youth agripreneurs Kenya were finding newer, cheaper and environmentally clean way

of producing food and feeds by rearing insects such as black soldier flies, earthworms, crickets, and African Nightcrawlers.

George Muturi, 28, is one such agripreneur who has mastered the art of rearing worms and insects, a venture that earns him income from direct sales to other farmers and supporting his poultry and pig enterprises.

“Rearing worms and insects is becoming more and more appealing to me. I continue exploring it is yet to be fully exploited in the country,” said Muturi who is currently raring black soldier flies and red earthworms.

How he started

In 2013 after completing his secondary education Muturi decided to venture in vermiculture (rearing of earthworms) to raise money he needed to advance to higher levels of education.

The idea was sold to him in 2015, two years after starting rabbit and poultry farming, by a farmer in the neighbourhood.

The farmer was raising the worms and using them to break down cow manure to apply on his kitchen garden and sold the surplus.

Within a portion of family land in Kagaa, Kiambu County, he would restructure one of his old rabbit sheds

at a cost of KSh500 (about USD 3.8) before buying some two kilos of starter worms at Sh2,500 from the farmer.

“This is how cheap I discovered starting off in vermiculture would cost me and I wasted no time,” said Muturi.

The worms feed on household or farm wastes which they convert into affordable organic fertiliser called vermicompost that he sells to other farmers for crop production.

“The products are liked by farmers especially those who run kitchen gardens as the dark, rich, earthy smelling fertiliser and foliar amends soils given they are full of both primary and micronutrients readily available to plants,” said Muturi.

Worm castings also improve the physical property of the soil by improving tilt, ferocity and moisture-holding capacity of the soil, according to Dr Freddie Acosta, a Senior Lecturer of Technology and Innovation Management at Strathmore Business School.

Besides, adding vermicompost and vermiliquid to soil reduces insect pests and plant diseases in certain field and greenhouse crops, including corn, wheat, pea, cucumber, and tomato.

Possible economic returns

One kilogramme of earthworms (approximately 1,500 worms) fed very well and given the right moisture and protection from predators at the beginning of January can multiply and increase their number to approximately 4,000 kilogrammes at the end of December.

“To avoid choking or dehydrating the worms, the organic waste materials that they feed on should not be too dry or too wet,” said Muturi

For the cow manure, the worms’ main feed, a handful can be squeezed in between the fingers to gauge its moisture content. It is best if it releases some few water droplets.

The farmer says that after weeks of feeding this type of feed, a farmer can produce tonnes of organic fertiliser every day, depending on the number of worms per unit and the amount of organic wastes they are fed.

For Muturi, he harvests 100-150 kilos of vermicompost a month, which he sells at KSh70 a kilo besides selling 10 kilos of the worms to other farmers every month at KSh2,000, making KSh20,000 a month.

Currently, he has 17 units measuring 7x3x2 feet constructed with timber sideways and at the bottom fully packed with worms and organic wastes.

The units, which are neatly built in a triple decker format to maximise the limited space, are raised from the ground with posts oiled four feet from the ground to prevent them from rotting and keep away predators like safari ants which attack the worms.



For the cow manure, the worms’ main feed, a handful can be squeezed in between the fingers to gauge its moisture content. Photo Credit: Zablun Oyugi

He has also bought a modernised tuktuk and motorbike which help him with movement of goods besides a mechanical machine which he uses to properly sieve the broken down compost from the worms and their eggs and bigger not-yet-broken-down organic wastes.

“These worms and their eggs are very delicate thus the need for a proper way to separate the compost from them and other unbroken down particles. This machine has been serving us efficiently as it can do three tonnes a day,” said Muturi.

Black soldier flies

Besides the earthworms, he is also rearing black soldier flies (BSF) for the benefit of his poultry and pig farming.

The BSF larvae serve multiple purposes: they help in breaking down organic waste into valuable compost, which can be used to enrich the soil, and they provide a high-protein feed source for his chickens and pigs, further helping him cut down on the production costs.

“During their larval stage, these insects consume a significant amount of organic

waste, producing organic fertiliser. The larvae themselves are highly nutritious and make excellent feed for my chickens and pigs,” said Muturi.

Azolla cultivation

The enterprising farmer is also growing azolla, one of the seven species of aquatic ferns in the family of Salviniaceae in some small constructed pods within the compound.

The green plant, which is good feed for cattle, pigs, rabbits and poultry, is propagated vegetatively and grows vigorously to maturity in just about 14 days.

“We only feed it with vermicompost from our worms’ yard. This speeds up its growth and in two weeks time, I harvest it to feed my pigs, rabbit and chicken and sell some to the neighbouring farmers at Sh200 a kilo,” said Muturi.

The free-floating aquatic fern can also be used as a bio-fertiliser.

Worms structure set-up services

Muturi has since started his own startup, Comfort Worms and Insects, through which he is designing a simple three-

in-one vermiculture system for kitchen gardeners at a fee using three buckets that enable the farmers to rear the worms and collect vermicompost and vermiliquid in separate buckets.

Muturi installs the system for other farmers at Sh4,500 for the 20-litre buckets and Sh6,000 for the 50-litre bin.

Descent life

The young farmer’s venture continues to grow, affording hi a decent life in the rural Kagaa area. He has two permanent employees and hires casuals running up to 10 individuals on need basis.

At the time of PanAfrican Agriculture’s visit early July, he was constructing a three-bedroom permanent house.

“I am happy the farm is currently running itself and I’m able to earn some profit and pay my farmhands besides training youth from the area to embrace farming,” said Muturi.

His advice to his fellow youth is that there is great opportunity in farming at every point of a given value chain.

