



THE FRUITS AND VEGETABLES INDUSTRY SERIES



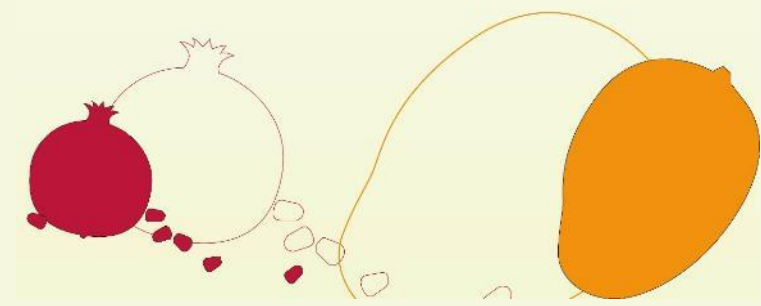
Session 5

11 October 2023

Innovations and technologies to reduce food waste and losses



FRUIT AND VEGETABLES SCHEME



A solution for future proofing proteins in Africa

INSECT  PRO

You will bug for more, I promise

InsectiPro facts



Founded in
Oct - 2018



Located in
Kenya



Employing
>150 people



Caring for
>1 billion insects

We are beyond farmers,
we are food changers.

NUTRITIOUS PRODUCTS | CIRCULAR PRODUCTION | INNOVATIVE THINKING | IMPACT DRIVEN

Our journey.

You'll bug for more. I promise

Meet our change makers

Change makers requirements:

- Nutritious
- Circular
- Sustainable
- Profitable



BSF



CRICKETS



**“BY IMPLEMENTING INSECTS
AND INSECTS PRODUCTS
INTO OUR CURRENT FOOD
SYSTEMS, WE CAN PRODUCE”**

INSECT  PRO

More food on less land

More food with higher nutrients

More food sourced locally

Impact industries



InsectiPro Feed

To improve quality raw materials input for the livestock industries to increase productivity and improve the life of farmers in Africa.

Together with our change makers we focus on impact in various industries



InsectiPro Food

Offer alternative high nutritious food products, that are available, accessible, affordable for everyone.



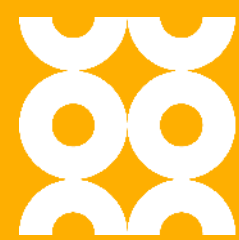
InsectiPro Consult

We are actively involved in projects to help improve the entire food value chain together.



InsectiPro Agri

To improve quality of soil and productivity of crop growth and find a balance between agriculture and nature.



**INSECTIPRO
FEED**

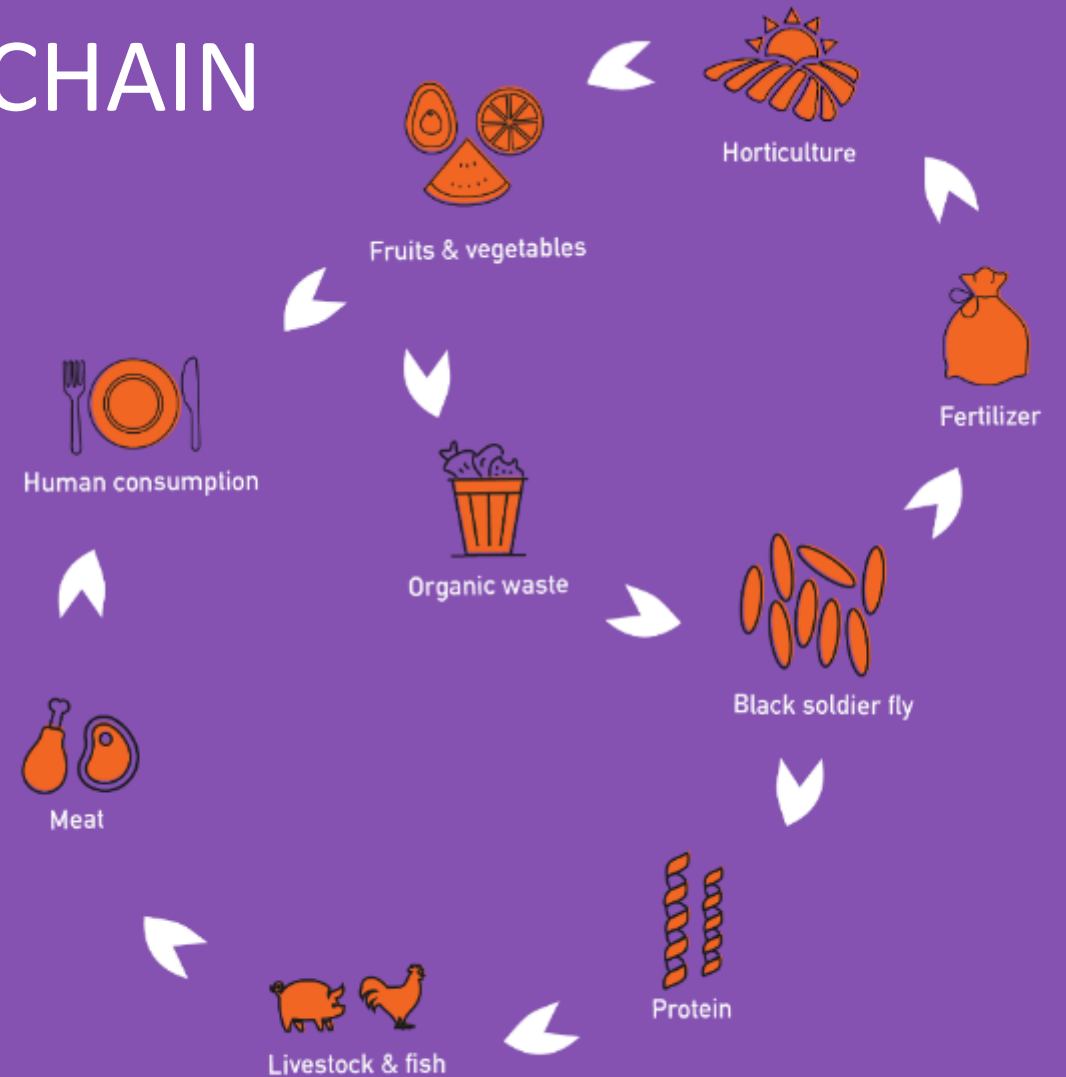
BSF

Converts organic waste into 2 products:

1. A sustainable, nutritious, safe and local source of animal protein.
2. A highly nutritious and organic Frass fertilizer.



VALUE CHAIN



Our solution

Dried BSF larvae



“BSF is amazing. My pigs grow faster, are healthier because they can easily digest the BSF and above all, they really like it!”

Douglas - pig farmer

- BSF is a source of protein that contains upwards of >40% protein.
- It contains essential amino acids such as Hystine, Lysine and Methionine.
- BSF is low in fiber and high in fat content (20%). It contains mostly lauric acids, which builds better immunity and is high digestible.
- BSF is produced at an industrial level, thus no adulteration and production year round.
- Adult flies can't sting or bite and do not transfer any diseases.

IMPACT DRIVEN

Year (Kenya)	waste	BSF	Fertilizer
By 2020	3,000 kg/day	100 kg/day	400 kg/day
By 2023	90,000 kg/day	3,000kg/day	12,000 kg/day
By 2025	330,000 kg/day	11,000kg/day	44,000 kg /day

Feed
9M chicken
a year

11,000 kg of BSF protein a day can feed around 9M chickens a year.

Upcycling
120,000 MT of
waste a year

Each kg of dried BSF converts around 30kg of waste into high value products.

Compost 13,000
acres a year

44,000 kg fertilizer daily can fertilize an average of 13,000 acres a year.



BSF



INSECTIPRO
AGRI





IMPACT ON CROPS

- Small scale trials across different agro-ecological zones of Kenya have demonstrated higher crop vigor, growth rate and chlorophyll concentrations of maize, bell pepper, amaranth, and potatoes growth (26 – 31%).
- Nutritional assessments indicate that vegetables grown using Black Soldier Fly (BSF) Frass fertilizer (BSFFF) had superior nutritional quality in terms of proteins and minerals compared to those grown using commercial organic fertilizers.
- Bacterial disease reduction, research has shown that BSF chitin can reduce bacterial diseases by 30% and 35% respectively.

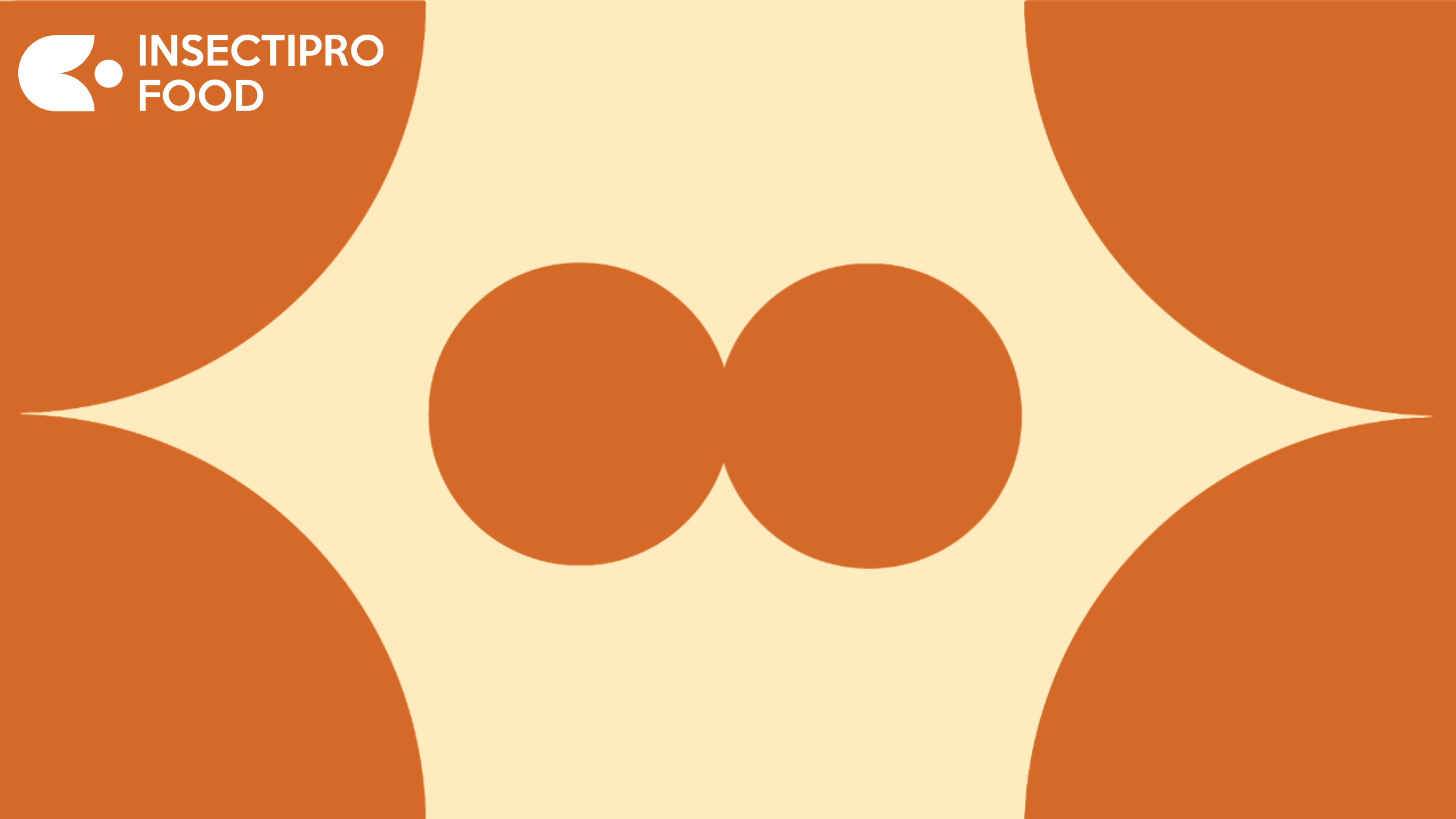
MORE RESEARCH ONGOING WITH
DIFFERENT FARMERS LIKE TEA, MAIZE
& SORGHUM

KEIT TRIALS 2022



MERU TRIALS 2022





INSECTIPRO
FOOD

CRICKETS

- 2 billion People eat insects already
- People have been eating insects for decades and since 2020 approved for human consumption in Africa

RESOURCES NEEDED



30.000 l



40 kg



250 m2



3500 l



7 kg



55 m2



15 l



3 kg



15 m2

WHY CRICKETS?

We aim to make crickets, accessible, available, appealing and affordable for everyone.

With more insect products to come!



- Crickets are easily produced into a powder and can therefore easily be implemented into people's diets.
- Crickets have up to 69% protein and contain all 9 essential amino acids. They contain more zinc and iron than both animal and plant proteins. Anaemia in Kenya, potentially due to low iron intake, 26.3% of pre-school children; zinc deficiency affects 83.3% of pre-school children, 80.2% of school-age children.
- Insects are perceived as a cultural meal and are a delicacy in the DRC, Central African Republic, Uganda, Zambia, Zimbabwe, Nigeria, South Africa, and Kenya.

BUT HOW TO MAKE THE SHIFT?

INTRODUCING NEW PRODUCTS



Urbanizing and branding crickets in a new way. Currently available on Greenspoon, an online grocery store.



Research showed that people are more willing to eat crickets if it is in powder form. Introducing cricket powder this year.



JKUAT is performing a research on the health benefits of cricket based porridge. Higher in protein and lower or carbohydrates.

MARKET OPPORTUNITY

The global BSF market is expected to reach ~\$2.6B by 2030.

The global edible insect market exceeded \$112M in 2019, and is rising at a 47% CAGR between 2019 – 2026.

Climatic conditions ideal for insect production in SSA. Tropical climate around is conducive for rearing BSF and crickets.

Access to inputs and labour costs ensures production costs are low.



Future implications of protein production



Scale to unlock
competitive pricing

Sustained market
development

Knowledge transfer
B2C

Better inclusion
rates

Consistent raw
material supply

Regulatory
environment

InsectiPro is where
sustainability and profitability
meets making us the company
of the future.

Still Bugging for
more?

Contact us

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 /Insectipro

 /insectipro

Let's talk! We don't bite.





THE FRUITS AND VEGETABLES INDUSTRY SERIES

Thank you



FRUIT AND VEGETABLES SCHEME



The OECD-COLEAD Fruits and Vegetables Industry Series focuses on market access conditions and opportunities for the fruit and vegetable sector, especially for fruit and vegetables producers and exporters from ACP-countries. This activity is supported by the Fit For Market Plus programme, implemented by COLEAD within the Framework of Development Cooperation between the Organisation of African, Caribbean and Pacific States (OACPS) and the European Union.