



Taking Insect Farming to the Next Level

Harnessing the Natural Potential of Insects for Novel Bio Solutions and a Sustainable Future

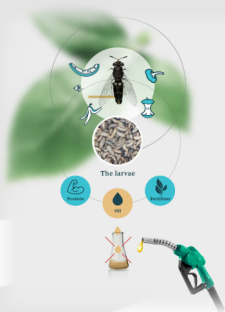


BugEra stands at the nexus of insect biotechnology, paving the way for a sustainable future. Using genetic engineering, BugEra improves the natural traits of the Black Soldier Fly (BSF) to augment biomanufacturing, enables the expansion of the BSF market to novel applications and biomaterials, based on innovative circular-economy principles.

Overview

- BugEra is a world leading BSF genetics company and the producer of novel BSF strains built on the innovative Modified Black Soldier Fly (M-BSF) Platform to expand the BSF market to novel applications and biomaterials.
- Rooted in Beer Sheva, BugEra is a U.S. – Israeli start up founded in 2021 and is an offshoot from the Life Science Department at Ben-Gurion University (BGU).
- BugEra's first BSF x 2 strain enables the connection between two markets – insect farming and biofuel. It does so by using BSF oil as a novel, most sustainable lipids to the renewable fuels market.
- BugEra is a global BSF solution provider for expressing valuable substances or molecules by utilizing BSF as a bioreactor to meet the need of novel markets.
- The utilisation of BSF as a bioreactor will allow producing vaccines, functional feed and anti-microbials at a large scale.
- If BSF oil can capture even 1% of the lipid demand by 2026, it would be worth nearly a 1 billion dollar opportunity.

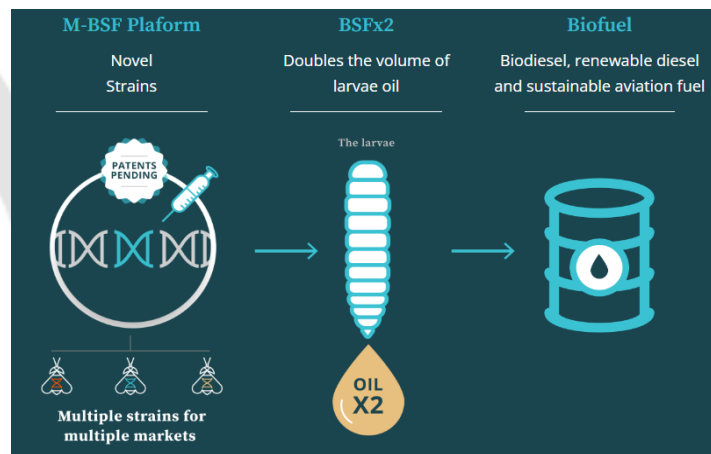
The Need



- The global climate crisis, together with the growing human population presents an existential threat that has never been encountered before.
- Transitioning to a circular bioeconomy with proper waste-management systems plays an essential role in overcoming these challenges.
- Expanding dynamic insect farming can potentially provide efficient nutrient recovery from diverse organic-waste streams and decrease greenhouse emissions (GHG).
- Oil from BSF x 2 can reduce the biofuel carbon footprint of currently used crops oils by 80%, therefore generating significant carbon value for the biofuel industry while increasing organic-waste recycling.
- The composition of BSF oil is a perfect fit for the biomass-based fuel (biofuel) industry, including biodiesel, renewable diesel and sustainable aviation fuel (SAF).
- BugEra technology enables the connections between the BSF industry and of the biofuel industry, provide alternative to crops oils while increasing organic waste recycling.

Technology & Business Model

- BugEra leverages state-of-the-art genetic engineering to develop novel black soldier fly (BSF) strains.
- BugEra develops a patent-pending modified BSF platform (M-BSF Platform) that promotes the development of multiple strains for diverse verticals.
- The M-BSF platform gives rise to novel, sustainable and safe products. By promoting the upcycling of organic waste, circular economy principles and little infrastructure overheads, BugEra’s business model is sustainable and elastic.
- BugEra’s pioneering product, the BSFx2 strain, is designed to address the burgeoning demand for biofuel.
- BSFx2 doubles the oil yield of black soldier fly larvae.
- This breakthrough not only eliminates major economic obstacles but also transforms organic waste into a viable, eco-friendly oil source for the biofuel sector.
- With BSFx2, BugEra is bridging the gap between the black soldier fly and biofuel industries.



Black Soldier Fly (BSF)

Our hero, is a harmless fly and is the leading species in the insect farming industry because of its unique ability to upcycle organic waste from almost any origin into high-quality protein and oil sold for farm animals, aquaculture and pet feed.

Biomass-based fuels

A family of biofuel products (biodiesel, renewable diesel and sustainable aviation fuel) that decrease GHG by as much as 80%, but are dependent on unsustainable oil crops like soy, corn, and palm which are also used for feed and food. While the demand for biofuel will grow significantly over the next five years, it is constrained by the availability of sustainable oils.

BSF oil is a perfect fit for biofuel

However, it is not commercialized due to low oil volume.

- BugEra is seeking to raise US\$3.7 to 4m for its seed round investment.
- Opportunity to join the pre seed round – up to \$0.7m in SAFE.
- Pre Seed investors across the value chain include Israel Innovation Authority, JBI Equity, Milltrust International and a strategic investor of one of the 10 largest global oil companies who has entered into a commercialisation agreement with BugEra for the oil.

Fundraising



Incorporated as a US company



Validated renewable fuel product



Graduated from two elite accelerator programs



Three non-binding MOUs with potential customers

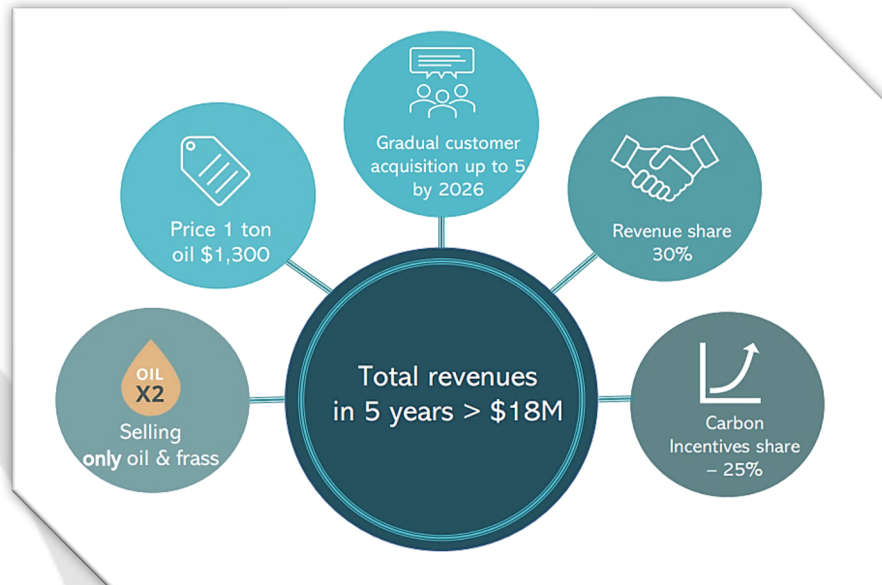


Commercialization agreement with a leading global biofuel company



Israel Innovation Authority (IIA) Award - IIA BSF consortium for circular economy

**Expected ROI –
Conservative
Estimates**



Impact

BugEra’s Core technology – the M-BSF platform and the BSFx2 targets biofuel market while addressing at least four UN SDGS.



BugEra strongly believe that the potential of Insect Farming (InsecTech), and BSF in particular, is far from being realized. BugEra’s strains enable for huge potential growth for a carbon negative future by enhancing organic waste upcycling, adopting innovative circular economy principles that take bioeconomy and biomanufacturing to the next level.

Team

Yoav Etgar

Co-Founder & CEO. A passionate business executive, Yoav has more than 30 years of experience in leadership positions spanning a diverse career in the Israeli Air Force, start-ups, and global corporations.

Dr. Yehonatan Alcalay

Head of R&D. Yoni has more than 10 years of academic and industrial experience in entomology and molecular basis for a variety of insects, mainly harmful species.

Prof. Uri Abdu

Co-Founder & CSO. Uri founded and runs the Insect Genetics Lab at Ben Gurion University. He has over 19 years’ experience in insect genetics and brings his expertise and practical lab knowledge and skills to the team.

About Milltrust International

With its mantra of “Sustainable Prosperity”, Milltrust International Group is a global investment organisation making sustainable impact investments in the biggest themes of our generation: climate change, the demand for food and protein, the future of medical technology, and the rise of the developing world.

Over the past decade, Milltrust has assembled a highly experienced team of leading industry professionals focused exclusively on providing investment management expertise on both public and private markets.

Milltrust’s private investments consist of a plethora of science-backed early-stage disruptive companies in the space of climate impact, healthcare, and agriculture. By drawing on the experience of investment bankers, asset managers, healthcare professionals, and agronomists, our diversified assets have pioneered breakthrough technology in environmental management, medical diagnostics, and animal genetics and welfare with the aim of delivering sustainable solutions an ever-growing and increasingly ageing global population.

About The British Innovation Fund II

The British Innovation Fund II follows on from the success of The British Innovation Fund I, investing into high potential companies with a focus on agri-tech, the future of healthcare, climate impact, and alternative protein, where incontrovertible science is at the core of the commercial proposition.

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