

Future50

Food, Agriculture and
Land Use (FALU)

Agricultural Biotech/Genomics/
Natural Solutions



Circa Biotech

Circa Biotech



<https://www.circabio.tech>

#NatureBasedSolutions

Highlights:

Circa Biotech is part of **Masdar City's Catalyst accelerator**.¹⁷² It was inaugurated by UAE's Minister of Climate Change and Environment, HE Mariam bint Mohammed Saeed Hareb Almheiri.

It also signed a **Memorandum of Understanding (MoU) with the Ministry of Climate Change and Environment (MOCCA)** for mutual collaboration and support in developing a circular economy and sustainable solutions for food waste management in the UAE.¹⁷³

Circa Biotech has won AgriTech Innovator of the Year award at the **Sustainability Middle East Excellence Awards 2023**¹⁷⁴ and was also a finalist for the CCI France UAE Business awards for the Best ESG Impact.¹⁷⁵

Strategic alliances:

- Waste Management Companies
- Farms
- Agribusinesses
- Oil and Gas
- Universities

List impact technologies:

Alternative Foods, Low-GHG Proteins,
Food Waste Technology, Waste to Feed,
Sustainable Lubricants

Headquarters and Middle East operational countries:

United Arab Emirates

Summary:

Circa Biotech **upcycles food waste into protein** for animals, organic fertiliser and **biodiesel oil**, using industrial insect farming of the black soldier fly larva (BSFL). Larvae are reported to grow **500 times their initial body weight in 10 days**.¹⁷⁰

Food waste is collected from food processing operators and fed to BSFLs, which metabolise it into proteins and oil. Circa Biotech claims that this sustainable protein production process requires low amounts of fertile land and water and produces almost no greenhouse gas emissions.

Impacts:

Currently for every kilo of food waste, just over 2.5kg of CO₂ is emitted.¹⁷² Circa Biotech states that its proprietary technology and processes can help **reduce this CO₂ contribution** by diverting food waste from landfills.

The company reports that it has a new processing facility under construction in Al Ain that they say is expected to be operational by the end of 2023. Once operational, the company suggests it will be able to **process 15 tonnes of waste each day**. Based on industry standards of CO₂ food waste emissions this would be equivalent to 280,000 **tons of CO₂ carbon offset per year**.

