

BIOLIVE

Turning Olive Pits into Bioplastics

How a food engineer's kitchen experiment became an industrial bio-based material made from olive-oil waste.



EcoInnovators – Next-Gen Sustainability through Science and Innovation

A collection of real-world good practices for young eco-innovators, published on the GreenLink Hub as an Open Educational Resource.

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Prepared by EuroLinks Association (Balıkesir, Türkiye)

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AT A GLANCE

COUNTRY

Türkiye – İstanbul (Tuzla)

ORGANISATION

Biolive (Biolive Biyolojik ve Kimyasal Ürünler)

FOUNDED

2016

SECTOR

Bio-based materials

WEBSITE

biolive.com.tr

THEMES

Eco-Innovation

Circular Economy

Green Entrepreneurship

Sustainable Production

Waste Reduction

01 Background

Türkiye is one of the world's leading olive and olive-oil producers. Every harvest leaves behind large quantities of olive pits, a by-product that is usually burned as low-value fuel or discarded. At the same time, fossil-based plastics remain one of the most persistent sources of pollution on land and at sea.

The Edremit Gulf in Balıkesir – home of the EcoInnovators partner EuroLinks – is one of Türkiye's main olive regions, so the question “what can we do with the pits?” is very concrete for local young people.

**Olive pits and bioplastic granules**

Photo to be provided by Biolive · © Biolive

THE CHALLENGE

Can an agricultural by-product replace part of the fossil plastic used by industry – at industrial scale and on existing machines?

2016

company founded after 2 years of lab research

≈ 1 year

biodegradation of the fully bio-based grade*

800 t

annual production capacity in Tuzla (2025)

≈ 50

employees (2025)



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02 Solution

Food engineer Duygu Yilmaz began researching olive pits after a family conversation about her father's habit of swallowing them. She started experimenting in 2014 in a student-apartment kitchen, followed by two years of laboratory work supported by national research and SME programmes (TÜBİTAK and KOSGEB).

Biolive was founded in 2016 with Ahmet Fatih Ayas and Mehmet Emin Öz, with early investment from Vestel Ventures. Its patented process converts cellulose-rich olive pits into bio-based polymer granules that run on standard injection-moulding machines – as a fully bio-based, biodegradable grade or compounded with conventional polymers to reduce their fossil content.

Production takes place in the Tuzla Leather Organised Industrial Zone (Istanbul), in a facility set up with an investment of about USD 5 million.



Products made with Biolive material

Photo to be provided by Biolive · © Biolive

MILESTONES



2014

First experiments in a student kitchen



2016

Biolive founded; investment from Vestel Ventures



2018

Winner, Cleantech Global Ideas Competition (advanced materials)



2025

Tuzla facility, ≈ 50 employees, partners in Italy, Spain and France

03 Results and Impact

ENVIRONMENTAL

An agricultural by-product becomes a raw material, reducing waste and fossil-based plastic use.

ECONOMIC

Materials supplied to packaging, household appliances, textiles and automotive interiors.

SOCIAL

A visible role model for young and women entrepreneurs in Türkiye; ≈ 50 jobs.

RECOGNITION

Cleantech Global Ideas Competition winner (2018), national and international media coverage.



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04 Lessons learned

- 1 Start from a local waste stream you know well – value can be hidden in what others throw away.
- 2 Research and public support programmes bridge the gap between a kitchen experiment and an industrial product.
- 3 Designing for existing machinery (injection moulding) makes it much easier for industry to adopt a new material.



Production facility in Tuzla

Photo to be provided by Biolive · © Biolive

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Value can be hidden in what others throw away.

WHY IS THIS A GOOD PRACTICE?

Biolive shows how a young graduate turned a simple question into an industrial eco-innovation. It connects science, entrepreneurship and the circular economy, and starts from a resource that is abundant in partner regions such as Balıkesir – an inspiring example for young people who want to create value from local agricultural waste.

05 Related SDGs

8

DECENT WORK AND
ECONOMIC GROWTH

9

INDUSTRY,
INNOVATION AND
INFRASTRUCTURE

12

RESPONSIBLE
CONSUMPTION AND
PRODUCTION

13

CLIMATE ACTION

14

LIFE BELOW WATER

06 Resources

Website	https://biolive.com.tr
Forbes Türkiye, 4 Sept 2025	https://www.forbes.com.tr/dergi/gida-muhendisi-duygu-yilmaz-biolive-ile-atigi-degere-ceviriyor
Olive Oil Times	https://www.oliveoiltimes.com/business/environmentally-friendly-bioplastics-created-from-olive-seeds/67087

* Company figure. All figures come from the company and the public sources listed and reflect the date of each source.



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