



The Econooc beehive is made from sustainable materials and designed to be easy to use | Photo source University of Limerick

[Innovation](#) > [Science](#) > [Sustainable beehive made from mushroom-based material](#)

SUSTAINABLE BEEHIVE MADE FROM MUSHROOM-BASED MATERIAL

 SCIENCE

A beehive made partly from mycelium has won a national Dyson Award for its focus on sustainability

Spotted: Around the world, honey bee populations are in decline. This colony collapse disorder is thought to be caused by a combination of habitat loss, parasites, climate change and pesticide use. Now, Niamh Damery, a student from the University of Limerick has developed a hive made from natural materials. Her project, which recently won a national James Dyson Award, is designed to be set up in back gardens and to help save endangered wild native Irish Black bees.

The Econooc hive is segmented, for easy assembly and transport. The base is made from mycelium, which is grown from mushrooms. It also contains a natural substance which repels the varroa mite, a common source of deadly viruses in hives. The mycelium is shaped into the form of a tree hollow, where many wild bees overwinter.

The lower half of the Econooc, which includes the landing pad and ventilation hole, is moulded from waste plastic. It includes a clear area that allows people to watch the bees inside the hive. The hive comes with a calendar that teaches the users about biodiversity and is partly made from wildflower seeded paper for users to plant.

Damery was inspired by her father and grandfather, who both kept bees. She points out that, as beekeeping has grown more commercialised, imported strains of bees are breeding with the Irish Black Bee, and these hybrid strains are not able to survive the Irish winter as well as the native bees. She said: "I hope the Econooc will encourage more people to think about nature and solutions we can implement to ensure the survival of bees in the future."

Colony collapse disorder is an increasingly urgent problem – honeybees pollinate around 70 per cent of commercial crops. At Springwise, we have seen a number of innovations aimed at saving bees. These have included [tiny sensors](#) that track the health of hives and a startup using bees to collect [plant samples](#).

Written By: Lisa Magloff

Explore more: [Science & Environment Innovations](#) | [Sustainability Innovations](#)

24th September 2020

Email: niamh.damery@live.com

Website: ul.ie

[Download PDF](#)

Takeaway:

The Dyson Award judges were drawn to Damery’s creative innovation and focus on sustainability, particularly during the pandemic, when more people were staying at home and in their own gardens. [They say that](#) “In the current climate people are spending more time outside and in gardens, and the Econooc demonstrates the crucial role that design plays in a sustainable future and the survival of Irish Black Bees.” Damery will use the €2,000 from the award to invest in advanced prototyping and research. If it pans out, the Econooc could bring sustainable beekeeping into back gardens around the world.