

# Improving Food Production with Agricultural Technology and Plant Biotechnology

*A short online course*



Co-funded by the  
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# Context

- With a growing world population, food security has become a pressing issue in the 21st century.
- According to the United Nations, the world population is expected to reach 9.7 billion by 2050, and we will need to increase food production by 70% to feed everyone.
- This challenge is further compounded by climate change, soil degradation, and water scarcity.
- To meet the growing demand for food, there is a pressing need to improve food production and a possible way to do so is by using agricultural technology and plant biotechnology.
- Advances in these areas have the potential to increase crop yields, improve food quality and safety, and reduce environmental impacts.

# Solution

- To address these challenges and equip the next generation of scientists with the necessary skills and knowledge, EIT Food has developed this short online course thinking about the improvement of food production with agricultural technology and plant biotechnology.
- The course title is “Improving Food Production with Agricultural Technology and Plant Biotechnology”. It is composed of 9 hours of learning broken down in 3 modules.
- On this course, learners will look at:
  - the different methods of plant biotechnology
  - the challenges involved in growing, harvesting and processing plant-based food
  - the role of scientific research in addressing security to food security matters
  - the opportunities and limitations of new technologies
  - the consumer trust in the science and technology involved in bringing food from the field to the supermarket



# Ambition

- Our mission is to empower the next generation of scientists to tackle the challenges in food security by providing them with a comprehensive understanding of the latest research and insights related to agriculture technology, plant biotechnology and food production.
- We aim to inspire and prepare students to contribute to a more sustainable and equitable global food system.



# High level contributors

- This course has been designed for 16 to 19-year-olds studying biology related STEM subjects at A level or undergraduate level, however, it will also appeal to adults interested in in the technology behind food production and has been created by University of Cambridge with the collaboration of the following institutions:



# A modern approach to learning

- Fully online, short learning opportunity
- Course available 24/7 to fit with busy lifestyle
- Content accessible on any connected device
- Short lesson in a variety of formats: video, text, quizzes, etc
- Conversational learning: Learners are encourage to reflect and join discussions
- Additional content added to each steps to further explore the topic



# Trailer video



# Course Syllabus

## Week 1: Plant Biotechnology

Introduction

What is plant biotechnology?

Alternatives to plant biotechnology

What future solutions could plant biotechnology offer us?

## Week 2: Agricultural Technology

Introduction

What is agricultural technology?

Agricultural technology today

What future solutions could agricultural technology offer us?

## Week 3: Applied Food Science

Introduction

Harvesting

What is food science?

What future solutions could food science offer us?



## Week 1: Plant Biotechnology

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### Introduction

Find out more about what you'll be learning over the next three weeks.



- 1.1** Welcome to the course [ARTICLE](#)
  - 1.2 Meet the educators [ARTICLE](#)
  - 1.3 Food production challenges [ARTICLE](#)
  - 1.4 Food production challenges: what do you think? [DISCUSSION](#)
- 

### What is plant biotechnology?

Learn about the different methods of plant biotechnology and how they can help with pathogen control.



- 1.5 What is plant biotechnology? [ARTICLE](#)
  - 1.6 CRISPR technology [ARTICLE](#)
  - 1.7 Plant biotechnology for pathogen control [ARTICLE](#)
- 

### Alternatives to plant biotechnology



# Case study: farming with robots

2 comments

You've learnt about the current state of play with agricultural technology, but what about the future?

There are many exciting technologies still in the research and development phase. One example is robotic 'smart machines', which could one day replace tractors and combines or eliminate the need for herbicides.

Simon Blackmore, Professor Emeritus at Harper Adams University in the UK, is an expert in precision farming. He's interested in developing new machines and techniques to make crop production more efficient.

[View transcript](#)Download video: [standard](#) or [HD](#)

## Case study: pollination using bumblebees

[3 comments](#)

In this step, you'll discover a real-life example of how beneficial



Many consumers expect a variety of high-quality fruit and vegetables to be available all year round

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## From field to harvest to processing

1 comment



# Improving Food Production with Plant Biotechnology

**SHORT ONLINE COURSE**

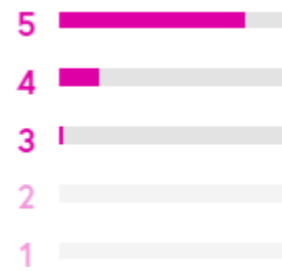


- Course available on demand
- Link:  
<https://www.futurelearn.com/courses/food-production-agricultural-technology-plant-biotechnology>



## Learner reviews

Powered by 





Gerard H. Verified learner

24/10/21



### Food Production with Agricultural Technology and Plant Biotechnology.

I found the course very interesting, informative and enjoyable. The information on GM, Biotechnology, farming developments in equipment and the possibilities with food production were very enlightening.



Rosemary M. Verified learner

30/05/21



### Dynamic engaging course

Great content, interesting case studies, engaging quizzes, sparking memories of learning and questions that encouraged active learning and critical thinking.





**Thank you!**



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