Citizen Science: Living Soils, Growing Food

Learn about approaches to food growing that can help regenerate soil and solve environmental issues.

GROW Observatory MOOC on FutureLearn
Link: https://www.futurelearn.com/courses/grow-soil-to-food
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Course Description

**How to use regenerative growing practices in your own garden**
Learn about the challenges facing our food and farming systems and solutions to overcome them. Explore key approaches to food growing that can regenerate soils and ecosystems. You’ll discover sustainable practices and will be guided through the steps to design your own growing experiments to assess how effective these are in your own space. This year the course also covers how to move from data to action and will introduce you to participatory governance. We will offer practical information on how to create positive change in your garden, local area and beyond using citizen-generated data.

**What topics will you cover?**
- Challenges and opportunities facing global food systems
- Citizen Science and Fieldwork
- The GROW Observatory
- Regenerative practices for food growers - exploring the effectiveness of approaches like mulching, no dig, cover crops, creating wildlife friendly areas and more
- Identifying the steps to design your own robust research experiments to investigate the effectiveness of regenerative practices in your growing site

**Learning on this course**
On every step of the course you can meet other learners, share your ideas and join in with active discussions in the comments.

**What will you achieve?**
By the end of the course, you’ll be able to...
- Debate the challenges facing global food and farming systems and potential solutions
- Identify regenerative practices that you could implement in your growing site, and learn how to evaluate them to improve your growing
- Describe key research principles and their importance in designing robust growing experiments for your garden and your community
- Become familiar with different types of soil nutrients and how to balance them in your soil
- Reflect on how to move from data to positive action and take part in participatory governance opportunities
- Explore key approaches to food growing that can ameliorate soil degradation and regenerate soils and ecosystems

**Who is the course for?**
This course has been designed for anyone interested in the environment. You don’t need any special experience, but it might be of interest to small farmers, community and urban growers, gardeners, land managers, allotment growers, and teachers in environment-related subjects.
Course Outline

**WEEK 1:** Challenges and solutions in food growing

Welcome to GROW

1.1 The GROW Observatory  
*Article*  
1.2 GROW’s final online course  
*Article*  
1.3 Welcome to Week 1  
*Video*  
1.4 GROW Glossary  
*Article*  

Global food production: can we enhance both food security and the environment?

1.5 Challenges in food production  
*Article*  
1.6 Enhancing food production and nutrition  
*Article*  
1.7 Balancing production with nature and promoting sustainable diets  
*Article*  
1.8 Land sparing or land sharing?  
*Poll*  
1.9 Positive solutions, regenerative approaches  
*Article*  
1.10 Your food growing  
*Discussion*  

Regenerative food growing practices to protect soils and ecosystems

1.11 Solutions to build healthy soils and diverse ecosystems  
*Article*  
1.12 Key practices for growing soils  
*Article*  
1.13 Key practices for growing ecosystems  
*Article*  
1.14 Key practices for growing polycultures  
*Article*  
1.15 How does your garden grow?  
*Discussion*  

Experimenting with growing practices at the small scale

1.16 Big gaps in small-scale growing  
*Article*
WEEK 2: Setting up your own food growing experiments

Welcome to Week 2

2.1 Welcome to Week 2
Video

2.2 What are your sources of information on food growing techniques?
Poll

2.3 Knowing what we don't know
Video

2.4 Introducing the GROW Observatory app
Video

2.5 GROW's Edible Plant Database
Article

2.6 Contributing to GROW's crowdsourced harvesting and planting advice calendar
Discussion

Asking new questions - What do you want to find out?

2.7 What do you want to know?
Video

2.8 Refining questions
Article

2.9 Examples of refined questions
Article

2.10 What makes a good question?
Poll

2.11 What's your question?
Discussion

Approaches to answering questions

2.12 What do you need to measure?
Article

2.13 Expectation, control and replication
Article

2.14 Spot the control
Poll

2.15 Additional influencing factors
Article

2.16 What's your plan?
Discussion
Identifying a suitable site for your experiments

2.17 Study sites
Article
2.18 Choosing a site for your experiment
Poll
2.19 Shade: How to select a suitable site for growing and experimenting with annual vegetables
Video
2.20 Checking soil suitability in your experiment site
Video

Deciding what and how to measure

2.21 Laying out plots
Article
2.22 Taking measurements
Article
2.23 Your likely layout
Poll
2.24 What’s your design?
Discussion

Week 2 summary

2.25 Test your understanding
Quiz
2.26 Week 2 summary
Video

WEEK 3: Analysing your data and moving from data to action

Getting good results from your experiments

3.1 Welcome to Week 3: Selecting a good site and method for your experiments
Article
3.2 Pilot studies
Article
3.3 Can we unconsciously affect experiment results?
Discussion
3.4 Sample experiment: Polycultures versus monocultures
Article

Setting up your experiments

3.5 Describing your site
Article
3.6 Slope position

3.7 Canopy cover

3.8 Experiment measurements

3.9 Recording and analysing your experiment data

3.10 Preparing your experiment data

3.11 Using a dataset: Part 1

3.12 Using a dataset: Part 2

3.13 Predicting patterns and results

3.14 Analysing results: the GROW's Great Living Soils Experiment case study

3.15 Exploring variation in the GROW Great Experiment results

3.16 The importance of nutrients in soil and in food

3.17 Macro nutrients

3.18 Micro nutrients

3.19 Influence of soil pH on nutrient availability to plants

3.20 How to increase nutrients in your soil

3.21 New insights and new questions!

3.22 Defining what positive change you wish to create

3.23 Introduction to participatory governance

3.24 Participatory governance in the European context

3.25 Participatory Governance e-channels in Europe
3.26 Participatory Governance: inform policy that matters to you
Video
3.27 Creating impact at the global level: How GROW is contributing to the Sustainable Development Goals
Article

Your GROW future

3.28 The GROW quiz
Quiz
3.29 Congratulations! Keep in touch and be inspired!
Discussion