**The Importance of Crop Rotations**

1. **Read the definitions of crop rotation and monoculture below! (10min)**
2. **Are there any words you don’t understand? List them on the last page!**
3. **Use the words from the box to fill in the missing words!**

What is a crop rotation?

A crop rotation is a series of different crops planted in the same field in a defined order (i.e., maize-cotton-sunflowers or maize-soybeans).

Monoculture is the repeated planting of the same crop in the same field year after year.

repeated – field – year – crops – order – year

1. **What are the correct words in the text “What problems occur with monocultures”? (10min)**
2. **Are there any words you do not understand? List them on the last page!**
3. **Choose the correct options in the following text!**

What problems occur with monocultures?

In monocultures, increases in crop-specific pests and diseases/deformations are observed over time. Continuously growing the same crop will tend to exploit/nourish the same soil root zone, which can lead to a decrease in available soil organisms/nutrients for plant growth and to a decrease in root/insect development.

1. **Watch the video: “Why Do Farmers Rotate Crops? - Farm Basics” (15min) (**[**https://www.youtube.com/watch?v=3QLYFg4NIN8**](https://www.youtube.com/watch?v=3QLYFg4NIN8) **)**
2. **List the words you don’t understand on the last page!**
3. **Watch the video again and note down the benefits of crop rotations! Discuss your key terms together!**

Benefits of crop rotations:

* 1. Helps avoid problems with insects and diseases
	2. Improves weed control
	3. Nutrients: new crops profit from the nitrogen residues from the last crop
	4. Spreads out the workload
1. **In addition to the video, what are some other benefits of crop rotations you know about? (5min)**
2. **What diseases and pests do you know which can be avoided by crop rotations? (If necessary, watch the video again!) (5min)**

Western corn rootworm (Diabrotica virgifera virgifera), Nematodes, Sclerotinia White Mold

1. **Take a book about crop production (i.e., “Pflanzenbau 1 – Grundlagen”) or do research on the internet to find out the recommended cultivation breaks of the following crops! What could be possible reasons for the break? (15min)**

|  |  |  |
| --- | --- | --- |
| Crop | Years of Break | Possible Reason(s) |
| Wheat, Barley | 2-3 |  |
| Potato | 3-4 |  |
| Soybeans | 4-5 |  |
| Sugarbeet | 4-5 |  |
| Sunflowers | 5-6 |  |
| Rapeseed  | 3-4 |  |

1. **Rules for planning your crop rotation. (15min)**
2. **Read the rules for crop rotation!**
3. **Are there any words you do not understand? List them on the last page!**
4. **Group work: Build a group of four, mark the important keywords and compare your results!**
* Do not plant the same family of plants in the same spot 2 years in a row (because insects, nematodes, and pathogens are all attracted to specific kinds of plants so by mixing up the plant families you plant in a spot it helps prevent infection from pests).
* Do not grow the same kind of plant in the same spot 2 years in a row.
* Follow deep-rooted plants with shallow rooted plants and vice versa.
* When growing high yielding plants alternate them with low yielding plants that are very resistant to diseases.
* Alternate high effort plants with low effort plants.
* Preferably, have a 4-year cycle because many soil borne diseases stay in the soil for 3 years. Even if the plants are not affected, you can avoid the infection.
* It is good to have cover crops as part of your crop rotation as many of them build up the soil and some of them deter pests.
* The more crop rotation crops you cultivate, the better. (As illustrated in the image below!)
1. **Plan two crop rotations with four parts! Present the result of your groupwork in front of your classmates! Explain the reasons of your selections! (15min)**

|  |
| --- |
| **Your Own Crop Rotation:** |
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**Vocabulary:**

|  |  |
| --- | --- |
| Word | Description |
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**List of references:**

<https://alaskamastergardener.community.uaf.edu/2019/12/06/crop-rotation/>

<https://boku.ac.at/fileadmin/data/H03000/H73000/H73300/PJ/Mozambique/CIMMYT_ExtBulletins02.pdf>

<https://www.youtube.com/watch?v=3QLYFg4NIN8>

Pflanzenbau 1 – Grundlagen, Leopold Stocker Verlag, 2022