

Fact Sheet of the Soy Plant

Abstract

Soy is cultivated around the world as the most important plant-based protein source and is stimulating the global market. Working on the MASCIL soy tasks, students of different ages will get to know the plant in detail. This task is a supplement to the Soy Cultivation Task but can be done independently as well. The essential information about the soy plant is to be collected and presented as a fact sheet. The table is only an example of how this could be done and can/should be modified by the students.

Tags

Discipline: Biologie- und Umweltkunde

Target group: Lower Secondary

Age range: 11–15

Duration: 1 Lesson (50 min)

Inquiry learning dimensions:

- Exploring situations
- Planning investigations
- Interpreting and evaluating
- Communicating results

World of Work Dimensions:

- **Context:** Soy is an important plant-based source of protein and is largely cultivated in the USA, Brazil, Argentina and China. The students assume the roles of Austrian farmers who need to learn about the soy plant and its requirements for cultivation.
- Roles/Profession: Students work as farmers.
- Activities: Students research the growth requirements of the soy plant and create a fact sheet outlining the soy plant's characteristics.
- Product: Fact sheet.

Task

In order to improve your experiment description and hypotheses from the Soy Cultivation Task, gather the following information by doing your own research. It is up to you how you want to present it (a table is only a suggestion). Afterwards, you will need to justify briefly why this information is relevant for our experiment, why you will stick with your hypothesis or why you might want to change or adapt it.





General Facts		
Name, botanical name		
(Species, Genus, Family,		
Order)		
Characteristics		
Varieties and their		
characteristics		
Origin		
Abiotic Components		
(soil requirements,		
water, temperature)		
Cultivation		
Countries cultivated in		
(international, national)		
Acreage in hectares		
(international, national)		
Importing and exporting		
countries		
Sowing and Maintenance Measures		
Sowing		
Maintenance measures		
and weed regulation		
Fertilisation		
Pests		
Possible crop rotation		
Harvest and Use		
Harvest		
Possible use		
Other Information		

Teacher Guidelines

In this tasks students are to complete and check their hypotheses with information and, if necessary, come up with new ones. Information can be gathered either from the provided sources or by doing own research, which should be documented in a search history.

- Aim: to gather information about growth factors of soy plants
- Topic: Completing and connecting observations with learning experiences.
- Effects: Not only will the gathered information be used to complete the hypotheses in this task, the students will also be able to apply this information to other tasks of the MASCIL-series "Soy".

Methods

- Hypotheses and Testing
- Gathering, presenting information





Suggestions for Implementation

The provided fact sheet as presented in the table below is only a template and not suitable for immediate use as the rows are too narrow. The individual design and presentation is up to the students.

Specific research will provide the most important facts about soy plants, such as general information, facts about cultivation, planting and attention, crop and use. Using the gathered information, the students will have to improve the description of the experiments and hypotheses in the "Soy Cultivation" task. The design of presentation is up to them; it should however include the information listed in the template. Subsequently they are to explain the relevance of the gathered information for the experiments and why they will or will not adapt their hypotheses and/or complete them.

Challenges

Was the task clear/well-described? Is the provided material up to date?

Didactic suggestions

The table above should be completed using the following links (in German):

- "'Versorgung Österreichs mit pflanzlichem Eiweiß Fokus Sojakomplex"' (Pistrich, Wendtner & Janetschek 2014)
- "'Pflanze mit Zukunft"' in BIO AUSTRIA 1/2010 (Hofer, Schweiger & Hartl 2010)
- "'Soja. Eine Kulturpflanze mit Geschichte und Zukunft"' (Bäck, Köppl, Köppl, Krumphuber, Lembacher, Schally & Wasner 2010)
- "'Kulturanleitung: Sojabohne"' (Lembacher, Schmiedl & Wasner 2009)
- "'Steckbrief SOJA"' (Liebegg 2012)

In addition, students could also research the topic on their own. Upper secondary students will do their research using the internet while documenting their research steps.





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