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# SUSTAINABLE CROP AND LIVESTOCK INTEGRATION

## CORRESPONDING MODULE 5



### Introduction

Aquaponics connects ancient natural principles with findings modern of the world. It is a symbiosis breeding of fish with cultivation plants in one recirculating system. Plants it cleans water for fish, and you them in return they deliver nutrients.

In aquaponics it isn't a place for chemical fertilizers or harmful supplements, as "unnatural" substances would harm both plants and fish.



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### Description

Whole cohabitation plants and fish it works simply and naturally. Water enriched with fish " fertilizer " is pumped from fish up and watering plants. Their root system water cleaned and removed from it all harmful substances. Pure the water returns back to the fish. Water constantly circulates round and form closed ecosystem.

Thanks fully closed cycle is complete production farms gentle and uses minimal water consumption. Water saving is up to 95% compared to conventional agriculture. The requirements for the usable area of the farm are also many times smaller. The entire system has a minimal carbon footprint and yet can offer year-round stable production from organic traffic.

Alpha and omega for Pisces the garden is a cycle of clean water. All fish are kept in ideal conditions, in a closed environment. Farmers provide the best conditions for fish to live. This also includes feed with balanced nutrients so that their meat has the right taste. They are not felt fish nor mud.

It started in 2017 fulfill the owner's dream of establishing the first large aquaponic farm in Central Europe. From the beginning, the Rybí zahrada farm set itself the goal of being a safe and ecological source of food. Vegetables, herbs and fish are grown here all year round in an ecological environment with a controlled climate. They produce tasty and fresh food regardless of the weather, in harmony with nature, without pesticides and with maximum emphasis on saving water.

Fish, as well like all other animals on our planet, in progress your own life into the water and something omits. How then to keep water clean ? In the upper floor farms, they grow salads and herbs for which growth is " something " ideal natural fertilizer. The water is cleaned and can be used without worry return back to the fish. This closed cycle U.S allows significantly save water. Contaminate her with pesticides and other chemistry seriously we don't want, therefore none of it ever we don't use.

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In common waters into fish due to pollution will get many microplastics and particles iron, which in our fish Thanks described aquaponic method they are not The meat is then healthy and tasty exactly as it should. We can also guarantee the freshness of the fish we prepare tightly before their sending for delivery.

### **Fish**

Local wide fish the offer will please the gourmet's palate and the most demanding aesthetic eye. Choose from fish suitable for the plate, aquarium or garden pond. And which ones fish do you behave here ? For example, trout (rainbow, salmon), carp, African catfish, Nile tilapia or sturgeon Siberian.

### **Vegetables**

From vegetables produced on the farm produces salad mix. We grow basil, coriander, chili or tomatoes.

### **Next Ware**

Except fish and vegetables offers also thermally processed products such as pates, smoked fish, pesto, broths and gradually they want expand offer pre-prepared meals.

We are professionals in growing vegetables and raising fish. We treat them to above-standard care in harmony with nature. Thanks to aquaponic farming, you can buy fresh and local products from us in every season.

Fish garden





### Advantages and challenges

Aquaponics is a new technological system that combines fish farming with vegetable cultivation. The fish provide fertilizer for the plants and the plants clean the water for the fish. No artificial fertilizers or other agrochemicals are used. The system saves up to 95% of water compared to other cultivation methods.

Production is completely independent of the weather and climate, and it is also year-round. The products are very healthy, nutritionally valuable and yields are incomparable with conventional ones agriculture.

Utilization aquaponics means :

- Super healthy foodstuffs
- Independence from the environment
- Distinctive savings energy
- Ecological sustainability
- Simple maintenance system

## Benefits for farmers

- High efficiency of input utilization
- It can also be done without artificial fertilizers
- More than 90% water saving
- The possibility of agricultural production even in cities and more efficient use of land in the form of vertical farms
- Fewer pests, especially soil-bound ones
- Year-round cultivation
- Production of local food attractive to consumers

## Challenges for farmers

- Necessary constant supply of energy and necessary backup sources
- The need for daily qualified supervision
- A rather complex balance of plant and fish parts, there are two of them biosystems

### Main data

- Built up flat farms - 1,620 m<sup>2</sup>
- Savings water - 95%
- Looting soil - 0%
- By application of sprays - 0

### Further

#### Information

1. <https://www.rybizahrada.cz>
2. <https://www.kudyznudy.cz/aktivita/aquaponicka-farma-rybi-zahrada-v-lazovicich>
3. <https://www.futurefarmi.sk/aquaponia-je-buducnost-pestovania-potravin/>



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## ANNEX - STRUCTURE OF MODULE CONTENT TO PREPARE SLIDES

<b>Module Name:</b> <b>The name of the partner:</b> <b>Country:</b>
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<b>The name of the module</b>	
<b>Target group involved</b>	
<b>Current information about the topic</b>	
<b>Principles of the specific module</b>	
<b>Basic terms/measures of the module/topic</b>	
<b>Training materials (tasks, case studies, exercises)</b>	
<b>Short description of the materials</b>	
<b>Link of the online resources (film or video resources)</b>	
<b>Specific images (to support the purpose of the resources)</b>	
<b>Duration</b>	
<b>Materials</b>	
<b>No of Learners/Representatives</b>	
<b>Individual or group work</b>	
<b>Step by step guide</b>	