



AgriTech Solutions: Innovating VET for Sustainable Agriculture

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EXPERT CONSULTATIONS

Organic farming

Experts/organizations: ZZ "STUBA", TD DZP KLECHOVCE DOOEL, ADUT GVN, AG FUTURA Technologies, „KAV KOMERC AND AGRO KAV KOMERC", COMPANY „STOJCHEVI and WINERY ARBESKA", INDIVIDUAL FARMER MARJAN TANCHEV, LISA – KOM KAVADARCI, INDIVIDUAL FARMER STEFAN STOJCHEV, AGRIJA DOOEL, Individual farmers groups and individuals, IZ Branko Atanasov, Livestock farm

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Location: Kumanovo, Sveti Nikole, Skopje, Strumica, Kavadarci, Valandovo, Veles

Short description

ADUT GVN DOOEL is a company that has existed since the beginning of 2000 and is engaged in the packaging of the most basic dietary supplements, the production of spices, food acids, drying and dehydration of fruits and vegetables, aromatic and spicy herbs.

In addition, its production line includes its own organic plantations of spices, grains and vegetables, as well as its own distribution throughout the territory of the Republic of North Macedonia.

Organic farming is a production system based on natural processes, without the use of synthetic chemicals (pesticides, herbicides, artificial fertilizers) and GMOs. The goal is to produce healthy food, protect the environment and maintain the fertility of the soil.

the soil.

Organic production of spice plants

Organic cultivation of spice plants follows the same principles, but with a special focus on quality, aroma, and natural purity.

Key principles:

- Selection of location and soil preparation. The soil must not be contaminated with pesticides for at least 2-3 years. Compost, natural fertilizers (manure, green manure) and bioactive substances are used to improve the structure.
- Seed material. Organic certified seed or plants from unsprayed, local, adapted varieties.
- Protection from diseases and pests. Application of "biological preparations" (for example, garlic, wormwood, nettle teas). Use of natural predators and "mechanical methods" for removal of pests.
- Irrigation. Precision irrigation with a "drip" system, without chlorinated water. Practices for moisture conservation, such as mulching.



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- Harvesting and drying. Harvesting is done manually, carefully, at the right time for maximum aroma. Drying is done in the shade or under controlled conditions, without the use of chemicals.

- Packaging and storage. Use of "ecological packaging". Products must be stored separately from non-organic ones to avoid contamination.

Advantages of organic production of spice plants:

Greater nutritional value and natural aroma, protection of biodiversity and soil, higher sales value on the market, possibility for export and certification.

The individual agricultural holding Branko Atanasov works on organic strawberry cultivation. With the decision to produce strawberries organically, the process of education about organic production begins. This process continues today with constant upgrading of knowledge about organic production. There is a lack of professional literature and experts working in the field of organic production, so the acquisition of the necessary knowledge and skills is through literature and internships, but also by exchanging experiences with organic producers in the country and abroad.

from her.

Marjan Tanchev, Individual registered farmer of organic greenhouses with pepper greenhouses, village of Balinci, Valandovo.

The greenhouse is 700 m² covered with plasticized nylon PVC, which according to Mr. Tanchev protects against UV radiation 8 and above 8. The greenhouse is also covered with an anti-hail net. The production method itself is completely organic from seeds or using hybrid seeds and the method of cultivation is organic. The entire greenhouse under the greenhouse is covered with a drip system using a submersible pump from its own 42 m well, with ecologically clean water.

The entire production process of this organic pepper product from the Caprima variety, which is a variety of pepper intended for ajvar, is also controlled. During the vegetation period, feeding is done with nettle and composted organic fertilizer. So far, only biological protection with natural extracts of garlic, nettle, wormwood has been used. It also has other open areas, it grows modern eggplant with 6200 m², watermelon with 5800 m², and viticulture with 12000 m² of land. All areas are irrigated with clean well water.

water with a drip irrigation system installed.

Organic farming in the cultivation of horticultural crops includes the following measures: 1. Soil and fertilization

- Use of compost, manure as organic fertilizers,
- Increasing soil fertility through green cover (mulching) and humus as organic matter.

2. Plant protection

- Biological protection instead of chemical pesticides, - Use of beneficial insects, natural preparations and plant extracts.

3. Crop rotation and selection

- Planting resistant and locally adaptable varieties,



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- Crop rotation to reduce diseases and pests.
- 4. Watering and care
 - Efficient drip irrigation systems, - Maintaining optimal agrotechnical measures without chemicals,
- 5. Weed control
 - Mulching, mechanical weeding and application of other agrotechnical measures.
- 6. Preserving biodiversity
 - Protection of beneficial insects, installation of hedges and flower belts.

Conclusion

Organic spice production is an environmentally and economically viable practice that combines traditional knowledge with modern sustainable technologies. With the growing demand for healthy food, this production is an excellent opportunity for small and medium-sized agricultural holdings.

The education should emphasize the specific technologies of organic production of certain agricultural products. Before starting organic cultivation, it is necessary to study the substrate on which the plants will be grown, specifically for strawberries, appropriate permeable soil should be selected, i.e. soil that does not retain moisture, the choice of varieties is of crucial importance, protection and control of pests, bacteria and weeds. In order to have good organic cultivation, we need quite good knowledge and the correct selection of both the substrate and the variety, because not every variety is good for every area.

In addition to the many materials and literature that can be found to enhance the curriculum, the following can also be used as additional materials:
resources:

Online resources and free materials:

• IFOAM – International Federation of Organic Agriculture Movements

- ifoam.bio
- The world's leading organic production organization
- Manuals, standards, global reports

• FAO – Food and Agriculture Organization (UN)

- fao.org
- Free PDF manuals and studies (in English and other languages)

• EU Organic Farming

- organic-farming.europa.eu
- Information on regulations, support, labeling within the EU



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