

**Building Capacity  
of Serbian Agricultural  
Education  
to Link with Society**



Tempus

**Izgradnja kapaciteta  
srpskog obrazovanja  
u oblasti poljoprivrede  
radi povezivanja sa društvom**

**Coordinator:  
University of Belgrade  
Faculty of Agriculture**

**Koordinator:  
Univerzitet u Beogradu  
Poljoprivredni fakultet**

## COURSE REGISTRATION FORM

<b>Teacher</b>	Ivan Pavkov
<b>University</b>	University of Novi Sad, Faculty of Agriculture
<b>Course</b>	Fruit drying
<b>Target</b>	Agricultural Middle Schools and Agricultural Extension Service
<b>Type</b>	blended
<b>Duration</b>	2 days - 16 hours

<b>Description</b>	<p>Serbia is a significant producer of various continental fruit species. Further improvement and better valorization of this production is possible by enhancing processing. One of the less developed aspects of fruit processing in Serbia, with the exception of plums, is drying of apricots, nectarines, pears, quinces and similar fruit species.</p> <p>During the course, participants will be introduced to the drying technology of the following fruit species: plums, apricots, nectarines, peaches, pears, quinces, and similar fruit species. The development of small and medium-sized enterprises in agriculture can be notably improved in the processing sector by drying of the abovementioned fruit species.</p>
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<b>Contents</b>	<p>The course is designed to encompass all important aspects of fruit drying via the following units:</p> <ol style="list-style-type: none"> <li>1. Introduction - Fundamentals of the Fruit Drying Process</li> <li>2. Material Moisture Content and the Mass Balance of Dried Fruit Production</li> <li>3. Design Solutions for Fruit Dryers and Additional Equipment</li> <li>4. Plum Drying Technology</li> <li>5. Apricot, Nectarine, Peach and Pear Drying Technology</li> <li>6. Basic Laws and Regulations in the Field of Fruit Drying</li> </ol> <p>Practical Work (mathematical tasks - the mass balance of dried fruit production, project assignment - equipping the center with the necessary equipment in the correct order; practical preparation of various fruit species for drying).</p>
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<b>Objectives</b>	<p>Participants of the AMS and PSSS course will be introduced to the fundamentals of the fruit drying process, the drying technology of various fruit species, the necessary equipment and current laws and regulations pertaining to fruit drying. They will learn how to calculate the mass balance of dried fruit production (the mass of fresh fruit – the mass of dried fruit), to determine the proper drying technology depending on fruit species, to select the necessary equipment according to the chosen technology, to put the equipment in the correct order in the facility. They will practically learn how to perform individually all technological operations from fresh fruit to dried fruit.</p>
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The attendance of the course will enable the target audience to revise and enhance the existing knowledge, which they will subsequently transfer to students and agricultural producers in an efficient and practical manner.

#### Activities

On the first day, participants will access the online content covering Units 1 to 6 from their homes or offices by means of the Moodle platform. Subsequently, they will take an online test in order to assess the obtained knowledge. Provided a participant has passed the test, he/she qualifies for the second day of the course.

Practical work is planned for the second day (up to 20 participants) in groups of 4 participants. The first task would be to calculate the production mass balance during drying of one fruit species. The second task entails designing of a floor plan for a drying facility with a production line and necessary equipment. Each group will have different fruit species. Upon the completion of the task, each group will present their results followed by a discussion of all participants.

In practical work, each group will be required to prepare one fruit species for drying based on the acquired knowledge (fruit washing, cutting, pitting and antioxidation) and to select the correct parameters and duration of the drying process.

Activities:

- Group work
- Discussion of group results
- Preparation of various fruit species for drying

#### Materials

Participants ought to have a computer and access to the online Moodle course from home/work.

The facility for practical work (classrooms, presentation rooms) accommodating at least 20 participants. Blackboard and chalk. Paper of the B0 format, marker pens.

Several different fruit species (seasonal), 2 kg of fresh fruit for each group, cutting tools (smaller kitchen knife or a scalpel), adsorbic acid, powdered sulphur (100 gr), 4 containers of the 10 l capacity. Provided practical work is conducted at the Faculty of Agriculture in Novi Sad, all equipment and material will be provided in the Laboratory of Biosystems Engineering.