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POTENTIAL AND LIMITATIONS OF PLUM DRYING AND SALES: CASE OF OSEČINA MUNICIPALITY

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Abstract: *The sale of processed products to suppliers brings higher value than the sale of fresh products, which is the main motive for investing in plums drying. The Municipality of Osečina is perhaps the best example. It has plum orchards, the tradition of plum drying, and and in the last few years a great number of new plum drying facilities were built. The reason of such development in the municipality of Osečina is primarily prunes demand in international markets. The subject of this paper is to examine the potential and limitations for drying and selling dried plums. The data for this research were collected from personal interviews with key stakeholders in Osečina engaged in the plum production or drying. A person employed in the advisory department and the person in charge of the organization of the Plum Fair that is held each year in Osečina in August have also been interviewed. Finally, the National Statistical Office data were also used. This paper shows, in particular, that 94% of plum drying facilities in Osečina have the daily capacity for drying of up to 1000 kg of plums. The production of fresh plums in the municipality ensures the operation of a drying facility for half a month during the year.*

Key words: *Prunes, drying, sales, Osečina.*

1. INTRODUCTION

Although considered to be the fruit cultivating region, the highest portion of farming land in the municipality of Osečina are used for crop production, while orchards account for 13% of the total farming land (Fig. 1), out of which land under plum account for 55%. Only a small share of them uses irrigation systems and therefore yields depend exclusively on weather conditions.

In order to increase the value of production, investments in plum drying facilities is significant.. There are 160 drying facilities in the municipality, out of which 94% of facilities have the daily capacity of drying of up to 1000 kg of fresh plums. Since fresh plums producers are small private family farms, and since there is a great number of small capacity drying facilities, it may be concluded that full competition is present both in terms of demand and in terms of supply. Consequently the price of fresh plums cannot be changed either by an individual producer or by the owner of a drying facility.

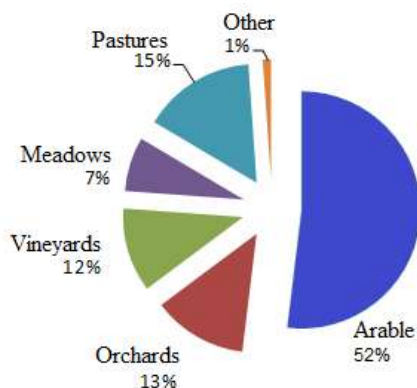


Fig. 1 Land – Municipality of Osečina (Source: National Statistical Office)

However, this situation could be changed as traders from other regions could significantly change the situation and affect the prices. This paper aims at presenting the current situation in terms of plum drying and sales, as well as potential challenges to primary producers and prune traders.

2. MATERIAL AND METHOD

Since fresh fruits are products that are prone to rot due to which can only be sold in a fresh condition in a short period of time, processing does not only increase the value, but it also increases the sales potential until the next harvest.

The total number of drying facilities in the Republic of Serbia is 5625, of which 95% are family-owned and mini drying facilities. The remaining 5% account for industrial drying facilities. Products obtained in family-run production are dried, with a low percent of drying service or purchase of fresh products from other farmers. . In the municipality of Osečina, the first two categories account for about 97% of all drying facilities, while the remaining portion of 3% account for comparatively bigger drying facilities (Interview 1.3)

In the municipality of Osečina, drying facilities are intended only for plum drying, mainly of the daily capacity of up to 1000 kg per one tunnel. Plums are dried during the period from 30 to 60 days, which results in the low capacity utilization on the annual level. Drying facilities are of tunnel type, mainly consisting of two rows of wagons, where trays are located. Some of drying facilities are designed and constructed by plum producers, which sometimes brings useful innovations, but in certain cases problems arise due to poor knowledge of plum drying technology.

Estimated construction costs of the drying facility with the daily capacity of 1000 kg, range from 13.900 to 16.100 EUR. The difference in the costs results from the type of facility, equipment quality, type of insulation and similar (8).

The procurement of drying facilities is mostly financed from own resources. The greatest number of drying facilities was installed during the period 1982–1989 when the complete equipment was procured from the local state-owned companies “Cer” and “Iverak”. During this period, zinc plated pipes were used, which came out of use subsequently due to standards applied in recent times. Stainless steel is mostly used for shelves and other equipment in recent times – it is more expensive but it has a longer life cycle.

After this period, procurement was mostly organized for equipment parts that were subject to physical depreciation, such as boilers due to burning of fire-proof clay, fireplace, breakdown of the heat exchanger, etc. The current procurement price of boilers ranges between EUR 2500 and 3000.

Shelves for drying were purchased at favorable prices since they were mostly purchased as second-hand items from state-owned companies that had gone bankrupt.

Investors mostly invest in the facilities and then purchase equipment and use an indirect type of drying.

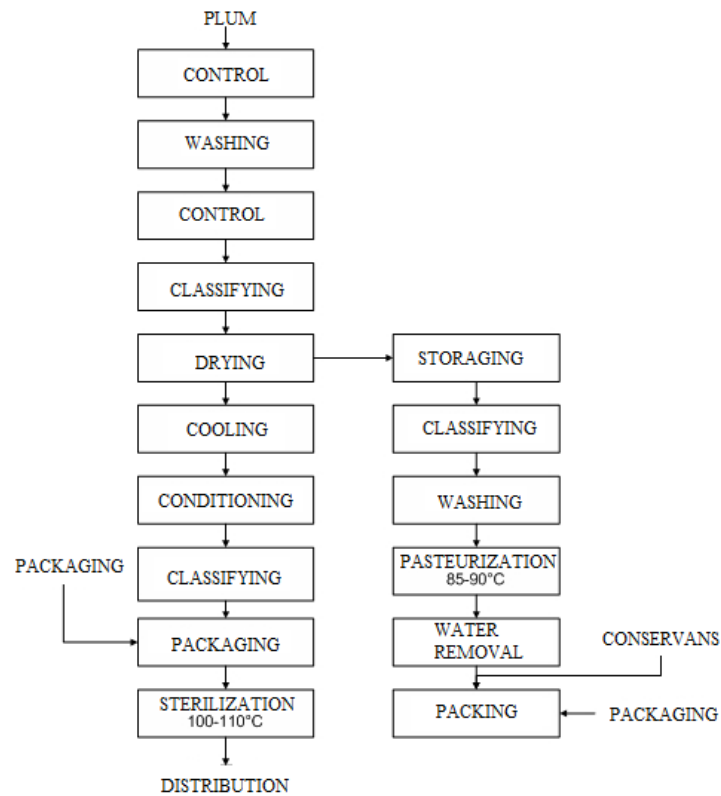


Fig. 2 Plum drying technology

During the last several years, about 110 new tunnels for plum drying were installed in the wider area, while the areas under plum plantations have been slightly increased.

The increase of number of drying facilities has increased the demand for fresh plums, which has affected its price which amounted to 50 RSD/kg in this area in 2017, while this price ranged between 10 and 20 RSD/kg in previous years. The increased demand made space for unscrupulous traders and suppliers who offered the goods of lower quality or committed other fraudulent activities. Such activities reduced the export to foreign markets, which resulted in the need to make new adjustments (7).

Prunes are a product with stable demand at the local market (4), while international demand increased during certain years.

In order to show the current situation in terms of plum drying and sales, the period 2015-2017 was analyzed. This period was chosen due to the fact that significant changes and external shocks took place during this period and also due to the fact that the interviewed persons remembered this period best, while they described the period before the observed period as a comparatively calm period. This period was also chosen since it is crucial for understanding the functioning of the process of plum drying and sale, as well as for understanding the future development.

For prune marketing purposes, in addition to drying process other technological processes should be implemented. Traders and producers call the entire process “12 steps before sales”. The actual sale represents the 13th step. The processes shown in Figure 2 must be performed in order to prepare prune for marketing activities in retail.

3. DISCUSSION ON THE RESULTS

Taking into account the current situation in terms of production of fresh plums and prunes and the sales of the same, the analysis results are as follows:

- The increased number of drying facilities for plum drying is a response to the increased demand for prunes, primarily coming from international markets. The increased foreign demand was the result of poor supply from other foreign suppliers, which created a favorable starting position for local suppliers. However, during the high foreign demand, some unscrupulous traders appeared and offered the goods of inadequate quality and performed other activities that were not in accordance with good trading practice. Such behavior resulted in low number of foreign customers in the upcoming period and increase in prune stocks.
- The increase of the drying facilities' capacities was not followed by the increase of surface covered by plum trees, which in the conditions of the increased demand resulted in the increase of the fresh plum price by 2,3 times. The fresh plum price increase positively affected the fresh plum producers, but it negatively affected other participants in the marketing chain.
- Since small plum producers and manufactures dominate in the municipality of Osečina, they cannot influence the price individually. However, external

factors can significantly affect the situation. For example, if a dominant trader appears, as in 2015, it can affect the balance and cause a sudden increase in the price of fresh plum, causing problems to local drying facilities.

- Newly-built drying facilities are of lower capacity, poorly equipped, resulting in the heat loss and making the drying process more expensive. Automation is usually lacking.
- Due to such situation in plum drying process, a typical trader's calculation regarding prune is as follows: the estimated cost price of prune production ranges between 1,3 and 1,8 EUR/kg. Contribution margin of 30% is added to this price by processing firms in Osečina. The precise amount of cost price would require the analytical calculation (Andrić, 1998).
- Taking into account the existing capacities for plum drying in Osečina and surfaces under plum trees, it cannot be expected that the price of fresh plum intended for drying will decrease in the future.
- In order to increase plum production it is necessary to develop new and modern orchards. Taking into account current prices and relations in marketing channels, it is considered that the minimal surface of the orchard with the trees planted in rows with modern cultivation systems – irrigation and hail protection systems – should be 12 ha. Such investments are currently supported by banks (Interview-1).
- Currently, participants in the marketing chain operate independently and have no interest in taking into account the position of other participants. For example, small producers sell fresh plums to traders willing to pay a better price, regardless of the agreements. At the same time, processors often use their dominant position in purchasing plums.
- It appears that the participants in the marketing chain of prune sales lack knowledge of the entire vertical chain and processes starting with fresh plum, investments in the facility and equipment, good process management, plum finishing process, storage, packing, preparatory sales actions, sale and customer behavior.

4. CONCLUSION

Plum drying capacities in the municipality of Osečina were significantly increased in the last several years, which were not followed by the increase fresh plums production. Consequently,, utilization of drying facilities were on the low level.. With the current fresh plum production quantities, the drying capacities could be used only half a month during a year. The production and processing activities are dominated by small producers who cannot influence the prices. The appearance of fresh plum traders from other regions can significantly change the situation. Prune demand exist on both, the domestic and in the foreign market. Marketing chain participants lack knowledge in vertical chain

operation and modern marketing which negatively affects the sale of prune. In order to achieve a better sale results it is necessary to improve functioning of the local market. The increase fresh plum supply can be achieved only by planting modern orchards.

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