**ANNALS OF THE UNIVERSITY OF CRAIOVA**

***Series:*** ✓*Biology*
✓*Horticulture*
✓*Food products processing technology*
✓*Environmental engineering*

**Vol. XXXI (LXVII) - 2026**

# EFFECT OF SOME PLUM CULTIVARS ON PRODUCTIVITY, COLOUR AND BIOCHEMICAL PARAMETERS ON THESE CULTURE IN NORTHERN REGION OF THE COUNTRY

Burlacu Maxim[1], Pește anu Ananie[1]*
[1*]Technical University of Moldova,
Faculty of Agricultural, Forestry and Environmental Sciences
**Corresponding author. E-mail: ananie.pesteanu@h.utm.md*

***Keywords****: plum, cultivar, production colour, biochemical, quality.*

## ABSTRACT

*The study aimed to evaluate the yield, fruit colour and biochemical characteristics of six plum cultivars grown in the north of the Republic of Moldova, under the conditions of the year 2026. The research was carried out in the 'Agrofields' enterprise plantation on the cultivars 'Pitești an', 'Cacanska Najbolia', 'Empresso', 'Stanley' (control), 'Blue Free' and 'President'. The trees were grafted onto Prunus cerasifera rootstock, planted at a distance of 5.0 × 3.0 m and trained into a high-volume mixed pyramid shape. The experiment included four replicates of eight trees each for every variety. The following parameters were determined: yield, average fruit weight, CIELAB colour coordinates (L*, a*, b*), soluble solids content (SSC), titratable acidity (TA), the SSC/TA ratio and vitamin C content. The average fruit weight ranged from 40.9 g for 'Stanley' to 58.7 g for 'Empresso'. The 'Cacanska Najbolia' variety recorded the lowest number of fruits and the lowest yield (207 fruits/tree; 7.81 t/ha), and 'Blue Free' the highest values (728 fruits/tree; 23.39 t/ha). Negative values for the b* coordinate indicated a blue component in the skin colour, whilst the pulp had a predominantly yellow component. SSC ranged from 15.91 to 20.64 %, TA from 0.79 to 1.51 %, the SSC/TA ratio from 12.41 to 23.11, and vitamin C from 9.32 to 12.47 mg per 100 g fresh weight. The results highlight distinct profiles of the cultivars in terms of fruit yield and composition. Under the studied conditions, 'Blue Free' had the highest yield, 'Empresso' had the highest average fruit weight and the highest vitamin C content, and 'Stanley' had the highest SSC/TA ratio.*

## INTRODUCTION

The plum (*Prunus domestica* L.) is one of the most widely cultivated stone fruits in the temperate regions of the world. It is grown over vast areas primarily for its fruit, which holds significant nutritional and economic value (Burlacu 2025, Burlacu & Pește anu 2025a, Butac 2010, Cimpoieș 2018). In the Republic of Moldova, as well as in neighbouring countries, this species is widely cultivated due to its adaptability to soil and climate conditions, its resistance to stress factors, its nutritional value and local traditions. In 2024, the total area of productive plum orchards covered 17.1 thousand hectares, with a yield of 95.2 thousand tonnes, accounting for 15.0 % of the country's total production of fruit and berries, which generated sales of 61.9 million USD (www.statistica.gov.md). The significant proportion that the plum tree accounts for in the structure of orchards, the production

obtained and exported, and the financial revenue generated, requires us to study and complete the range of this culture with new cultivars that will ensure a long, uninterrupted conveyor, ranging from the earliest to the latest cultivars. This careful selection of cultivars will ensure a supply of fresh plums for both the fresh market and the processing industry over a period of 60 - 70 days (Burlacu & Pește anu 2025b, Cociu et al. 1997, Drobotă et al. 1991, Milatovic et al. 2019). Selected new plum cultivars must be productive and resistant to major diseases (Butac et al. 2013, Cociu et al. 1997), while showing minimal susceptibility to alternate bearing (Juraveli et al. 2022). They must meet high-quality standards, exhibit uniform ripening without premature fruit drop at maturity, and possess commercial and processing characteristics that align with market demands. Furthermore, they should optimally utilize the local ecological conditions and leverage the region's long-standing tradition of plum cultivation (Burlacu & Pește anu 2026, Păltineanu et al. 2017, Popa et al. 2019). The organoleptic characteristics of the fruit: its size, shape and flavour, combined with its balanced biochemical profiles and high yield, create the prerequisites for the establishment of a sustainable fruit production (Bozhkova 2014, Micu et al. 2024). The aim of this study was to analyse the performance of six plum cultivars from different breeding centres in terms of yield, colour intensity of the fruit and biochemical indicators in the northern region of the country, under the climatic conditions of 2026.

## MATERIAL AND METHODS

The research was carried out in the plum plantation of the enterprise SRL 'Agrofields', the village Zguriț a, Drochia district, in the northern part of the Republic of Moldova, latitude 48°07′37″N and longitude 28°00′35″E. Altitude was 158 metres above sea level. The research was carried out on the cultivars 'Piteș tean', 'Cacanska Najbolia', 'Empresso', 'Stanley' (control), 'Blue Free' and 'President'. The trees were grafted onto *Prunus cerasifera* rootstock, planted at a distance of 5.0 × 3.0 m and trained into a high-volume mixed pyramid shape. Orchard management was consistent with cultural practice as: summer pruning, fertilization, pest and disease control, without irrigation. The soil in the orchard is leached chernozem with a loamy-clay texture, pH 7,8. The fruit load within the crown has not been regulated, resulting in an optimal number of fruits. In late autumn, before the onset of rainfall, 20 kg/ha of $P_2O_5$ and 80 kg/ha of $K_2O$ were incorporated into the soil, and in spring, 70 kg/ha of active substance nitrogen (urea) were applied.

The lower average temperature in January was -...5.8 °C, with a maximum of -...21.8 °C. The highest temperatures were recorded in August, when the above-mentioned values were 21.4°C and maximum 39.0 °C. In June and July, the average monthly temperature was around 19,7 °C and 19,7 °C, respectively. In the other months, the average monthly temperature was around 15.0 °C (May, September), or lower in the other months. Atmospheric precipitation during the 9-month period was 435.8 mm, with the highest amounts recorded in May (82.4 mm), June (131.6 mm) and August (54.4 mm), accounting for 61.6 % of the total rainfall quantity. The rainfall at the end of the first and third decades of August influenced the plum yield of the cultivars (Empresso, Stanley, Blue Free) that were 12–15 days away from ripening. The average monthly relative humidity ranged from 69.2 % in May to 89.6 % in January (Figure 1). These weather conditions were favorable for the growth and production of fruit on the plum crop (Balan et al. 2021).

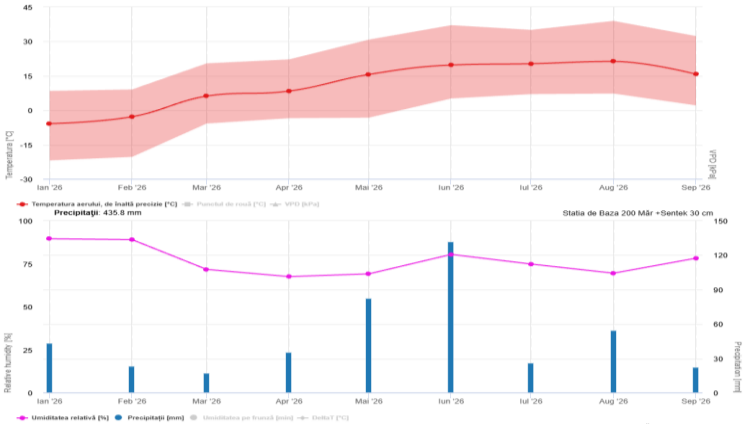



Figure 1. Climatic conditions in the experimental plot at the SRL “Agrofields’ during nine months of 2026 (iMetos weather station).

The variants on the field were structured in blocks according to using the randomised method. Each variant included 4 repetitions, and each repetition consisted of 8 trees. The number of trees within a variant (cultivar) was 32.

Orchard productivity was determined by weighing the fruit from each tree within a variant, followed by the calculation of the arithmetic average yield per tree x 666.67 psc per hectare. The number of fruits on the tree was estimated based on the ratio of tree yield to average weight.

From each cultivar, 30 fruits were randomly selected from each repetition during harvesting, and fruit weight, their color; soluble solids content (SSC), titratable acidity (TA), the SSC/TA ratio and vitamin C content were determined. The parameters mentioned above were evaluated in four replicates, after which their averages were calculated for each variant.

The skin and pulp colour variables (L*, a*, b*) were measured on four fruit samples on the site opposite the fruit suture, immediately after picking using a Portable Spectrophotometer MiniScan EZ 4500L, where L* corresponds to colour brightness, a* and b* to the chromaticity coordinates (on green to red and blue to yellow tones, respectively). The chromaticity parameters were recorded and summed up, after four replicates of each sample (Usenik et al., 2009). To determine the colour of the flesh, a section of the skin containing the pulp was removed from both parts of the fruits suture so that the area in focus could be scanned.

Soluble solids content (SSC) of the plum juice was determined at 20 °C using a PAL-1 portable digital refractometer (ATAGO, Tokyo, Japan), previously calibrated with distilled water. Three analytical measurements were performed, and the final results were expressed as the average value in °Brix.

Titratable acidity (TA) was determined using juice obtained from the pooled sample from each replicate. Weighed out to a 50 g aliquot of the homogenized sample was quantitatively transferred to a 250 ml graduated flask and diluted to volume with distilled water at room temperature. The mixture was thoroughly homogenized and filtered, after which a 25-ml aliquot was automatically titrated with 0.1 N NaOH titration to pH 8.2, using a TitroLine 5000 automatic titrator system (Si Analytics, Mainz, Germany). The results were expressed as percentage (%) of malic acid. The analysis was performed in triplicate for each replicate.

Ascorbic acid content (AAC) was determined by titration with a standardized 2,6 - dichlorophenolindophenol (DCPIP) solution of known concentration. In a mortar, 10 - 15 g sample of fruit tissue was ground with 5 - 10 g of quartz sand and 30 - 40 ml of acetic acid solution. The homogenate was quantitatively transferred to a 100-ml flask using acetic acid solution, diluted to volume, thoroughly mixed and filtered. A 10-ml aliquot of the filtrate was transferred to a conical flask and titrated rapidly with 0.001 N DCPIP solution until a persistent pale pink endpoint was obtained. Ascorbic acid content was calculated based on the volume of DCPIP solution consumed during titration and expressed as mg/$100^{-1}$ g of fresh weight (FW).

Statistical analyses of the results were performed using SPSS Statistics 18.0 (SPSS Inc., Chicago, IL, USA). Analysis of variance (ANOVA) was used to assess the effects of the experimental factors, and average comparisons were performed using Duncan's multiple range test when significant differences were detected. Statistical significance was considered at $p<0.05$. Results were expressed in comparison to the control.

## RESULTS AND DISCUSSIONS

Plum orchard productivity is closely correlated with the biological characteristics of the studied cultivars and the weather conditions during tree growth and fruiting. The lowest number of plums was recorded for the 'Cacanska Najbolia' cultivar (207 pcs), while the highest values were observed for 'Blue Free' (728 pcs). The other cultivars showed intermediate values, ranked in descending order as follows: 'Stanley' (C) (567 pcs), 'Empresso' (497 pcs), 'President' (435 pcs), 'Piteștean' (344 pcs), and 'Cacanska Najbolia' (207 pcs) (Table 1).

Table 1

Plum orchard productivity in the northern region of the country based on the biological characteristics of the cultivars, 2026

| Cultivar | Number of fruits, pcs/tree | Average weight, g | Production | | % relative to control |
|---|---|---|---|---|---|
| | | | kg/tree | t/ha | |
| Piteștean | 344±24c | 46.5±2.6c | 16.00±0.67d | 10.67±0.34d | 69.0 |
| Empresso | 497±35b | 58.7±2.9a | 29.17±0.75b | 19.44±0.24b | 125.7 |
| Cacanska Najbolia | 207±17d | 56.6±3.6a | 11.71±0.34e | 7.81±0.41e | 50.5 |
| Stanley (C) | 567±27b | 40.9±1.6c | 23.19±0.23c | 15.46±0.42c | 100.0 |
| Blue Free | 728±19a | 48.2±3.6b | 35.18±0.36a | 23.39±0.53a | 151.3 |
| President | 435±42c | 51.0a±4.6 | 22,18c±0.25 | 14.78c±0.67 | 95.6 |

Note: Different lowercase letters within the same column indicate significant differences among cultivars at $p < 0.05$ according to Duncan's multiple range test.

Average fruit weight is an indicator that influences the organoleptic characteristics of the plums and determines the target market for the produce; together with the number of fruits per tree crown, it defines the yield per tree and per unit area. In the reference year, the lowest average weight was recorded for the 'Stanley' (control) cultivar (40.9 g), while the highest was observed for 'Empresso' (58.7 g), which showed a 43.5% increase compared to the control variant. Based on average weight, plum cultivars can be classified by fruit size as: small (under 30 g), medium (30 - 40 g), large (40 - 50 g), and very large (over 50 g) (Mitre, 2007). On the global fruit market, regardless of whether the fruit is intended for fresh

consumption or dehydration, cultivars with fruit weighing over 35 g are highly valued (Popa et al. 2019). The results indicate that, based on the studied parameter, the fruits fall into the large category: 'Stanley' (40.9 g), 'Piteștean' (46.5 g), and 'Blue Free' (48.2 g) cultivars and the very large category, comprising the 'President' (51.0 g), 'Cacanska Najbolia' (56.6 g), and 'Empresso' (58.7 g) cultivars.

Production per unit area correlates with yield per tree, as the planting density (666.67 trees/ha) is identical for all cultivars. The lowest fruit yield was recorded for the 'Cacanska Najbolia' cultivar (7.81 t/ha); in ascending order, this was followed by 'Piteștean' (10.67 t/ha), 'President' (14.78 t/ha), 'Stanley' (control) (15.46 t/ha), 'Empresso' (19.44 t/ha), and 'Blue Free' (23.39 t/ha). A more pronounced reduction in yield compared to the control variant was observed in the 'Cacanska Najbolia' (49.5 %) and 'Piteștean' (31.0 %) cultivars; the reduction for 'President' was 4.4 %, whereas 'Empresso' and 'Blue Free' showed increases of 25.7 % and 51.3 %, respectively.

The colour of the skin and pulp are among the most important criteria for determining ripeness in stone fruits, but they are not reliable indicators for assessing the degree of ripeness in plums, because many genotypes develop pigmentation as early as the initial stages of fruit development (Usenik et al. 2008). There is considerable variability in skin and flesh colour amongst European plum cultivars (*Prunus domestica* L.) during fruit ripening and immediately upon maturity (Usenik et al. 2009). According to the CIELAB color scale, significant difference was observed regarding fruit skin color among the studied cultivars. The average lightness value (L*) was 32.73, ranging from 30.07 for the 'Cacanska Najbolia' cultivar to 37.00 for 'President'; these values place the respective cultivars closer to black on the L* axis (Table 2).

Table 2

Table 2. Skin and flesh color index of various plum cultivars, 2026

| Cultivar | Skin color | | | Pulp color | | |
|---|---|---|---|---|---|---|
| | L* | a* | b* | L* | a* | b* |
| Piteștean | 31.73 | 4.11 | -2.16 | 54.73 | 2.94 | 30.00 |
| Empresso | 34.07 | 7.16 | -1.19 | 53.80 | 1.61 | 36.34 |
| Cacanska Najbolia | 30.07 | 0.32 | -3.50 | 50.74 | 5.69 | 29.68 |
| Stanley (C) | 30.25 | 2.51 | -2.53 | 52.48 | 2.64 | 31.90 |
| Blue Free | 33.24 | 2.16 | -5.68 | 43.14 | 4.52 | 34.19 |
| President | 37.00 | 10.45 | -0.53 | 61.38 | 1.77 | 36.43 |
| Average | 32.73 | 4.45 | -2.60 | 53.71 | 3.20 | 33.09 |

Regarding the a* axis, color results for the plum cultivars showed the lowest values for 'Cacanska Najbolia' (0.32) and higher values for 'Empresso' (7.16) and 'President' (10.45). The 'Piteștean', 'Stanley', and 'Blue Free' cultivars recorded intermediate values of 4.11, 2.51 and 2.16, respectively. The average value across these six cultivars was 4.45, corresponding to the red color range.

For the b* axis, only the 'Blue Free' cultivar was characterized by a lowest value (-5.68), while 'President' showed the higher value (-0.53). The other cultivars recorded values between -1.19 and -3.50, falling within the recorded average range (-2.60). Negative values for b* indicate that the skin colour is blue. It has been established that as the fruit approaches optimal maturity, the cultivars become redder (a*) and bluer (b*) (Vangdal et al. 2005). The average L* value was 32.72 for

the skin and 53.71 for the flesh. The highest flesh lightness (L*) was recorded for the 'President' cultivar (61.38), while the lowest was found in 'Blue Free' (43.14). The other cultivars showed intermediate values for this index (50.74 - 54.73).

Regarding the a* axis, the results show a higher increase in this index for the 'Cacanska Najbolia' cultivar (5.69) and lower values for 'Empresso' (1.61) and 'President' (1.77). The remaining cultivars recorded intermediate values (2.64 - 4.52). This indicates that the green color of the flesh no longer persists; instead, a slight reddening is observed. As for the b* axis, the flesh color was clearly yellow across all cultivars. The average value was 33.09. Higher values were recorded for the 'Empresso' (36.34) and 'President' (36.43) cultivars, while lower values were observed for 'Cacanska Najbolia' (29.68). The other cultivars recorded average values ranging from 30.00 to 34.19.

Soluble solids content reflects the sugar concentration in the flesh and is associated with the fruit's sweetness. A value of 15 – 20 % can be considered an optimal threshold for many plum cultivars intended for fresh consumption and industrial processing (Bozhkova 2014, Ionica et al. 2013). The values obtained for the studied parameter ranged from 15.91 % for the 'Pitești̦ean' cultivar to 20.64 % for the 'Cacanska Najbolia' cultivar. The other cultivars recorded average values ranging from 17.50 % for 'Blue Free' to 19.40 % for 'Empresso' (Table 3).

Table 3

Soluble solids content, titratable acidity, SSC/TA ratio and vitamin C content of six plum cultivars in 2026

| Cultivar | SSC, % | TA, % | SSC/TA | Vitamin C, mg/100gr |
|---|---|---|---|---|
| Pitești̦ean | 15.91±1.43c | 0.87±0.02c | 18.28±1.04b | 9.32±0.65c |
| Empresso | 19.40±1.74a | 1.51±0.04a | 12.84±0.85c | 12.47±0.88a |
| Cacanska Najbolia | 20.64±1.67a | 0.94±0.01b | 21.95±1.32a | 9.75±0.54 c |
| Stanley (C) | 18.26±1.54b | 0.79±0.03c | 23.11±1.15a | 11.00±0.45b |
| Blue Free | 17.50±1.37b | 0.92±0.02b | 19.02±1.16b | 10.15±0.37c |
| President | 18.13±1.05b | 1.46±0.01a | 12.41±0.75c | 12.18±0.51a |

Note: Different lowercase letters within the same column indicate significant differences among cultivars at $p < 0.05$ according to Duncan's multiple range test.

Titratable acidity contributes to the flavor balance of plums. For plums, the titratable acidity typically found at the ripening stage should be approximately 0.4-1.5 %, though it can vary considerably depending on the scion/rootstock combination and growing conditions (Cimpoieș 2018). The research conducted indicates that titrable acidity in the plums ranged from 0.79 % for the 'Stanley' cultivar to 1.46 - 1.51 % for the 'President' and 'Empresso' cultivars. The remaining cultivars recorded average values for this parameter ranging from 0.87 % to 0.94 %. By comparison, the 'President' and 'Empresso' cultivar are characterized by higher acidity.

The ratio of soluble solids contents to titratable acidity serves as a composite indicator of the overall flavor balance. High values suggest a predominantly sweet taste ('Stanley' - 23.11), whereas low values reflect pronounced acidity ('President', 'Empresso' - 12.41 - 12.84). The other plum cultivars exhibited intermediate values for this ratio (18.28 - 21.95).

Vitamin C is a valuable fruit quality indicator, contributing to antioxidant properties (Nisar et al. 2015). A level of approximately 9.0 - 17 mg of Vitamin C per

100 g of fresh fruit is typical for many plum cultivars; however, content can vary significantly depending on the cultivar, stage of maturity, climatic conditions, tree nutrition, and time of harvest (Walkowiak-Tomczak 2008). Vitamin C values in the plums ranged from 9.32 mg/100 g FW ('Pitești'an') to 12.18 - 12.47 mg/100 g FW ('President', 'Empresso'). The other cultivars studied showed intermediate levels (9.32 - 11.00 mg/100 g FW), falling within recommended ranges. These biochemical indicators are some of the components of the chemical composition of plums, which are relevant to their nutritional quality.

## CONCLUSIONS

The climatic conditions of 2026 and the biological characteristics of the variety had an impact on the number of fruits in the crown of the plum trees (207–728), the average weight of a fruit (40.9–58.7 g) and fruit yield per tree (11.71 - 35.18 kg) and per unit area (7.81 - 23.39 t/ha).

The varieties studied, classified according to skin colour, are blue (-0.53...-5.68) and, within the yellow category (29.68 - 36.43), exhibit an insignificant red tinge (1.61 - 5.69).

The soluble solids content of the plum cultivars studied ranged from 15.91 ('Pitești'an') to 20.64 % ('Cacanska Najbolia'), the titratable acidity from 0.79 ('Stanley') to 1.51 % ('Empresso'), and the vitamin C from 9.32 ('Pitești'an') to 12.47 mg/100 g ('Empresso').

Blue Free had the highest recorded yield (23.39 t/ha), Empresso the largest recorded fruit weight (58.0 g) and highest vitamin C content (12.47 mg/100 g FW), and Stanley the highest SSC/TA ratio (23.11).

## ACKNOWLEDGMENT

The research was supported by the Institutional Project, subprogram 020407 'Development and implementation of good practices of sustainable agriculture and climate resilience' GREEN, implemented at the Technical University of Moldova.

## REFERENCES

Balan V., Peşteanu A., Nicolaescu, Gh. 2021. Bunele practici de creştere a fructelor, strugurilor şi pomuşoarelor în contextul schimbărilor climatice Chişinău: Bons Offices, pp. 150.

Bozhkova V. 2014. Chemical composition and sensory evaluation of plum fruits. Trakya University Journal of Natural Sciences, 15(1): 31-35.

Burlacu M. 2025. Comportarea soiurilor de prun în perioada de fructificare în zona de nord a Republicii Moldova. Ştiinţa agricolă, 1, 62-71.

Burlacu M., Pești'teanu A. 2025a. Productivity of some plum cultivars under the climatic conditions of the Republic of Moldova. Annals of the University of Craiova: Biology, Horticulture, Food products processing technology, Environmental engineering, XXX(LXVI), 169-174.

Burlacu M., Pești'teanu A. 2025b. Productivity of the plum plantation during the fruiting period according to the cultivated assortment. Advanced Biotechnologies – Achievements and Prospects: Scientific International Symposium, Chişinău: Editura USM, pp.119-120.

Burlacu M., Pești'teanu A. 2026. The behavior of plum cultivars in the context of climate change in the Northern region of Moldova. JOURNAL of Horticulture, Forestry and Biotechnology. Vol. 30(1), pp. 62-68.

Butac M. 2010. Ameliorarea prunului. Pitești: Ed. Universităţii din Piteşti, 101 p.

Butac M., Bozhkova V., Zhivondov A., Milosevic N., Bellini E. et al. 2013. Overview of plum breeding in Europe. Acta Horticulturae, 981, 91-98.

Cimpoieş Gh. 2018. Pomicultura specială. Chişinău: Print Caro, 143-204.

Cociu V., Botu I., Minoiu N., Pasc I., Modoran, I. 1997. Prunul. Romania: Conphys, 434 p.

Drobotă Gh., Drobotă M., Strâmtu D., Cârdei, E. 1991. Cultura prunului. Bucureşti: Editura Ceres, 144 p.

Juraveli A., Terentii P., Cozmic, R. 2022. Genofondul prunului și rezultatele utilizării lui. Pomicultura, Viticultura şi Vinificaţia, 2(88), 17-25.

Micu S.M., Popoviciu D.R., Grosu M.I., Radu, M.D. 2024. Biochemical Characterization of Some Plum Cultivars Available on the Romanian Market. Appl. Sci. 14, 11311.

Milatovic D., Durovicz̆ec D. G., Radovic A.,Boskov, D. 2019. Evaluation of late plum cultivars in the region of Belgrade (Serbia). Acta Scientiarum Polonorum Hortorum Cultus, 18(1), 67-74.

Mitre V. 2007. Pomologie. Cluj Napoca: Editura Todesco, 393 p.

Nisar H, Ahmed M., Anjum M.A., Hussain, S. 2015. Genetic diversity in fruit nutritional composition, anthocyanins, phenolics and antioxidant capacity of plum (Prunus domestica) genotypes. Acta Sci. Pol., Hortorum Cultus 14(1), 45-61.

Ionica M. E., Nour V., Trandafir I., Cosmulescu, S., Botu, M. 2013. Physical and chemical properties of some european plum cultivars (*Prunus domestica* L.). Notulae Botanicae Horti Agrobotanici Cluj-Napoca, 41(2), 499-503

Păltineanu C., Dumitru S., Chițu E., Tănăsescu N., Butac M. et al. 2017. Prunul și mărul în sistemul sol-plantă-atmosferă în soluri cu textură medie și ușoară. Iaşi: Editura Terra Nostra, 260 p.

Popa S., Cumpanici A., Braghiş A., Rîbinţev I., Zbancă A. 2019. Producerea prunelor. Manual tehnologic. Chişinău, 244 p.

Usenik V., Kastelec D., Veberic R., Stampar F., 2008. Quality changes during ripening of plums (Prunus domestica L.). Food Chem. 111, 830-836.

Usenik V., Stampar F., Veberic R., 2009. Anthocyanins and fruit colour in plums (Prunus domestica L.) during ripening. Food Chem. 114, 529-534.

Vangdal E., Mage F., Dooving A. 2005. Prediction of Fruit Quality of Plums (*Prunus domestica* L.). Acta Hort. 674, 613-617.

Walkowiak-Tomczak D. 2008. Characteristics of plums as a raw material with valuable nutritive and dietary properties-a review. Pol. J. Food Nutr. Sci. 58 (4), pp. 401-405.

www. statistica.gov.md