Scientific Papers. Series B, Horticulture. Vol. LXV, No. 2, 2021
Print ISSN 2285-5653, CD-ROM ISSN 2285-5661, Online ISSN 2286-1580, ISSN-L 2285-5653

EVALUATION OF SENSORY PROPERTIES AND CONSUMER PERCEPTION OF MIXTURE TEAS, OBTAINED FROM ORGANIC FREEZE DRIED FRUITS AND VEGETABLE

Nela DRAGOMIR[1], Carmen Georgeta NICOLAE[1], Andreea STAN[2], Violeta Alexandra ION[2], Mihai FRINCU[2], Andrei PETRE[2], Liliana BĂDULESCU[2], Aurora DOBRIN[2]

[1]University of Agronomic Sciences and Veterinary Medicine, 59 Mărăști Blvd, District 1, Bucharest, Romania
[2]Research Centre for Study of Food Quality and Agricultural Products, University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Mărăşti Blvd, District 1, Bucharest, Romania

Corresponding author email: liliana.badulescu@usamv.ro

Abstract

The health effects of the active components in organic fruits and vegetables are well known. Our goal was to obtain a mixture of organic powders, from fruits and vegetables, to be enjoyed as tea for both personal satisfaction and health. The ecological powders were realized at the Research Centre for Studies of Food Quality and Agricultural Products, USAMV Bucharest. This study was conducted to identify the sensory characteristics of two kind of mixture teas containing organic ingredients and analyse sensorial attributes for the products based on consumer acceptance. The attributes were analysed by classifying them as appearance, colour and texture for dehydrated fruit and vegetable blended teas, infusion observation and tasting tea infusions from fruit and vegetable powder ecological by on appearance, flavoured, aroma, texture or mouthfeel, and any aftertaste. Principal component analysis results showed that the mixture teas analysed are generally tasty, with a discreet sweet taste, sour and aromatic sweetness due to the dehydrated apple and was well appreciated by the consumer.

Key words*: antioxidant activity, consumer perception, dried ecological powder, mixture of teas, total polyphenols.*

INTRODUCTION

The society is constantly changing and, at the same time, its preferences. Consumption preferences are varied and profoundly changed compared to the past; consumers are no longer classified only in terms of income, demographic variables and lifestyle (Popa et al., 2017; Farruggia et al., 2016). The modern consumer is more attentive to his and his family's health, to sustainable and sustainable consumption, is thirsty again and innovative (Dragomir et al., 2017). Also, consumer attitudes and beliefs are factors that influence the acceptance or rejection of new foods (Stan et al., 2017).

The concern for health also translates into a higher and varied consumption of teas, consumed for therapeutic or relaxation purposes. In the tea beverage industry, it is known that the characters of tea change from season to season, from process to process from time to time. In search of new solutions, manufacturers mix different types of teas from different fields and come up with a mixture of products that conform to the color, taste, aroma and other acceptable perceptions of the consumer. Thus was born - the mixing of tea - a new tool for tea marketing (Gogoi, 2014; Kim et al., 2019).

Blending is a much highly elevated art form; though not exactly scientific, it's a highly skilled art practiced by a few who truly know their craft. Simply mixing of more than a single kind or grade of tea cannot fulfil the demand and perception of the consumers (Gogoi, 2014). The mixing of tea make from fruit gives us the opportunity to enjoy a complete, sensory and mental experience. We can thus observe the characteristics of each type of fruit and plant mixture, quality, fragrance, texture, color, etc. To taste the fruit infusion, a taster needs a lot of attention and, especially, some exercise.

New flavored powdered beverages now contain a variety of healthful ingredients from fruit and fiber to protein, and these mixes are now the

right products at the right time in a growing era of label-friendly, functional and sustainable products. Choosing the right ingredients for this mixture is essential and the ticket to success will be a combination of functional and label-friendly ingredients (Asioli et al., 2017; Dragomir, 2019).

What's more, powdered mixes now provide a wide range of nutritional benefits with a high degree of functionality. They are also cost-effective, easy to store and more sustainable when packaging doesn't rely on single-use plastic bottles. And in these times of pandemic, consumers will also appreciate the convenience and safety of buying in bulk and mixing their own beverages as opposed to popping into the store for an RTD (ready to drink) beverage.

MATERIALS AND METHODS

Materials

The ingredients of organic farming offer the advantage of providing the consumer with clean, healthy and tasty products. For this reason, one way to use the ingredients of organic farming is to develop tea formulas from fruits and herbs.

The goal is to obtain a mixture of organic processed (slices, powders) fruits and vegetables, to be enjoyed as tea for both personal satisfaction and health.

In the study we used 3 freeze dried products, respectively:

- Freeze-dried organic apple (pulp and peel pieces and slices) - obtained from apples, from the organic Gala variety;
- Freeze-dried organic raspberry powder; Freeze-dried organic basil powder.

• ***Freeze-dried organic apple*** - Organic ingredient used in study is *freeze-dried organic apple* (pieces and powder), obtained by organic *Gala* variety, which was dehydrated by the lyophilisation process. The powder was obtained from peel, pulp, and mixture of both and their characterization is comprised most the antioxidant ability and free radical scavenging capacity, with correlation with content of polyphenolics and ascorbic acid, according to (Li et al., 2014; Badulescu et al., 2019). Drying using low temperatures represent a simple and easy way for minimally processing of organic fruits, moreover this procedure is accepted in organic agriculture (Stan et al., 2020). Apple powder it is an important source of polyphenols with high antioxidant capacity. Its presence in the recipe, balances the taste and aroma of the finished product, and the pieces of lyophilized apple give a pleasant texture and aroma to the product (Bădulescu et al., 2019).

Freeze-dried organic raspberry powder - Raspberries (*Rubus idaeus* L.) are one of the most economically important soft fruit due to their taste, appearance and composition. Organic raspberries represent a good source of anthocyanins, vitamins and mineral elements. The postharvest storage of organic fresh raspberries is relatively short and the injuries, rapid spoilage, nutritional and moisture loss lead to dramatically reduction of their commercial value (Stan et al., 2019; Roopesh et al., 2012).

Freeze-dried organic basil powder - Basil (*Ocimum basilicum* L.) belongs to aromatic plants due to their volatile compounds presented especially in leaves and flowering tops. These basil parts are used since antiquity for food preservation, flavouring, and as medicine, because of high antioxidant, antibacterial and antifungal activity of volatile oils, being good sources of natural antimicrobial and antioxidant agents, with possible application in food industry, cosmetics or medicine (Avetisyan et al., 2017).

By lyophilised basil retains the characteristics intense colour and flavour. Lyophilised basil powder is aromatic, slightly sweet, with spicy notes in taste. Because, it has a great capacity to rehydrate in the presence of water; its original character, such as the taste, colour and aroma specific to the basil, will be present in the new preparation. Added the powder from the lyophilized basil aromatizes to the product, balances the taste and increases the presservation of final product (William et al., 2019; Di Cairano et al., 2018).

Freeze-dried organic fruit and vegetable powders are obtained within the SusOrgPlus project at the Research Center for Studies of Food Quality and Agricultural Products of University of Agronomic Sciences and Veterinary Medicine of Bucharest.

Methods

The scope of research is to obtain a mixture of organic processed (slices, powders) fruits and

vegetables, to be enjoyed as tea for both personal satisfaction and health.
Will be followed: - sensory characteristics of two mixtures of teas containing organic ingredients, - sensorial attributes for the products based on consumer acceptance, and - nutritional characteristics of two blended teas.

Development of mixing teas
The blended fruit and vegetable powders, have been chosen according to the behavior of the new ingredients that are the object of the present study, respecting all the requirements provided by the legislation.
Sensory analysis of the products obtained during the study. Sample presentation: each sample was provided to the panelists in white plastic cups of about 75 ml. About 50 ml of each infusion were served and were approximately 60-70°C at the time of tasting. The panelists received mineral water to cleanse their palates between samplings of tea.

Consumer acceptance analysis
The sensory analysis was performed with the help of 50 tasters, in the *Laboratory for quality control of agri-food products*, within the University of Agronomic Sciences and Veterinary Medicine of Bucharest and within the Workshop *Consumer Acceptance Analysis*, held at the USAMV Bucharest Conference, University Research - Support for organic agriculture on October 30, 2019 at the INDAGRA 2019 International Fair.
Determination of the total content of polyphenolic compounds by the Folin-Ciocâlteu method. For the preparation of the extract was used the recommendation for preparation: Pour 200 ml of hot water at 100°C over a 2 grams of blended tea. Allow to infuse for at least 5-10 minutes (average 6 min), covering the cup. The extract was cooled to room temperature in order to be able to quantitatively determine the total polyphenol content using the Folin-Ciocâlteu method following a protocol adapted by Georgé et al., 2005.
Determination of antioxidant activity using the DPPH method. The antioxidant activity of the samples is determined based on the DPPH test, using the stable free radical 2,2-diphenyl-1-picrilhydrazyl - DPPH, according to a method Bujor et al., (2016).
To determine the antioxidant activity, use a volume between 200 µL of infusion and add 2 mL of DPPH solution (0.2 M) in methanol. Shake magnetically in the dark for 30 minutes. After incubation, the absorbance at 515 nm is measured.
Antioxidant activity is expressed as a percentage (%) of inhibition of DPPH radicals relative to the reference solution using the equation:

$$\%I = \frac{A_0 - A_c}{A_0}$$

where:
A_0 - absorbance of the reference sample at t = 0 minutes ;
A_c - absorbance of samples (with polyphenolic extract) after 30 minutes of rest (t = 30 minutes).

Statistical analysis
All the data represent the average of three replicates with independent sample preparation. Standard deviation was calculated using incorporated function of Microsoft Excel.

Nutrient Content
Nutrient content it was calculated using a program nutritional development tool, *Softmedia programme* (http://softfedima.ro/).
Softmedia programme makes it easy to prepare a nutrition facts panel, nutrition data sheet, ingredient statement for any food product. Formulas can be adjusted for moisture and/or fat content. Information can be printed, saved as a PDF document.

RESULTS AND DISCUSSIONS

1. Development of blended
Freeze dried organic fruit and vegetable powders are obtained within the SusOrgPlus project at the Research Center for Studies of Food Quality and Agricultural Products of University of Agronomic Sciences and Veterinary Medicine of Bucharest.
For blended the following powders were used:
- Freeze-dried organic apple (pulp pieces and peel) is obtained from apples, from the organic *Gala* variety;
- Freeze-dried organic basil powder;
- Freeze-dried organic raspberry powder.

By mixtures different types of dehydrated fruits, two products were obtained:

Table 1. Codes used for samples analysis

Sample	Main ingredients
T1	95% piece of freeze dried apple pulp and peel, 5% raspberry powder (figure 1)
T2	95% piece of freeze dried apple pulp and peel, 4% raspberry powder, 1% basil powder. (figure 2)

Figure 1. T1 sample- Organic fruit tea with pieces of freeze-dried apple and freeze-dried raspberry powder (Original photo)

Figure 2. T2 sample - Organic fruit tea with pieces of freeze-dried apple, freeze-dried raspberry powder and basil powder (Original photo)

The method consists in extracting of soluble substances in dried ingredients, containing in a porcelain or earthenware kettle, by means of freshly boiling water, pouring of the liquor into a white porcelain, examination of the organoleptic properties of the infused (adapted according to ISO 3103: 2019).

The dry mixture of fruits with particles of different sizes has a pleasant and homogeneous appearance. From the apples from the *Gala* variety, pieces of pulp and pieces of peel were used. Apple peel freeze-dried is extremely valuable from a nutritional point of view and comes in solving environmental problems.

Table 2. Characteristics of preparation (mixture fruits tea) products used in this study

Preparation conditions			
Sample	**Water (mL/tea bag)**	Temperature (°C)	Time (min)
T1	200	100±2°C	5-10
T2	200	100±2°C	5-10

The mixture powder fruits are recommended to store in airtight containers and kept at room temperature, without high humidity fluctuations.

2. Sensory analysis of the organic mixture fruit teas obtained during the study

Consumer preference is influenced by intrinsic quality attributes discovered before (colour, taste, flavour, and texture) (Sulistyawati et al., 2020) as well as on tea itself, its taste and smell. The sensory analysis performed along the way included: dry mixture teas analysis, and sensory analysis of mixture teas infusion.

Dry mixture teas analyzis

The shape of the pieces of size must be uniform, also in the case of powders. The color must be uniform and correspond to the type of ingredient; the texture of the ingredients must be in the case of pieces of crumbled dehydrated apple, easily broken.

The freeze-dried raspberry powder adheres to the surface of the apple pieces and creates a unitary whole. In sample T2, the lyophilized basil particles stand out quite well due to the color. Table 3 shows the results of the sensory assessment of the two types of tea made.

Table 3. Sensory attributes for the mixture tea organic fruits

Attributes	**T1**	**T2**
Overall appearance	Particle shape: raspberry powders are fine, easily adhere to the surface pieces of apple pulp and peel	Particle shape: raspberry powders are fine, easily adhere to the surface pieces of apple pulp and peel. The basil particles are visible and beautifully distributed in the mixture
Color	The color is specific to the freeze dried fruits present in the mixture (yellow to pink)	The color is specific to the freeze dried fruits present in the mixture (yellow with pink and green dots)
Texture	The pieces of apple stand out with a gummy texture and slightly sticky to the touch. Apple peels appears as hard particles. Raspberry powders have a nice appearance that adheres nicely to the surface of other products in the mixture.	The pieces of dehydrated apple stand out with a gummy texture and slightly sticky to the touch. Dehydrated apple peels appears as hard particles Raspberry powders have a nice appearance that adheres nicely to the surface of other products in the mixture. The basil powder has a very small size that adheres to the surrounding surfaces.

Sensory analysis of mixture teas infusion

For preparation of the infusion it is recommended to use white porcelain cups to taste the infusion color. We must follow exactly the preparation instructions of each type of tea: the amount of fruit, the water temperature and, especially, the infusion time.

When straining the tea, it is recommended not to squeeze fruits, because substances can be released which change taste.

Recommendation for preparation: Pour 200 ml of hot water at 100°C over a 2 grams of fruits tea. Allow to infuse for at least 5-10 minutes (average 6 min), covering the cup. Tea tasters and specialists in the field call fruit liqueur "*liqueurs*".

The observation of the infusion consists in appreciating the general appearance, the color of the liqueur and its clarity. Tasting the tea infusion, we must start by smelling it, and then taste it, because if we tasted it first, the initial perception could create a wrong impression. Thus, the information received by the brain through smell and taste forms the general impression about the profile of the tea we tasted.

Infusion must to be served and tasted at approximately 60-70°C at the time of tasting. The panellists received mineral water to cleanse their palates between samplings of tea.

Table 4 shows the results of the sensory assessment of the two types of tea made.

Table 4. Visual attributes for the infusion of mixture teas

Attributes	T1	T2
Appearance of infused fruits	The obtained tea has a slightly pink color; the fruits were rehydrated, the apple pieces and peel returned to their initial form. The raspberry particles were dispersed throughout the liquid mass. At the bottom of the cup a sediment is formed consisting of rehydrated raspberry and apple powders. At the top, gather the rehydrated pieces of apple.	The obtained tea has a slightly pink color, the pieces of apple and peel return to their original volume. The raspberry and basil particles were rehydrated but are dispersed throughout the liquid mass. The basil particles have rehydrated but tend to remain in suspension. At the bottom of the cup a sediment is formed consisting of rehydrated raspberry and apple powders. At the top, gather the rehydrated pieces of apple.
Clarity	The infusion shows hydrated fruit particles in suspension. The liquid is relatively clear. After separating the fruit, the liqueur becomes clear.	The infusion shows hydrated fruit particles in suspension. The liquid is relatively clear. After separating the fruit, the liqueur becomes clearer.
Color	The color is yellowish white with a pale pink tinge. It has a bright color, and the rehydrated fruits from tea have regained their native, beautiful shape.	The color is yellowish- white, slightly greenish with a shade of pale pink. It has a bright color, and the rehydrated fruits from tea have regained their native, beautiful shape. The basil particles are found at the top, to a large extent.

The smell or aroma of tea can be determined by two methods by which we can feel the smell of the tea infusion:

1) deep inhalations: keep the cup or bowl of tea as close as possible to the nose and inhale deeply;

2) quick inhalations: we quickly and superficially inhale the smell of the prepared tea.

The taste and aroma of fruit liqueur is determined by sipping a small amount of liquid, inhaling air and exhaling through the nose. By absorbing it in this way, the oxygen combines with the infusion, highlighting its distinctive notes. He then exhales through his nose, keeping his mouth closed, to discover the retro-olfactory characteristics. While tasting the tea, pay attention to the: sweet, tasty or slightly bitter. Table 5 shows the results of sensory assessment of the two types of tea made.

Table 5. Sensory attributes for tasting the infusion of mixture fruit teas

Attributes	T1	T2
Flavor and smell	Delicate apple, sour and fragrant. Predominates the smell of apples.	Delicate apple, sour and fragrant. Predominates the smell of basil.
Taste	The general impression is tasty, discreetly sweet, slightly sour and mild due to the dehydrated apple powder. The taste and aroma are balanced.	The general impression is tasty, sweet and sour, with a hint of aroma specific to basil.

3. Consumer acceptance analysis

A sensory evaluation for consumer acceptance testing was performed consumer groups of 50 tasters, using a 5-point Hedonic scale to determine the level of acceptance of mixture teas by organic freeze-dried fruits (Woods et al., 2016; Spence et al., 2021).

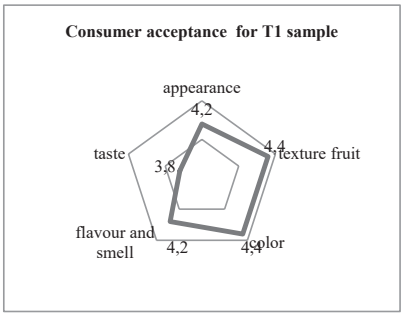

Figure 3. Consumer acceptability scores on a 5-point Hedonic scale for T1 sample

At tasting the T1 sample (Figure 3), consumers appreciated this assortment of organic tea, where they found the flavor of each fruit and a harmony between tastes and smells. The pieces of freeze dried apple rehydrated very well giving the liqueurs a special look, so that the two attributes received a weighted average grade of 4.4. Regarding the taste of T1 samples, the appreciation was very low because the apple taste is very discreet.

Overall, following the centralization of the grades given during the sensory analysis, a weighted average grade of 4.2 was obtained.

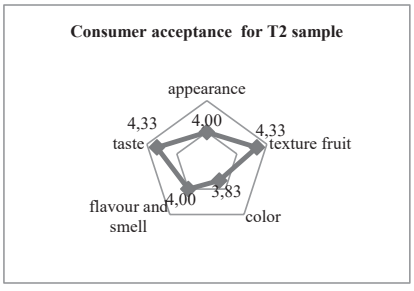

Figure 4. Consumer acceptability scores on a 5-point Hedonic scale for T2 sample

At the consumer's acceptance (Figure 4.), the T2 sample was extremely appreciated. The tasting found the flavor of each fruit but also a harmony between tastes and smells. The pieces of dehydrated apple rehydrated very well, giving the liqueurs a special look. The freeze-dried basil powder used as an ingredient slightly changed the appearance and color of the liqueur, and at the tasting it had a fine basil taste appreciated by a lower category of consumers. Overall, following the centralization of the grades given during the sensory analysis, a weighted average grade of 4.15 was obtained.

Total content of polyphenolic and antioxidant activity

The infusion obtained from the T1 sample shows a higher total polyphenol content, with 2.03 mg/mL of infusion more than T2 sample.

Table 6. Total content of polyphenolic and antioxidant activity

Tea infusion	Total polyphenol content (mg/mL of infusion)	Antioxidant activity (%)
T1	14.73 ± 1.28	48.93 ± 4.48
T2	12.71 ± 0.20	39.95 ± 0.04

Both T1 and T2 showed high antioxidant activity, with T1 having the higher value of 48.93 % inhibition

Even though the addition of 1% basil powder should increase the polyphenol and antioxidant capacity, it cannot compensate the high polyphenol and antioxidant activity of raspberry powder.

This result are in compliance with sensory analysis, for which T1 also received the highest general score 4.2.

Nutrient Content

The nutritional content and energy value is shown in the Table 7. Energy value is 1245,6 kcal per 100 g of product for both samples.

Table 7. Nutritional content for both mixture tea

Nutritional value for 100 g product		
	T1	**T2**
Energy	1245.6 KJ	1245.6 KJ
	294.4 kcal	294.4 kcal
Total fat	0.4	0.4
Saturated fat	0	0
Carbohydrates	66.6	66.6
Sugar	54	54
Fiber	10.2	10.2
Protein	1	1
Salt	0.1	0.1

Can be mentioned, as a product with allergenic potential, due to the raspberry powder. It is recommended to consume 1-2 cups a day.

CONCLUSIONS

The consumption of products from organic agriculture has increased a lot, on the current climate of the sanitary crisis and the preoccupation of the consumers for a healthy diet. This also translates into a series of by-products resulting from processing. To reduce waste, it is necessary to make new assortments of value-added products.

Obtaining mixture fruit teas from preserved organic ingredients, through various dehydration processes, is a sustainable and economically feasible option.

Blended fruit infusion is easily accepted by the modern consumer, especially because they are mindful about health. The same it is an option for a healthy diet.

The infusion obtained from the T1 sample shows a higher total polyphenol content, with 2.03 mg/mL of infusion more than T2 sample. Both T1 and T2 showed high antioxidant activity.

Addition of 1% basil powder should increase the polyphenol and antioxidant capacity, it cannot compensate the high polyphenol and antioxidant activity of raspberry powder.

Sensorial analysis show that T1 sample was more easily accepted by consumers than T2 sample, which felt the taste and aroma of basil.

The predominant taste of apple in infusion, which is sweet and slightly aromatic, can be enriched by high additions of raspberry, basil powder or another fruit and/or plant powders

Developing strategy for developing a new product, must be take account the characteristics of the products preferred by consumers and their eating habits.

ACKNOWLEDGEMENTS

The authors acknowledge the financial support for this project provided by transnational funding bodies, being partners of the H2020 ERA-net project, CORE Organic Cofund, and the cofund from the European Commission. This work was supported by a grant of the Romanian Authority for Scientific Research and Innovation, CCCDI - UEFISCDI, project number 4/2018 ERANET-COREORGANIC SusOrgPlus, within PNCDI III.

REFERENCES

Asioli D., Aschemann-Witzel J., Caputo V., Vecchio R., Annunziata A., Næs T., & Varela P. (2017). Making sense of the “clean label” trends: A review of consumer food choice behavior and discussion of industry implications. *Food Research International*, 99(Part 1), 58–71, https://doi.org/10.1016/j.foodres.2017.07.022

Avetisyan, A., Markosian, A., Petrosyan, M., Sahakyan, N., Babayan,A., Aloyan, S., Trchounian, A. (2017) Chemical composition and some biological activities of the essential oils from basil Ocimum different cultivars. *BMC Complement Altern Med* 17:60 https://doi.org/10.1186/s12906-017-1587-5

Badulescu, L., Bujor-Neniță, O.C., Dobrin, A., Stan, A., Zugravu, M., Ion, V.A. (2019). Bioactive compounds and quality parameters in different organic apple varieties and their natural value added powders. *Fruit Growing Research*, XXXV, 116-122,. DOI 10.33045/fgr.v35.2019.17

Bujor, O-C, Le Bourvellec C., Volf, I., Popa, V.I., Dufour, C. (2016). Seasonal variations of the phenolic constituents in bilberry (*Vaccinium myrtillus* L.) leaves, stems and fruits and their antioxidant activity, *Food Chemistry*, 213, 58-68.

Consumer perception and liking, and sensory characteristics of blended teas (nih.gov)

Di Cairano, M., Galgano, F., Tolve, R., Caruso, M.C., Condelli, N. (2018). Focus on gluten free biscuits: Ingredients and issues, *Trends in Food Science & Technology*, 81, 203-212. https://doi.org/10.1016/j.tifs.2018.09.006

Dragomir, N., Nicolae, C. G., Dragomir V. (2017). Romanian traditional products between local and global. *Analele IBNA*, 31, 103-111.

Dragomir, N., and Nicolae, C. G. (2019). Produse inovative - o alternativă în valorificarea ingredientelor BIO. Workshop ”Ecologic pentru sănătatea noastră”, Bio Life & Style 2019, Expoziție pentru o viață verde. Bucharest, RO: Ex Terra Aurum & INVEL-Multimedia Publishing Houses, ISBN 978-606-764-051-9.

Dragomir, N., Nicolae, C. G., Bujor-Neniță, O. C. (2019). Produse inovative obținute din ingrediente pe bază de fructe și legume ecologice. *Catalogul Conferintelor prezentate de USAMV Bucuresti la INDAGRA*. Bucharest, RO: Ex Terra Aurum & INVEL-Multimedia Publishing Houses, ISBN 978-606-764-053-3.

Farruggia D., Crescimanno M., Galatia A., Tinervia S., (2016). The quality perception of fresh berries: an empirical survey in the German market, Florence “Sustainability of Well-Being International Forum”. Food for Sustainability and not just food, Florence SWIF 2015, *Agriculture and Agricultural Science Procedia* 8, 566-575

George S., Brat P., Alter P., Amiot J. M. (2005). Rapid determination of polyphenols and vitamin C in plant-derived products, *J. Agric. Food. Chem*., 53, 1370-1373.

Gogoi Romen Chandra (2014). Blending of tea – the development, Two and a Bud 61(1&2):53-56, https://www.researchgate.net/publication/276882845_Blending_of_tea_-_the_development [accessed Mar 21 2021].

ISO 3103:2019 Tea — Preparation of liquor for use in sensory tests

Li, A. N., Li, S., Zhang, Y. J., Xu, X. R., Chen, Y. M., Li, H. B. (2014). Resources and biological activities of natural polyphenols. *Nutrients*, 6(12), 6020–6047. doi:10.3390/nu6126020

Popa M.E., Geicu-Cristea M., Popa A., Drăghici M., Tănase E.E., Miteluț A., Iorga C.S., Guillaume C., Gontard N., Guillard V., Gogu F., Yanik D.K., (2017). Consumption and attitudes regarding berriesbased products – comparative analysis of Romania, France and Turkey. *Romanian Biotechnological Letters*, 22(3), 12568-12576.

Roopesh M. Syamaladevi, Sunil Kumar Insan, Sumeet Dhawan, Preston Andrews & Shyam S. Sablani (2012). Physicochemical Properties of Encapsulated Red Raspberry (*Rubus idaeus*) Powder: Influence of High-Pressure Homogenization, *Drying Technology*, 30:5, 484-493, DOI: 10.1080/07373937.2011.647369

Spence, C. (2021). Multisensory Perception. In Stevens' Handbook of Experimental Psychology and Cognitive Neuroscience, J.T. Wixted (Ed.). https://doi.org/10.1002/9781119170174.epcn214

Stan, A., Bujor, O.C., Dobrin, A., Haida, G., Bădulescu, L., Asănică, A. (2019). Monitoring the quality parameters for organic raspberries in order to determine the optimal storage method by packaging. *ISHS Acta Horticulturae 1277: XII International Rubus and Ribes Symposium: Innovative Rubus and Ribes Production for High Quality Berries in Changing Environments,* Acta Horticulturae, 461-468 DOI: 10.17660/ActaHortic.2020.1277.66

Stan, A., Frîncu, M., Vintilă, M., Bădulescu, L. (2020). Minimal processing of organic apples by drying - consumer acceptance. *Fruit Growing Research,* XXXVI, 99-105. DOI 10.33045/fgr.v36.2020.12

Sulistyawati I., Dekker M., Verkerk R., Steenbekkers B. (2020). Consumer preference for dried mango attributes: A conjoint study among Dutch, Chinese, and Indonesian consumers. Journal of Food Science, 85(10), 3527- 3535, doi: 10.1111/1750-3841.15439.

William, L., P. Z., Danyang, Y., Zhongxiang, F. (2019). Hempseed in food industry: Nutritional value, health benefits, and industrial applications, *Comprehensive Reviews In Food Science And Food Safety*, 19:282–308. https://doi.org/10.1111/1541-4337.12517

Woods AT, Spence C. (2016). Using Single Colors and Color Pairs to Communicate Basic Tastes. *i-Perception.* July 2016. doi:10.1177/2041669516658817

Asioli, D., Aschemann-Witzel, J., Caputo, V., Vecchio, R., Annunziata, A., Næs, T., Varela, P. (2017) Making sense of the ‘‘clean label’’ trends: a review of consumer food choice behavior and discussion of industry implications *Food Research International*, 99, 58-71. https://doi.org/10.1016/j.foodres.2017.07.022

www.softfedima.ro