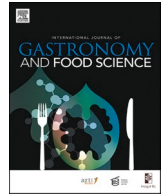


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Gastronomic cultural EVOOluTion of the virgin olive oil consumption model at the restaurant

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ABSTRACT

Gastronomic experience can be a factor of motivation to improve the quality of extra virgin olive oil served at the restaurant. The "new" consumer is a very complex and demanding figure, who seeks in the consumption of food products not only a means to satisfy food needs, but experiences, emotions, feelings, service, nature, culture, etc. The quality requirements do not only concern the chemical-physical and organoleptic components of the product, but also the hedonistic ones, ie those related to the health aspects, the quality of the territory of origin, the typicality, the respect of the environment by the production processes used, respect for animal welfare, the ethical content of the product, etc. He is demanding in terms of information on the features of the product and requires greater guarantees on its characteristics and/or on the production processes used. All this seems to highlight the presence of potential unsatisfied needs around which it is possible to build paths of development of the offer able to satisfy them, especially at the restaurant, where cultural, emotional and multi-sensory satisfaction of food can be easily "discovered". This is the right time to change the marketing of extra virgin olive oil at the restaurant, because extra virgin olive oil is an element that embodies the different aspects of the expected and perceptible quality of a food: taste, sensory, knowledge, sacredness, syncretism, health, history, naturalness and authenticity. Tasting a high quality oil, discovering the complexity of the aromas released by the contact with the warm dishes and the gustatory and kinesthetic perceptions that harmoniously interact by balancing the sensory profile of the other ingredients, is comparable to the emotion of a blind man when recovers his sight. From that moment, as the blind man will not be able to tolerate returning to the oblivion of darkness, the guests that tasted a high quality extra virgin olive oil can not tolerate returning to the banality of a fat that anoints without seasoning.

Evolving means transforming gradually, progressively in order to reach a higher level. In this sense the catering sector, in the last decades, stands evolving and growing: with 41 billion of added value euros, is the sector driving the Italian and European food supply chain, overall more relevant of Agriculture and Food Industry ([EU agriculture](https://ec.europa.eu/agriculture/)).

Eating out is one of the most popular leisure activities among Europeans, resulting in a booming restaurant and food service industry. Food services, also known as catering services, refer to all services for out-of-home consumption of food and drink, including restaurants, cafés, bars, takeaway, food delivery, contract catering, cafeterias and other food vendors. The consumer foodservice market in Western Europe was valued at 427 billion euros in 2016 and the Eastern European market at 45.6 billion euros. Two of the biggest markets in the food

and beverage service industry are in the United Kingdom and France, where in 2015 enterprises generated revenues of 87.8 billion euros and 63.2 billion euros respectively. In terms of presence, Italy and Spain also compete, ranking highest for number of food service enterprises in the EU in 2014. ([http](http://)).

People visit the restaurant not only to eat, but they are looking for other experiences to engage all the senses not only the taste ([Cao et al., 2018](#)). Today we live a dimension that goes beyond simple satisfaction of the senses, to reach to the need to enjoy immaterial contents of the product, those that through the narration of the historical components, territorial, cultural and landscape satisfy the desire for "authenticity" ([Chatzopoulou, 2018](#)) can compensate for the sense of alienation that in modern industrial civilization makes feel people far from their roots a

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feel of nostalgia: people searches in every element of consumption an identity (Li et al., 2019).

An ultimate goal for science and technology should be the betterment of humanity and the welfare of human beings. This occurs on different fronts, from food and nutrition to aiding man in performing his mental tasks. Less tangible but no less important are other frontiers addressing the intellectual and emotional needs of man.

Achrol and Kotler in a paper of 2012 (Achrol and Kotler, 2012) underlined that the field of marketing is facing a paradigm shift, truly a transformation like nothing ahead of, based on experiential and sensory marketing and on the ideas that consumers need to link their experiences to human senses, multi-sensory communication and perceptions, factors intimately associated to each other.

The new needs linked to the changed styles of life can be declined in the different requirements of the quality of a food: health, naturalness, history, syncretism, sensoriality. The common denominator of these declinations is knowledge, the need to know and be aware that it dwells in every contemporary consumer.

Among the foods that best of all could meet these five requirements quality, helping to improve marketing in the restaurant sector, without doubt there is extra-virgin olive oil (EVOO), the food element relegated to an indistinct dimension, the so called "included in the price".

Oil is a seasoning element. Seasoning is a noble action, means making pleasant, to enrich with perfumes and flavors a flat, and can only be done with an oil fresh and high quality (Roselli et al., 2018; Restuccia et al., 2018; De Luca et al., 2016). All other oils of vegetable origin (mainly from seeds) are colorless, odorless and tasteless because they are extracted with organic solvents and are not edible before being subjected to a process of de-acidification, bleaching and deodorization. Therefore, the other vegetable oils cannot season in the hedonistic sense of the action. The extra-virgin of olive is the only oil naturally rich in antioxidants and that is good for health, natural because extracted only by mechanical means, rich of thousands of years of history, capable of to merge sacred and profane elements into oneself and to evoke, with plant sensations that releases, memories, memories, emotions, taste expectations.

Is extra virgin olive oil free at the restaurant?

Today in the restaurant, the extra virgin olive oil is free. It is clear that the gratuitousness of a food is paradox in an environment where either the water is not free. This is the main limit to the imposition of a strong and deeply rooted product culture widespread among consumers (Giordano et al., 2018). The gratuitousness sets the restaurateur in a position to guarantee himself the profit that it considers fair, choosing low-cost products, and the consumer in the condition to tolerate this, mindful of the famous proverb: "Don't look a gift horse in the mouth". Shortly: when receiving a gift be grateful for what it is; don't imply you wished for more by assessing its value. The consumer is convinced that all that is received as a gift is something of earned and, consequently, it is not necessary to be too picky about the quality of the gift. The question that every consumer should make himself is the following: "Is the oil at the restaurant really free?"

Citing Michael Pollan "Cheap food is an illusion. There is no such thing as cheap food. The real cost of the food is paid somewhere. And if it isn't paid at the cash register, it's charged to the environment or to the public purse in the form of subsidies. And it's charged to your health". Consumers should remind that low quality oils are poor of beneficial substances and are richer in molecules oxidized, pro-oxidants and to promote in human body the formation of free radicals that can damage and compromise the functionality of cell membranes cells, enzymes and DNA, promoting the phenomena of aging and increasing the risk of diseases (Bowen et al., 2019; Sroka and Cisowski, 2003).

Should the intransigence that the customer shows towards the service of unsealed water bottle be even greater with respect to a low quality oil considering the dangerous influence in the long term on

health? Let us just add as an aside that extra virgin olive oil has a unique characteristic: the molecules responsible of health properties are identifiable by the sensory evaluation (polyphenols are responsible of bitter and pungent sensations), giving to the consumer a sensory tool useful to judge the quality and to establish the product value.

Don't just spend less. Spend smarter!

The idea that the use of cheap olive oils can be beneficial to increase profits (Roselli et al., 2017; Salvo et al., 2017) is shipwrecked considering that bad oils often own bad olfactory defects, which come perceived by the customer before to taste. Since the sense of smell is the sense of memory, and the smells we perceive they are always full of emotion, a bad smell can provoke moods associated with the experience of disgust or of the danger linked to the ingestion of the food. The best presentation will not suffice to compensate for the olfactory disappointment. The same evocative power of the perfumes can be exploited to strengthen the desire to taste and enjoy of the dish. Adding a good extra virgin olive oil, of course when the plate has come to the table, means giving, to those waiting to eat, an extraordinary journey of imagination: a succession of fragrant notes are released by contact with warm ingredients, merging and harmonizing with the other elements, heralds the consumer gratification that will derive from subsequent tasting. Add the oil in the kitchen (as normally occurs) means to defraud the guests of the most ephemeral and ineffable portion of the condiment, which escaping into the atmosphere it cannot be appreciated as an element capable of creating a new rituals.

Myths and rituals

The ritual is a custom, a ceremony that celebrates important moments and which have value. EVOO for more than five thousand years it was an integral part of religious rites. From pagan civilizations to today's Catholicism, EVOO has been considered element of union of the human with the divine: it was used to anoint statues, prepare ointments and to glorify the heroes. Today EVOO has lost the sacredness, and its image has been destroyed by greased cruets and bottles frequently topped up despite the laws in force. These consolidate practices of use (or abuse) diminish its value in the eyes of those who consume it, by transferring also in the domestic environment the same vilification. The new altar for the sacred seasoning should be just the restaurant, place of gastronomic discovery where chefs and room managers, priests of the gastronomic religion, can aspire to the maximum role of celebrant of taste, ambassadors of the product.

Why does people attend so much ostentatious solemnity towards wine and as much indifference to the oil?

Oil and wine: elective affinities

Goethe in the novel "Elective affinities" described the difference between oil and wine: «Some meet like friends who immediately unite and they tune without mutating themselves, just as water is mixed and wine. Others instead remain strangers, and do not join not even if mixed; as well as oil and water which, agitated together, return immediately to separate". Insurmountable differences exist between oil and wine, however, in the past centuries (Clodoveo et al., 2016), the oil was favored, in terms of value, the wine. An ancient Italian proverb said: "Merchant of wine, poor merchant, merchant of oil, merchant of gold". In the last century numerous positive conditions but also adverse events, such as methanol scandal, have forced the consumer to pay attention to the choice of wine, with a progressive growth of the global quality level of the product and a better spread of its culture.

Although it is true that every parallelism between the world of wine and that of extra virgin olive oil should be carefully avoided due to the different history and the diversity in the ways of use of the two products at the restaurant, comparison plans can be identified to

generate marketing opportunities for valorization of the oil that can ensure economic and social sustainability for the different players in the supply chain.

Can two worlds apparently in antithesis converge?

The many opposing aspects between the two products, oil and wine, would not leave boundaries of confluence in the models of consumption, yet there is a sector in which the extra-virgin should "imitate" the alcoholic beverage: the world of restaurants. The bottle of oil, like wine, must be open at the table, celebrating the elements badges of the product you are serving, which will be possible to appreciate thanks to the fact that, in the sealed bottle, the aromas and flavors (Boskou et al., 2015) wisely molded from the skillful miller they are preserved to offer, intact, the meeting with the senses. The best and unrepeatable moment, from the point of view of gratification hedonistic, corresponds to those short seconds in which the first drops of oil fall on the plate and the volatile molecules at low molecular weight are released by investing the consumer face penetrating into the nostrils. That's the moment in which in the brain an avid expectation of taste the is created, and it can be satisfied only through the tasting.

If the waiter is able to narrate the product, a silent space for the customer attention will be created:

- keeping the time to listen to a story,
- looking at the dish and its design, shapes and colors,
- generating a premonition of the taste

in a growing of desire stimulated by the perception of aromas released by the instantaneous addition of the oil. The wait will be rewarded and finally satisfied through the tasting, the consumer will be granted with the taste and touch, in the mouth, emphasized by oily seasoning which is a vehicle and an amplifier of flavors.

The exclusivity of opening a bottle (or more) per table requires that the oil bottles have to be small, no more than 100 mL, with the advantage that a small price for the single bottle means an interesting value per liter for the producer (if the bottle with a volume of 100 ml oil is sold for 3 euros, would mean reaching a value of about 30 euros per liter – about four times the medium value of an Italian product). Moreover, a small one bottle can be brought home too, allowing marketing action to continue also in the home, influencing subsequent purchases.

A closed bottle will assure:

- **TRANSPARENCY** The closed bottle keeps the promise of the product description shown on the card or illustrated by the person in charge of the oil: the customer does not feel cheated and justifies the price
- **SAFETY** The customer is certain of the relationship between the content of the bottle and the declarations on the label
- **CLEANLINESS** The sealed bottle not touched by dozens of unknown diners guarantee high hygienic standards
- **IMAGE** The sealed bottle makes the product unique, distinct and recognizable.

The importance of motivation

Innovation in commercial processes requires the need to satisfy explicit or unexpressed needs. To modify the service mode and introduce innovations in the oil marketing model extra virgin olive oil at the restaurant it is necessary to start from the need to transform the seasoning from cost to profit.

It is necessary to find the right levers to convince the consumer of the opportunity of change, pushing it to the outside of the "comfort zone" of the "product included in the price" and identifying the right reasons to improve the willingness to pay. New needs inevitably generate new services, and represent the stimulating factor that produces changes.

Motivations can range from the most basic need for hygiene, guaranteed only by the closed bottle, which has not already been handled by others and that in its entirety it can ensure correspondence between content and label, at more advanced need to protect molecules antioxidants with healthy action (Clodoveo et al., 2014a), and to the need for gratification that can result with different organoleptic properties result of the varied biodiversity olive growing and the different technologies of production (Clodoveo et al., 2014b, 2014c), fully appreciable only if the bottle is just opened.

No one among customers at the restaurant would drink with pleasure if a bottle of was served wine opened for days, maybe moved by one table at the other at the mercy of the different patrons. With even more disappointment, any customer would refuse to drink water that is spilled by a partially emptied bottle. If the oil is package for long time in an opened bottle it loses volatile molecules losing the complexity of the olfactory profile and, due to the faster oxidative processes, it softens in taste and can manifest defects, even absorbing odors from the environment surrounding.

Alongside these needs that concern the material sphere of the product, new immaterial needs can motivate food choices and changes in methods of purchase and consumption of oil at restaurant; among these, surely the need to eat consciously, to know and learn information on everything is ingested. The need to know, in fact, when others needs are already attained, allows to be aware of each own decisions attributing value to what you choose. Awareness is the first of the three steps a customer must take to decide whether or not to pay for a service or a product. Acquire information on extra-virgin olive oil (only oil deriving from fruit and not from seed, extract only by mechanical and non-chemical means, therefore rich in multiple organoleptic properties and health, etc. (Clodoveo, 2013; Amirante et al., 2008) allows to objectively evaluate the relationship between costs and benefits deriving from the purchase and to decide, without hesitation, if is worth it. People who choose to eat outside the home, and in particular at the restaurant, are paying an experience an associated emotion to food, an experience to remember.

The oils' list: biodiversity and territories

The list of the oils, declaimed, desired, invoked, today it is still a chimera, if not in some rare restaurant where the expectation created from the rich descriptions shipwrecked on the oil cart composed of dozens of bottles open indefinitely and probably no longer faithful to the promise made by drawing up the offer.

However, the idea of the oil's list is challenging. Restaurant marketing has multiplied profits by editing the most varied types of lists for whet the curiosity of consumers most demanding: water, tea and herbal teas, vinegars, beers, coffee, bread, cheese. The list of foods that can be offered to the costumers sold by means a list is multiplying. The different ones lists all serve the same purpose: constitute a sales tool that offers the customer the opportunity to choose by comparing features and prices. As long as the EVOO is free it cannot be able to afford to have his list because the restaurateur is first and foremost an entrepreneur who decided to invest capital in the restaurant business, an activity which is characterized by the risk, and each additional service must have the right balance return on investment. In the case of wine the prices shown on the list have an average mark-up of two times and a half compared to the purchase price from the distributor. This is not surprising because reloading is linked to necessity to guarantee a wide choice of labels which translates into the need to invest to sort the cellar with the risk of do not sell the product (Ponte, 2009).

In light of the above, the list of the oils has to be considered the point of arrival and not of departure. It has to represent the destination of a journey that is born from awareness on the part of chef on the capacity that has quality oil to enhance a dish and the culture of product that the room staff has to possess to present it properly, to arrive at the creation of awareness, in the consumer, of value hedonistic and healthy of the

extra-virgin necessary to determine the willingness to pay. The oils' list ally cannot certainly be the bottle cart. If the list is intended to enhance the characteristics of the varieties, the producer, the extraction system and the relapses on the experience of tastes, fragrances and combinations that may arise, it is necessary build a model next to the paper conservation and service they take extra-virgin olive oil protected from light, heat, oxygen that oxidize and cause the rancidity of the oil. Bearing account of the short shelf life of the oil, the creation of an oil store in the restaurant is associates with an economic risk in the investment much higher than in the case of wine, especially if the variety is extended supply.

It will be appropriate to choose small containers (100 ml) to be stored in sheltered areas from thermal abuse, guaranteeing the chain of darkness and the absence of humidity and odors. Looking at how many efforts they have been made in recent years to try bring the average consumer closer to recognition of the qualities of extra virgin olive oil, one wonders if it is correct to use sensory analysis, intended as a method for evaluation organoleptic properties of virgin olive oils, as a tool to introduce the consumer to the universe of olive oils. If it is true that the consumer look for a rewarding experience, the approach with modern and quality oils, characterized by an intense bitter and pungent taste, becomes difficult and complex because that have little to do with the taste of the oils that were consumed commonly up to a few decades ago, the result of obsolete extraction techniques and reckless practices, but which are part of the collective imagination and represent the touchstone of the inner comparison. The oil should always be presented in pairing with bread, maybe hot for a light entrée while waiting for them main courses already ordered and in preparation.

No restaurant it's an island

The territory surrounding the restaurant is not a simple space contiguous to the place where the restaurant is located. It is a culture and a productive landscape in which numerous agri-food enterprises to express talent for foods and wine. Every good restaurant therefore it is an integral component of a community. If the restaurant is placed into a region characterized by olive growing vocation, it has to find allies with olive millers and olive growers in order to actively promote a vigorous product culture. Whit the alliance with the miller, the restaurateur earns the guarantee of consistency of high standards of product; Whit the alliance with the olive growers, the olive miller earns the guarantee of high quality of olive fruit. Whit the alliance with the olive growers, the restaurateur earns the guarantee of a beautiful landscape surrounding the restaurant because of the olive grower is a custodian of the territory, inseparable element of the product.

Aligning means guaranteeing fair profit to all the players in the supply chain. An olive grower who carries out a non-remunerative activity loses interest in the care of the olive grove. The abandonment of the olive grove corresponds to the destruction of the beauty of the landscape, which is part of the immaterial value of the product served at the table. If there is no interest for an olive growing model that is not able to guarantee the right income, there will be no opportunities for the tourism and the receptive activities involved.

Conclusion

The marketing of the EVOO at the restaurant has to be interpreted as the set of initiatives and actions aimed to persuade the customer to pay the product (EVOO) with satisfaction (the pleasure derived from the experience compensates the cost of item).

So it is necessary a new professional figure able to realize this innovation: the "EVOO restaurant taster" – the waiter assigned to EVOO service. The goal is not to have an expert taster. He must have basic sensory skills are: recognizing defects to exclude poor quality oils, recognizing the positive characteristics to describe the oil he is serving. He must have knowledge of the best way to serve oil at the table and lead

customers into a sensory experience that allows them to perceive value and pay a price. Moreover, he must have an essential knowledge of cultivars and territories.

The main skills can be divided into three basic areas:

- The EVOO restaurant taster knows the sensory, nutritional and healthy characteristics of extra virgin olive oil and the interactions with the other ingredients of the dish
- The EVOO restaurant taster is able to serve extra virgin olive oil creating a ritual and guiding the guest in a sensory path of hearing, sight, smell, taste in an active and conscious, emotional and able to generate the desire of reiteration
- The EVOO restaurant taster can convey in a simple and effective, never invasive way, the necessary and sufficient information for a story-telling aimed at giving the customer the right level of knowledge of the intrinsic and extrinsic characteristics of the product useful and indispensable to increase perceived pleasure.

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Declaration of competing interest

No conflict of interest exists.

Appendix A. Supplementary data

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References

- Achrol, R.S., Kotler, P., 2012. Frontiers of the marketing paradigm in the third millennium. *J. Acad. Market. Sci.* 40 (1), 35–52.
- Amirante, P., Clodoveo, M.L., Tamborrino, A., Leone, A., 2008, September. A new designer malaxer to improve thermal exchange enhancing virgin olive oil quality. In: VI International Symposium on Olive Growing, vol. 949, pp. 455–462.
- Boskou, D., Camposo, S., Clodoveo, M.L., 2015. Table olives as sources of bioactive compounds. In: *Olive and Olive Oil Bioactive Constituents*, pp. 217–259.
- Bowen, K.J., Kris-Etherton, P.M., West, S.G., Fleming, J.A., Connelly, P.W., Lamarche, B., Couture, P., Jenkins, D.J., Taylor, C.G., Zahradka, P., Hammad, S.S., 2019. Diets enriched with conventional or high-oleic acid canola oils lower atherogenic lipids and lipoproteins compared to a diet with a western fatty acid profile in adults with central adiposity. *J. Nutr.* 149 (3), 471–478.
- Cao, Y., Li, X.R., DiPietro, R., So, K.K.F., 2018. The creation of memorable dining experiences: formative index construction. *Int. J. Hospit. Manag.* <https://doi.org/10.1016/j.ijhm.2018.10.010>.
- Chatzopoulou, E., 2018. A Grounded Theory of Authenticity and Quality Constructions for Ethnic Restaurants: Implications for Effective Marketing Strategies. Doctoral dissertation. Newcastle University.
- Clodoveo, M.L., 2013. New advances in the development of innovative virgin olive oil extraction plants: looking back to see the future. *Food Res. Int.* 54 (1), 726–729.
- Clodoveo, M.L., Dipalmo, T., Schiano, C., La Notte, D., Pati, S., 2014a. What's now, what's new and what's next in virgin olive oil elaboration systems? A perspective on current knowledge and future trends. *J. Agric. Eng.* 45 (2), 49–59.
- Clodoveo, M.L., Hbaieb, R.H., Kotti, F., Mugnozza, G.S., Gargouri, M., 2014b. Mechanical strategies to increase nutritional and sensory quality of virgin olive oil by modulating the endogenous enzyme activities. *Compr. Rev. Food Sci. Food Saf.* 13 (2), 135–154.
- Clodoveo, M.L., Camposo, S., De Gennaro, B., Pascuzzi, S., Roselli, L., 2014c. In the ancient world, virgin olive oil was called "liquid gold" by Homer and "the great healer" by Hippocrates. Why has this mythic image been forgotten? *Food Res. Int.* 62, 1062–1068.
- Clodoveo, M.L., Dipalmo, T., Crupi, P., Durante, V., Pesce, V., Maiellaro, I., et al., 2016. Comparison between different flavored olive oil production techniques: healthy value and process efficiency. *Plant Foods Hum. Nutr.* 71 (1), 81–87.
- De Luca, M., Restuccia, D., Clodoveo, M.L., Puoci, F., Ragno, G., 2016. Chemometric analysis for discrimination of extra virgin olive oils from whole and stoned olive pastes. *Food Chem.* 202, 432–437.

- Facts and figures on EU agriculture and the CAP (common agricultural policy). https://ec.europa.eu/agriculture/statistics/facts-and-figures_en.
- Giordano, S., Clodoveo, M.L., De Gennaro, B., Corbo, F., 2018. Factors determining neophobia and neophilia with regard to new technologies applied to the food sector: a systematic review. *Int. J. Gastronomy Food Sci.* 11, 1–19. <https://www.statista.com/topics/3966/restaurants-and-food-services-in-europe/>.
- Li, Y., Lu, C., Bogicevic, V., Bujisic, M., 2019. The effect of nostalgia on hotel brand attachment. *Int. J. Contemp. Hospit. Manag.* 31 (2), 691–717.
- Ponte, S., 2009. Governing through quality: conventions and supply relations in the value chain for South African wine. *Sociol. Rural.* 49 (3), 236–257.
- Restuccia, D., Clodoveo, M.L., Corbo, F., Loizzo, M.R., 2018. De-stoning technology for improving olive oil nutritional and sensory features: the right idea at the wrong time. *Food Res. Int.* 106, 636–646.
- Roselli, L., Clodoveo, M.L., Corbo, F., De Gennaro, B., 2017. Are health claims a useful tool to segment the category of extra-virgin olive oil? Threats and opportunities for the Italian olive oil supply chain. *Trends Food Sci. Technol.* 68, 176–181.
- Roselli, L., Cicia, G., Cavallo, C., Del Giudice, T., Carlucci, D., Clodoveo, M.L., De Gennaro, B.C., 2018. Consumers' willingness to buy innovative traditional food products: the case of extra-virgin olive oil extracted by ultrasound. *Food Res. Int.* 108, 482–490.
- Salvo, A., La Torre, G.L., Rotondo, A., Mangano, V., Casale, K.E., Pellizzeri, V., et al., 2017. Determination of squalene in organic extra virgin olive oils (EVOOs) by UPLC/PDA using a single-step SPE sample preparation. *Food Anal. Method.* 10 (5), 1377–1385.
- Sroka, Z., Cisowski, W., 2003. Hydrogen peroxide scavenging, antioxidant and anti-radical activity of some phenolic acids. *Food Chem. Toxicol.* 41 (6), 753–758.