

DEFINING OF THE GEOGRAPHIC DETERMINANTS CONNECTED WITH THE FUTOG CABBAGE IN SERBIA

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Historical overview

- Cabbage is cultivated in Futog from the times of 18th century, from the ages of crowning of the empress Maria Theresia.
- From the year of 1760 there exist the written documents describing the export of cabbage to Vienna.



Historical overview

- During the decades of cultivation of cabbage in Futog, a population was created that was different according their quality properties from the others.
- Producers have begun in each harvest year to keep only the specified plants for seeds.



Historical overview

- *The long-durating selection was responsible for the creation of the population called “Futoški kupus” (the Futog cabbage), which was important for the fresh consumption, and for souring, as well.*
- To the creation of this population, of course, contributed the convenient ***agroecological conditions and geographic location of district of Futog.***
- Geographic region where the fresh Futog cabbage, as well as the sour Futog cabbage are produced is the cadastral community of Futog.



The geographic region

- **Futog** is the settlement located of the most fertile part of Panonian lowland, on the left coast of Danube, in Serbia. It is located in the middle of the course of the river of Danube, at it's 1270 km. It is located about 10 km upstream, on the west side of Novi Sad, capital city of the autonomous province of Vojvodina.



Geographic region

- Owing to the influence of the specific geographic climate and to the traditional approaches which are applied during growing and souring, specific sensorial properties are obtained, which make the Futog cabbage, either fresh or sour, different with respect to the other related samples.



Why to protect the cabbage?

- Owing to it's specific properties, ***the Futog cabbage*** is the requested food article on the inland- as well as on the international markets.



Why to protect the cabbage?

- Keeping in mind that the Futog Cabbage is appreciated in Serbia, as well as on the market of EU, as a high-valuable product, during the last 20 or so years, exists very serious problem of plagiarizing of the Futog cabbage:
- Cabbage which is not grown in Futog is declared as the Futog cabbage.
- Hybrid cabbages are declared as the Futog cabbage.



- The protection of labelling of the geographic origin has, first of all, the purpose to protect the quality and characteristics of the product which are formed due to the specific geographic climate, i.e. that represent the result of the specific natural and human factors, modes of production, pretreatment and processing of products that are applied in stringently defined geographic region.



Procedure of protection

- Initiative for protection of the Futog cabbage exists already two decades
- Unfortunately, in spite to the numerous attempts, for many years it simply was not possible to find out the mode of protection of the Futog cabbage.
- Owing to the establishment of producers and processors of Futog cabbage, named as “Futoški kupus”, prerequisites are generated for the more efficient approach to the procedure of protection!!!!



Protection procedure

- In February 2007, the representatives of the association named “Futoški kupus” visited the Institute for food technologies of Novi Sad, expressing their wishes to have our help for elaboration of the application concerned with the protection of products named the Futog fresh- and the Futog sour cabbage.





- From February 2007 till December 2007, experts from the Institute for food technologies of Novi Sad, together with manufacturers of the fresh- and the sour cabbage, intensively worked on elaboration of the document with the vision of:
- ***The cabbage of Futoč protected with labeling of the geographic origin on the World market, as one of the Serbian brands.***





Activities:

- Control of the process of sowing of cabbage
- Control of the process of the transplantation
- Vegetation period
- Cabbage harvesting
- Control of the bio-fermentation process
- Defining of the quality characteristics of fresh and sour Futog cabbage.



Sowing

Temperature



Soil



Water



Transplantation



technology of production of nursery plants

Vegetation phase



Agrotechnics

Harvesting





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Quality characteristics of the FRESH FUTOG CABBAGE

- Leaf rose has deep green color, with in average 10 leaves per rose.
- The rose has half-vertical form, with flat, slightly jagging leaf perifery.
- Leaves are thin, easily fleksible, elastic. Nervature of leaves is not strongly accebted.
- Diameter of rosette is in average 90.2 cm
- Inside of head of cabbage a stalk with average length 9.4 cm is located



Quality characteristics of the FRESH FUTOG CABBAGE

- With respect to the head height, the length of inner stalks amounts in average to 55.2%. The average height of the head is about 18.9 cm, and its average diameter is about 22.6 cm.
- The Futog cabbage is primarily designed for sour cabbage making, for which its sugar content. Sugar content near the top of the head is about 3.1%; in the middle of the head is about 3.3%, and near the root it amounts to about 3.4%



Fermentation



Packing of *the Futog sour cabbage*



Quality characteristics of the product *FUTOG SOUR CABBAGE*

- After completion of analyses and monitoring of manufacturing of the *Sour Futog cabbage*, the following quality parameters were defined:



Quality characteristics of the product *FUTOG SOUR CABBAGE*

- *Futog sour cabbage* must be produced using the native population of the *FUTOG CABBAGE*.



- **Sensory characteristics of the *Futog sour cabbage***
- After the fermentation, head of the Futog sour cabbage has uniform, amber-yellow color, which is considered as very convenient property with respect of consumers
- Head of the Futog sour cabbage has slightly oblate form.
- Leaves of the Futog sour cabbage are overlapping in such a way that the next leaf from the opposite side is situated over the preceding one, so that the separation of leaves has to be performed gradually and with attention, in order to avoid their damaging.
- Leaves of the *Futog sour cabbage* have slightly ellipsoid form.
- Leaves of the *Futog sour cabbage* are in all their surface thin; central part of the leaf with which is the leaf connected with stalk is not thick; it is elastic and flexible.



Quality characteristics of the product *FUTOG SOUR CABBAGE*

- NaCl content has to be not below 1.5% and not over 3.5%.
- Total acids content (expressed as lactic acid) ought not to be lower than 0.5% and higher than 2%
- Volatile acids content (expressed as acetic acid) shall not be higher than 0.7%
- As the preservative, only K-sorbate can be used, an it's analytically determined content must not be higher tna 0.13%



Key moments

- Founding of the Association of producers and processors
- Defining of the quality characteristics for the Fresh Futog cabbage



Support

- Provincial Department for economy (financed elaboration of the project)
- Ministry of agriculture, water resources and forestry (financed support of the Association “Futog cabbage”, supplying of computers and country vehicle aimed for the field works, financing of the marketing activities)
- Institute for the intellectual property



The key support

- *Consciousness of all participants, from the grower up to the highest institutions of the State, that we wish to protect the Futoğ cabbage.*



For the future

- Strong support to the marketing campaigne
- in order to enable the producers to realise benefits, and so to be additionally sitimulated to produce fresh- and to process sour Furog cabbage

Thank You for Your attention!

