

CONTENT

1. Ardelean Alina Grigorita - RESEARCH REGARDING THE TECHNOLOGIES OF CONDITIONING AND TEMPORARY STORAGE OF CHERRIES AND SOUR CHERRIES.....	5
2. Bacter Calin Florin, Climpe Elena Manuela - QUALITY MANAGEMENT IN PRE-UNIVERSITARY EDUCATION.....	13
3. Baldea Corina, Popovici Raluca - THE MEDIA OF ENRICHING USED FOR THE ISOLATION OF AEROBE ENTERIC PATHOGENS FROM THE SALMONELLA, YERSINIA, VIBRIO GROUPS.....	19
4. Criste Florin Leontin, Socol Claudia Terezia, Maerescu Cristina, Lup Florin, Sonea Cristinel Gigi - SURVEY OF BOVINE LIVESTOCK RESOURCES IN SALAJ COUNTY.....	25
5. Dulău Dorel, Daina Lucia, Balaşco Ioana Anca, Dulău Biana-Ana, Reştea (Iosub) Monica Elena - WAYS OF EVALUATING THE MEDICAL SYSTEM, OVER TIME, THROUGH PERFORMANCE INDICATORS, GENERALLY ACCEPTED AT THE NATIONAL LEVEL.....	31
6. Gavra Codrin - PHYTOCOENOLOGICAL RESEARCH CONCERNING THE GRASSLANDS FROM THE LOWER BASIN OF CRIŞUL NEGRU RIVER.....	35
7. Hîlma Elena - CONCENTRATION IN ESSENTIAL FATTY ACIDS OF FISH OIL COMPARED TO SANE ENRICHED ESSENTIAL FATTY ACIDS.....	43
8. Morna Anamaria Aurelia - CONSUMER ATTITUDE AND PERCEPTION OF ECOLOGICAL FOOD CONSUMPTION.....	49
9. Popovici Raluca, Baldea Corina, Bei Mariana - SELECTIVE MEDIA FOR THE ISOLATION OF THE STOOL YEASTS.....	57
10. Purge Ramona - THE INCIDENCE OF TRICHINELLOSIS IN HORSE MEAT AMONG BIHOR COUNTY.....	65
11. Roşan Cristina Adriana - THE PRODUCTION AND CONSUMPTION OF FOOD DURING THE COVID-19 PANDEMIC.....	69

RESEARCH REGARDING THE TECHNOLOGIES OF CONDITIONING AND TEMPORARY STORAGE OF CHERRIES AND SOUR CHERRIES

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Abstract

Cherries and sour cherries are kernel species that show different resistance during the storage period due to the structural-textural differences of the pulp and the fragility of the epidermis. These differences make it possible for sour cherries to be stored for shorter periods of time compared to cherries, and the recorded quantitative losses are also different.

Key words: sour cherries, cherries, soluble dry matter, total acidity, vitamin C, temporary storage, quantitative losses.

INTRODUCTION

Cherries and sour cherries belong to the category of highly perishable horticultural species with a relatively short shelf life of 3-5 days. This shelf life may be extended if temporary storage is carried out under special conditions.

This sensitivity to external environmental factors (humidity, temperature, air circulation) is due to the peculiarities of structure, chemical composition, intense respiration, ability to mature after harvest, etc.

Cherries have a thin epidermis and low structo-textural firmness, yet there are also varieties with better firmness and lower juiciness.

Harvesting cherries and sour cherries for fresh consumption is done at maturity for consumption only in dry weather. When it comes to cherries, harvesting 2-3 days earlier can provide additional resistance. Harvesting is done in baskets, small capacity buckets, after which the fruits are being dumped in crates of 5-10 kg capacity, which can be lined with parchment paper or polyethylene foil.

Sour cherries are more perishable than cherries, with higher losses if the recovery technology is not followed exactly. Harvesting is similar to that

of cherries, with the difference that it can be done in two stages due to the staggered ripening of the fruit.

Once harvested, a pre-sorting of the fruits by categories of quality is performed, with fruits of extra and first quality being elected for storage.

For the extra quality, the fruits must have the shape, size and coloration specific to the variety, without any defects, with slight deformations and some variations regarding the coloration typical of the variety are allowed for first quality. The minimum diameter for extra quality is at least 21 mm, and for first quality at least 18 mm.

The fruit is transported as quickly as possible, using means of transport covered with tarpaulins for shorter distances or with machines equipped with cooling installations, especially for those transported over longer distances.

Means of temporary storage are required due to an exceeding quantity of fruits in the harvesting season. In this sense, it is recommended to store cherries and sour cherries in warehouses where environmental factors can be controlled: temperatures of 1-20°C, 90-95% relative air humidity and a moderate air circulation, which should maintain the homogeneity of these factors without causing the peduncle to dehydrate. At temperatures below 0-10°C the cherries lose their characteristic taste. Under these conditions, the shelf life of cherries is 14-21 days, yet varieties with a firm pulp have a longer shelf life. At a temperature of 2-50°C the shelf life is reduced by 5-7 days, with losses exceeding 10-15%.

Under the same conditions, sour cherries can be stored for a maximum of 5 days, but, depending on the variety, the storage time can be extended up to a week. If the fruits are harvested in rainy weather or if the temperature exceeds 20°C and the humidity a level of over 90%, quality impairments will be recorded, Radu, I.F., Gherghi A., 1967 Marca, Gh., 1987, Beceanu, D., 1994, 1998,1999, 2000, 2002, 2003, Ceașescu, I., Iordăchescu, C., 1987, Gherghi, A., et al., 1981, 1983, 1984,1989, 1994, Burzo, I., et. al., 1984, 1986., Marca, Gh., 2004, Potec, I., et. al., 1983, 1985, Stan Gh., 1999).

MATERIAL AND METHOD

Two varieties were studied: "Pietroase" cherries and "Crișana" sour cherries, intended for fresh consumption.

The behavior of the fruits during the transport, conditioning and temporary storage of the fruits was studied. Chemical analyzes were also carried out after harvesting the fruit on the soluble dry matter content, acidity and vitamin C.

Harvesting was done at consumption maturity. At the same time, a pre-sorting was performed, so that the fruits were sorted by quality. The extra and first quality fruits were intended for storage. The packaging was made in 5 kg crates, which were stored in cold stores at a temperature of 1-20°C and 90-95% relative humidity. The crates were placed in a single row. The health of the fruits was monitored daily.

The observations regarding the behavior of the fruits were made visually, during the harvesting, pre-sorting and transport, the fruits keeping their structo-textural integrity and firm structo-texture.

The soluble dry matter was determined refractometrically.

The pH was determined by the pH-meter.

The vitamin C content was determined by iodometric methods both for the fresh and frozen sample. Thus, out of the average sample, 15 g of analysed product are weighed by the analytical balance which is pestled with 2 g of quartz sand and 10 ml of metaphosphoric acid, until a homogenous paste is formed. The mix is passed through a calibrated flask of 50 ml and is brought to the sign with metaphosphoric acid. Then, the next step is the filtration of the mix, out of which 10 ml are used for further analyses. Furthermore, two titrations are performed.

The titration of the standard solution of ascorbic acid: 10 ml of ascorbic acid, 20 ml of distilled water, 2 drops of hydrochloric acid 1M, 15 drops of starch solution 1% are put into an Erlenmeyer glass. The mix is titrated with iodine solution until the change of colour to aubergine-blue (V).

The titration of the analysed sample: the working technique is the one presented previously with the specification that the standard solution of ascorbic acid is replaced with 10 ml sample to be filtered. The titration is performed with iodine until the change of colour to aubergine-blue (V₁).

$$\text{Vit. C mg/ 100 g product} = 10 \times V_1 \times 5 / V \times m \times 100$$

The aspect, colour and taste are analysed organoleptically for both the fresh and frozen samples.

RESULTS AND DISSCUSIONS

The results of the chemical analysis of cherries and sour cherries are presented in Table 1.

Table 1

Chemical composition of cherries and sour cherries (mean values)

Product	Soluble dry matter (%)	Acidity (%)	Vitamin C (mg/100 g)
Cherries	15	0,5	7,5
Sour cherries	12,8	1,5	10,2

The fruits have a high content of soluble dry matter in both kernel species. The content of vitamin C is higher in sour cherries (10.2 mg / 100 g fresh product), and the total acidity is also higher (1.5%).

The observations on the behavior of the fruits highlighted the fact that the fruits maintained their structo-textural integrity during harvesting, transport and conditioning, maintaing a firm structo-texture. Regarding the health status of the fruits, the data were centralized after 5 days from storage and at the end of the storage period.

Losses recorded during storage are presented in Table 2.

Table 2

Quantitative losses recorded during storage of cherries and sour cherries

Product	Losses recorded five days after storage (%)	Losses recorded at the end of the storage period (14 days for cherries, 7 days for sour cherries, %)
Cherries	3	11
Sour cherries	7	17

The first signs of alteration occurred after 2 days of storage for sour cherries, with moniliosis being detected, the fungus spores probably coming from the orchard. Affected fruits and those around them were removed. The same disease was noted in cherries from the third day of storage. During the storage period, infections with *Penicillium* spp. and *Rhizopus* sp. were detected, which caused fruit to rot. The depreciated fruits were permanently removed and weighed.

The analysis shows higher quantitative losses in sour cherries: 7% until the fifth day of storage and 17% at seven days of storage, when the decision to stop storage due to this high percentage of losses was taken. Fewer losses were recorded for cherries, which have a firmer structural-texture: 3% at five days of storage and 11% respectively, at the end of the storage period, after two weeks.

These differences in quantitative losses in the two kernel species are primarily due to the structural-textural differences in the pulp and the fragility of the epidermis, which provides different resistance to storage. In this sense, there is a good firmness of the pulp of the Pietroase cherry variety compared to the structure of the sour cherry pulp of the Crișana variety. Moreover, the epidermis of cherries is thicker than that of sour cherries, which gives them better protection against the influence of microorganisms found on the surface of the fruit.

CONCLUSIONS

When analyzing the studies that addressed the chemical composition and the behavior of the two kernel species, the following conclusions can be formulated:

1. Both species have a high content of soluble dry matter.
2. Sour cherries have a higher acidity and a higher content of vitamin C.
3. The chemical composition of the two species is a characteristic of the species and variety, being directly influenced by the pedoclimatic conditions and the cultural works applied to the orchards from the analysed year of production.
4. Regarding the behavior of the two species during storage, it was found that the health of the fruits was affected immediately after storage, respectively 2 days for sour cherries and 3 days for cherries.

5. After 5 days of storage, higher quantitative losses were recorded for sour cherries compared to cherries.

6. Significant quantitative losses of sour cherries led to the termination of storage on the seventh day for them and on the 14th day for cherries.

7. These differences in the quantitative losses recorded are primarily due to the structural-textural differences in the pulp and the fragility of the epidermis, which provides different resistance to storage. In this sense, there is a good firmness of the pulp of the Pietroase cherry variety compared to the structure of the sour cherry pulp of the Crișana variety. Moreover, the epidermis of cherries is thicker than that of sour cherries, which gives them better protection against the influence of microorganisms found on the surface of the fruit. The thin and fragile epidermis of sour cherries facilitates a more intense respiratory activity and is quickly affected by microorganisms.

8. Further research on the resistance of horticultural species to storage is recommended.

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QUALITY MANAGEMENT IN PRE-UNIVERSITARY EDUCATION

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Abstract

In substantiating and developing the science of quality, we consider it necessary to highlight some aspects regarding the origin of quality. In order to have and form a satisfactory image, regarding this subject, we must approach the quality, from the point of view of its origin. In this context, from the study of the specialized literature, we notice that most of the times, the quality was a major concern, especially due to the competition.

The philosophy of quality assurance, regardless of the field of reference, respectively development politics, are based on its status, as a promoter of development.

Key-words: Management, quality of pre-university education

INTRODUCTION

Any quality management system that is intended to be successful can provide many benefits to the organization it serves. A manager can put a lot of effort into analyzing a successful system, but it could still lead to very poor results. To do this, the manager must always review and examine the organization's system, to see if the benefits have appeared or not, in order to intervene, to apply program changes, but also to build new components.

MATERIAL AND METHOD

We consider it important to refer to organizational models that support the quality policy, with applicability for different fields of activity, all models of classical organizations promoting the principle of hierarchical relations from superior to subordinate, to different structures that are formed and function within the organization. , and supporting centralized decision-making.

An important aspect revealed by the managerial practice is given by the perspective in which the significant decisions for the organization are taken only at the top of the hierarchy, generating a decrease of creativity at other levels and structures of the organization.

RESULTS AND DISCUSSION

A concern focused on maximizing managerial success, an organizational phenomenon analyzed from formal perspectives, is formulated based on principles of scientific management that have guided managerial practice (*Principles of Scientific Management, 1911*):

- *promoting an authentic work science;*
- *progressive improvement of employees;*
- *scientific selection of employees;*
- *concomitant application of labor science and scientific personnel selection;*
- *promoting the cooperative relations of the managers with the members of the organization, beyond the status and the roles assigned or assumed within the organizational framework;*

Thus, the principles of scientific management have substantiated two ways of managing organizational structures by:

Functional management - the complex activity is decomposed into simple actions, they can be solved or unresolved, according to the level of expertise;

Exceptional management - the managerial decision is scientifically grounded, starting from the managers' reports, which retain the effects generated by the deviation from the organizationally agreed norms and principles; In this way, the decision will be accepted by decision makers and executors alike, with the aim of ensuring organizational performance and success.

The quality of a school can be analyzed from multiple perspectives and by referring to different elements:

- the **quality of the processes** that take place in the school unit. In order to align the processes in the school organization with quality standards, this concern must be registered at the level of information management, evaluation and classification tools, at the level of process organization and resource management;

- the **quality of educational services** and the degree of adequacy to the requirements of direct, indirect and community beneficiaries;

- the **quality of the organization**, with everything that defines it: organizational culture, managerial culture, culture of strategies, structure and resources.

Accepting the idea that these three components are essential for quality assurance in schools, we will emphasize the importance of managerial skills that management must prove.

We support this because a manager who pursues *innovative* organizational development will have a high success factor, compared to a manager who agrees with a *conservative* model. ***We thus identify a trend in the evolution of systems: the reconfiguration of managerial systems, so as to result in a quality-oriented strategy, in a formal framework of quality policies.***

Quality in education refers to a complex of factors, elements of reference on a theoretical, principled and practical level, given the performance and targeted results.

The analysis of the quality of education must be done by reference to:

- ***the values promoted in society and at the level of the school organization;***
- ***existing educational policies and strategies at national, regional and local levels;***
- ***the existing situation , defined by contextual factors, culture and traditions, etc .;***

- ***the evolution of the concept of "quality".***

Analyzing the functions that the school fulfills as an organization, we will be able to observe some of the trends and priorities in the field of quality management in education:

- ***the educational function - beyond the classical approach, in which the school is the main actor with a role in the education of children and young people, there is a growing concern for "lifelong learning" and "learning in all situations and in all areas of life "(" life wide learning ");***

- ***social function*** - contributes significantly to the promotion of interpersonal relationships, manifested at the level of individuals, group, society and community;
- ***economic function*** - aims at forming the economic and technical skills necessary for insertion on the labor market at national and international level;

- **cultural function** - the emphasis in the field of manifestation of this function falls on the cultivation and respect for cultural diversity, an essential condition for contemporary society;
- **political function** - refers both to the formation of social and civic competences and the feeling of belonging to the community, and to the formation of active citizenship.

The processes with which the quality in education is ensured are the following:

- planning and effective achievement of expected learning outcomes;
- monitoring the results;
- internal evaluation and/ or the process of self-evaluation of the results;

CONCLUSIONS

The profile of a quality school is achieved through concrete levers such as:

harmonization of quality policies with those implemented in other areas; promoting the culture of quality in pre-university education units; the ability of a school to produce quality results is associated with, of course, the quality of organizational culture. If the organizational culture is one connected to the requirements of society, of the beneficiaries, it is not an anachronistic one, the chances for the school organization to be the promoter of a culture of quality are significant; maintaining a correct perception of quality, of the quality management system, with emphasis on constructive aspects.

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THE MEDIA OF ENRICHING USED FOR THE ISOLATION OF AEROBE ENTERIC PATHOGENS FROM THE *SALMONELLA*, *YERSINIA*, *VIBRIO* GROUPS

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Abstract

All the serotypes of Salmonella enterica subsp. enterica are parasites for human being and mammals, while the other subspecies and Salmonella bongori are met preponderant in birds and animals with cold blood.

On usual media, liquid or solid, they form colonies of S or R type, also common to the other enterobacteriaceae. On agar-blood it usually doesn't determine hemolysis. On selective lactin media they form lactase-negative colonies, some with the black center due to the production of H₂S, and on the Wilson-Blair medium a high selective medium for salmonella, they form black colonies with black halo and metallic gloss. Yersinia is gram-negative bacilli or coccobacilli, pleomorphous, non sporulated, with tendency of bipolar coloration. The choleric vibrio is a gram negative bacillus very mobile, with characteristic aspect of comma, due to polar flagella. It grows on selective culture media, supplemented with biliary salts.

Key words: enteric, media, gram negative

INTRODUCTION

Based on the O somatic antigen there were described numerous serologic group noted with the large letters of the alphabet, from the human being are isolated strains belonging especially to the A-E groups. The H antigen, in phase 1 and 2, allows the individualization in the same group of serotypes, over 2000, who received initially the denomination of species. In the present it was accepted the keeping of these denominations, but written without italic letters and with capital letter, as would be Salmonella Typhi, Salmonella Typhimurium, Salmonella Enteritidis. All the serotypes are included in the present in the Kauffmann-White plan. The enteric Salmonellosis are food poisoning and they represent the common form, endemo-epidemic widely spread in all the countries of the world; they are caused most frequently by S. Enteritidis and S. Typhimurium. The symptoms appear 10-24 hours after the water consumption or of food contaminated with non-typhous Salmonella. The characteristic symptoms are: diarrhea, abdominal pain, vomit, fever, that disappear in 2-4 days.

The Yersinia type includes 11 species, among which only 3 are of medical interest: *Y. pestis*, *Y. pseudotuberculosis* and *Y. enterocolitica*. The other species are isolated from the soil, water, from wild mammals, birds and fish and can produce occasional opportunist infections in human being. The denomination of the type was given in honor of the French bacteriologist A. Yersin, who isolated for the first time, in 1894, the etiologic agent of plague, *Y. pestis*.

The main factors of virulence are: intracellular facultative habitat, the capsule with antiphagocytory role, the secretion of coagulase and fibrinolysis.

The type includes 36 species, among which only 12 species present variable pathogenicity for human being. These microbodies are usually isolated from the aquatic medium, sweet waters, salty, marine waters. The pandemics of cholera produced by *V. cholerae* have a special historical importance, cholera being today a disease present only in certain regions of the globe, under endemic form. Other species of *Vibrio* produce extraintestinal infections, from infections of the skin to very severe septicemias. It was isolated from fecal matters of the sick persons and healthy bearers. It was found that it survives for a long time in polluted waters and on contaminated objects.

MATERIAL AND METHODS

We accomplished a prospective study, based on the microbiologic diagnosis registered in the bacteriologic register of the laboratory of medical analysis, S.C. Diaser, Oradea.

The period for which was extended the study is of 5 years, in the period 01.01.2014-31.12.2019.

For the performing of the study we used also the archive, registered in the specific program of the computer from the laboratory of S.C. Diaser, Oradea, in the computerized data base of the unit, respectively.

Necessary materials for the performing of the examination:

- A recipient of collection (collection recipient with collecting spoon) with transport medium
- Wooden spatula
- Latex gloves

For the collection of fecal matter it has to be collected a sample of fecal matter of 5-10g introduced in the collection recipient of fecal matter with transport medium. If the stool is liquid, it will be collected 5 ml. It is recommended to be chosen a liquid, mucous and bloody portion, if there is one. Don't collect quantities larger than 10g because it will reduce the chances of isolating the pathogen bacteria.

Considerations of pre-collection:

- 8 days before the collection of the sample, don't take antibiotics or antiparasitary medicine.
- The diet is not necessary.

Collection and transport of the samples

In regard to the collection, it has to be done as close to the beginning of the disease and before the initiation of any antimicrobial treatment.

- Collection from the stool emitted spontaneously – is preferable and is indicated in all the forms of acute diarrhea when the emission of fecal matters is frequent.
- For bacterial and parasitary examinations, the collection is made with the “spoon” of the collection recipient, concerning the liquid parts and especially, the mucous and/or bloody one, if there are. The volume of the collection has to be of minimum 5 ml or 3-5 cm³, if the stool is formed.
- For isolations or virusologic exams is collected 5-10 cm³ fecal matters or minimum 5 ml, if the stool is not formed.
- Rectum collection – is recommended in:
 - Chronic shigellosis where the curettage of the rectal mucous with the probe or with the tampon offers greater chances to isolation;
 - The investigation of the bearers of Shigella and Salmonella, with the exception of those of S. Typhi.

For this type of collection are used Nelaton probes (nr.14-16) or adequate tampons, thus: with the tampon, soaked in isotone saline solution (not to use lubricant gels) is penetrated the anal sphincter by slow rotation, introducing intra rectum approximately 15 cm. It will be proceeded identically also with the Nelaton probe, to which is adapted a syringe (10 ml) with which are made 1-2 aspirations. After collection, the probes and tampons are introduced in sterile recipients that contain preservation medium, are labeled correspondingly and are sent to the laboratory.

The transport of the samples and their processing is made in maximum 1 h, if they were collected in recipients without transport medium (with transport at room temperature), or they can be kept up to 24 h at room temperature, if they were collected in recipients that contain Cary-Blair transport medium that assures a good durability of the bacterial intestinal pathogens. An exception to these rules is the samples collected in the suspicion of infection with Shigella spp, very sensitive bacteria that needs seeding from the media of culture immediately after collection.

For the viral etiology the samples that are not processed immediately have to be kept at – 70°C.

RESULTS AND DISCUSSIONS

From the suspension of fecal matters are performed directly dispersions on two selective media. The isolation with enriching consist of the procedure of enriching which was recommended and is used currently for a sum of enteric pathogens that are dispersed in a small number on the unit of volume of fecal matters. The pathogen process being developed, the excreted bacteria are dispersed in a fecaloid mass becoming abundant by the inhalation of intestinal hydro-electrolytic. As a consequence the reduced density of pathogen has determined the introduction of a process of enriching of the etiologic agent in Sallmonelosis, Yersiniosis, cholera.

In the low diarrheic syndromes, rectal-sigmoidal and in postantibiotics therapy intestinal disbacteriosis, the etiologic agent eliminated at a large density doesn't need enriching that would modify the reports between the groups of component bacteria of the fecal matters.

The phases of the bacteriologic examination by cultivation are presented below, after the initial phase, respectively the collection, the methodological lines regarding the isolation and fit identification of each methodology of investigation are: aerobe, microaerophile and anaerobe.



Fig.1. *Salmonella*: colonies "cat eyes".
Culture Medium SS

In regarding the culture medium, the broth for *Salmonella* with selenite acid of Sodium in many variants, the fact that the selenite with cysteine has specificity gave the best results in isolation of the serotypes met equally in human being.

For *Yersinia* a current procedure of enriching is the keeping of the tampon sampled in tampon solution Phosphate for 2-3 weeks at 4-5°C after which is seeded in selective media. Because the bacteria from the *Yersinia* type are developed preferentially at 22-29°C, the simple incubation at this

temperature accomplishes the enriching on the broth for gram-negative bacilli.

For *Vibrio* alkaline peptone water (pH 9,0-9,2) is the most efficient method of enriching. *V.cholerae* and *V.parahaemolyticus* grow promptly, so that after 6-12 hours of incubation at 35-37°C it can be done the subpassing on selective media specific to the isolation of the vibrios.

The inoculation of the enriching media was accomplished by the suspension of fecal matters, which is seeded with the pipet: 7-10 drops for each tube with enriching medium (maximum proportion 1/10). The tampons from the sample were transferred directly on the enriching media. The incubation is performed at 35-37°C maximum 24 hours. The selenite broth is incubated at 40-41°C, but in this case the passing on selective media is made at 12-18 hours.

The isolation without enriching or the direct isolation consists of seeding the sample, and the suspension of fecal matters is accomplished directly on selective media to obtain the characteristic isolated colonies for their identification.

The study “Food gastroenteritis caused by *Vibrio*, *Yersinia* and *Campylobacter*” affirms that the gastroenteritis determined by *V. parahaemolyticus* is transmitted exclusively by fish products. The involvement of other food is due to the cross contamination with fish products. Another particular characteristics of this syndrome is the natural habitat of the etiological agent: the sea. Beside the fact that it causes gastroenteritis, *V. parahaemolyticus* causes extraintestinal infection in human being.

The *Vibrio* type includes at least 28 species; *V. vulnificus*, *V. alginolyticuse* *V. cholera* are often associated with *V. parahaemolyticus* in the aquatic media and in fish products. *Parahaemolyticus* is common in the ocean waters and the coast waters. Its presence in the water is connected to their temperature, not being detectable as long as it remains under 19-20 ° C.

CONCLUSIONS

1. In regarding the culture medium, the broth for *Salmonella* with selenite acid of Sodium in many variants, the fact that the selenite with cysteine has specificity gave the best results in isolation of the serotypes met equally in human being.
2. The *Yersinia* type is developed preferentially at 22-29°C, the simple incubation at this temperature accomplishes the enriching on the broth for gram-negative bacilli.
3. For *Vibrio* alkaline peptone water (pH 9,0-9,2) is the most efficient method of enriching they grow promptly, so that after 6-12 hours of incubation at 35-

37°C it can be done the subpassing on selective media specific to the isolation of the vibrios.

4. The weak selective media, MC, EMB, allow the growth of all the lactase-positive and negative enterobacteriaceae even of other groups of gram-negative bacilli as *Vibrio*, including *V.cholerae*, *Pseudomonas*.

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SURVEY OF BOVINE LIVESTOCK RESOURCES IN SALAJ COUNTY

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Abstract

The actual global situation related to food and cattle farming, along with all changing pressures, stands for defining suitable strategies for animal breeding, especially in the dairy cattle area of the developing countries. Progress in cattle genetics emerged the use of genomic technologies for identifying favorable genetic profiles for milk quantity and quality production. Along countries and regions, bovine livestock could be potential valuable genetic pools for important traits, including adapting, resistance and others, which should be identified and selected in livestock populations. Salaj county is an important region for dairy cattle farming in Romania, being still in focus for breeding programmes, also in buffalo. This approach aims to draw up a global overview related to dairy cattle and buffalo livestock size and dynamics in Salaj county, which is the starting point for addressing, defining and implementing a durable breeding improvement, based on smallholder sustainable and specific management strategies.

Key words: dairy cattle, buffalo, milk production, performance control, breeding strategies, genetic pool.

INTRODUCTION

The growth of the world’s human population and its shift along country sides or specific regions lead to an increased demand for food, including milk and dairy products, so that animal breeding had to face a continuously trend of changes directed mainly for increasing animal production, but also in terms of quality, by means of highly specialized breeds and advanced genetics used in farm animal breeding programmes (Woelders et al 2006, Tricarico et al. 2020; Rusu et al., 2021).

The North-East and the North-West regions of Romania are on top related to the cattle number, along all over the country regions (STATISTICA, 2021). Salaj county is located in the North-Western part of Romania, specifically between the Western and the Eastern Carpathians, showing a very complex geography, mainly consisting in hills and mountains and a value of the cattle and the buffalo-cattle milk yield per animal close to

the national one (ESTAT, 2021). Moreover, Salaj county is a large center for a valuable buffalo herd (Coroian et al., 2012).

Cattle populations and breeds characterization is the main step for implementing suitable livestock breeding and improvement programmes and strategies (Hoffmann et. al., 2010; Socol and Maerescu, 2020; Vanvanhossou et al., 2021). Phenotypes and genotype data of various traits in cattle stand for an adequate characterization of animal population and individuals (FAO, 2011; FAO, 2015).

The challenges related to the increasing food demand, the high food security, next to the uncertainty of livestock farming in developing countries strength out the necessity of maintaining and managing actual farm livestock populations and breeds, especially in bovine, which could be valuable genetic pools for important traits, including adapting, resistance and others (Socol et al., 2019). Salaj county is an important region for bovine farming being still in focus for breeding programmes. The dynamics of the cattle population size in this region in the last years could provide valuable data that can be used for adequate breeding strategies specifically for smallholder management and the development of this region. The present approach is carried out to draw up a global overview on bovine breeding in Salaj county, pointing out the main breeds effectives, next to the trend of cattle and buffalo number in this region and some perspectives that should be considered for bovine breeding based on the actual status.

MATERIAL AND METHOD

The paper is an assessment of the present situation and the dynamics of dairy cattle and buffalo number in Salaj county. Data from reports of the National Agency for Animal Husbandry “Prof. dr. G. K. Constantinescu”, the National Institute of Statistics and of the bovine associations and organizations recognized by the official competent authorities at national level, regarding the bovine number under performance control for milk production included breeding programmes in Salaj county, reported to the Salaj County Animal Husbandry Office from the National Agency for Animal Husbandry „Prof. dr. G. K. Constantinescu” (reports of January of each year) were used. Data collected from available reports was further extracted and analyzed for dairy cattle and buffalo number under performance control and breeds in Salaj region.

RESULTS AND DISCUSSION

According to the data reported in 2020, the North-East and the North-West regions of Romania show the highest number of cattle, along all over the country regions, i.e. 467.771 and 365.037 of the total number of 1.914.602 cattle in Romania (STATISTICA, 2021).

The number of bovine under performance control for milk production in Romania showed an increasing trend during the last five years, but the increment of bovine number at country level is still targeted, the effectiveness number being not satisfactory (Table 1).

Table 1

Dynamics of total number of bovine in Romania under performance control for milk production during 2016-2020

Year	Total bovine no. under performance control for milk production (heads)
2016	131.050
2017	214.650
2018	288.925
2019	285.432
2020	296.655

**data according to the Technical bulletin report in bovine species at 31.03.2020 for the first quarter of 2016-2020, of The National Agency of Animal Husbandry (ANZ, 2020)*

Moreover, one of the goals of The Ministry of Agriculture and Rural Development, in agreement to the actual European regulations and also to national specific programmes authorized by the competent authority in animal husbandry i.e. The National Agency for Animal Husbandry „Prof. dr. G. K. Constantinescu”, consists in stimulating dairy cattle breeding and improvement in terms of implementing specific feasible strategies and programmes. Also, a special interest should be addressed to buffalo breeding sector, which shows a real potential. For stimulating bovine farming in Romania, including dairy cattle and buffalo breeding, different financial support schemes are implemented for stimulating bovine breeding, referring to breeding programmes and performance control for milk production.

The bovine breed structure under performance control for milk production in Salaj county consists in the Romanian Spotted Cattle – Simmental breed (BR-SIM), which has the largest size, followed by the Romanian Black Spotted Cattle - Holstein-Friesian (BNR-HF), only a very smaller number of Brown Cattle (B) and Montbeliard (MO), but an important number of buffaloes. The Romanian Spotted Cattle – Simmental breed is the main breed found in Salaj county (Table 2).

The informative report of 2019, Salaj indicated a total number of 8500 bovine heads included in breeding programmes and under performance control for milk production, of which 1421 buffalo heads (Table 2); all bovine animals are comprised in 939 dairy farm holders, of which 356 dairy cattle farms and 583 buffalo farms.

The total size of dairy bovine included in breeding programmes and under performance control for milk production, from Salaj county according to the informative report of the year 2020 consisted in 7960 bovine heads, including 1477 buffalo heads (Table 2), all together found in 831 dairy farm holders, of which 312 dairy cattle farms and 519 buffalo farms.

Table 2

Dynamics of total number of bovine under performance control for milk production in Salaj county during 2019-2020

Year	Total cattle no. (heads)			Total buffalo no. (heads)	Total bovine no. (heads)
	Total taurine no.	Breed	Total taurine no./breed		
2019	7079	BNR-HF	999	1.421	8.500
		BR-SIM	6037		
		MO	20		
		B	23		
2020	6483	BNR-HF	1030	1477	7960
		BR-SIM	5401		
		MO	20		
		B	32		
2021	6442	BNR-HF	1005	1528	7970
		BR-SIM	5411		
		MO	7		
		B	19		

**data reported by the bovine breeding associations to the Salaj County Animal Husbandry Office from the National Agency for Animal Husbandry „Prof. dr. G. K. Constantinescu”*

In 2021 the total size of dairy bovine in Salaj show quite the same trend related to the number of bovine heads, with a very slight increase in the buffalo number (1528 buffalo heads). According to the data reported in January of 2021 in Salaj county there are 7970 bovine heads in 797 dairy farm holders, of which 312 dairy cattle farms and 485 buffalo farms.

Furthermore, most of the farm holders accessed financial support for bovine breeding schemes, which probably contributed to the maintaining of bovine effectives in this area.

The analysis of the above numbers indicates that Salaj county shows most of the bovine livestock in smallholder farms, buffalo being specific in this region and an important part of it, which should be further addressed.

Dairy cattle breeds and buffaloes found in specific country regions, including that of Salaj, may show valuable traits, which could be revealed by means of genetics, such as potentially valuable alleles and genotypes for improving milk yield and quality, that could be further targeted and selected in breeding programmes.

The evaluation of the actual situation and the dynamics of the number of bovines from Salaj county related milk performances could be further assessed for genetic profiles in dairy cattle and buffalo from this area, which still may preserve specific adaptive traits and also related to high quality milk proteins benefic for human health. Moreover, new strategies for improving dairy cattle and buffalo livestock breeding based on such considerations and adapted to the specific region of Salaj are still needed.

Dairy cattle populations from Romania are valuable livestock, requiring a special interest for farming and animal improvement, but also for genetic assessment, which is still deficitary implemented in animal breeding in our country (Socol and Maerescu, 2020). The potential unique genetic pool of bovine of this region, which is still unraveled, could be saved from threatening by the developing adequate breeding strategies specifically for smallholder management practices, that is often neglected.

CONCLUSIONS

Dairy production from Salaj region could encode a real potential for food security and human health, based on bovine genetics not yet ravelled from smallholders in this area. The current status of bovine livestock in this region could stand for such purposes in further studies, the Romanian Spotted Cattle – Simmental breed and the buffalo being of interest. Also, the data of the present paper stands for designing and implementing appropriate and specific breeding schemes for local production systems in this region.

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WAYS OF EVALUATING THE MEDICAL SYSTEM, OVER TIME, THROUGH PERFORMANCE INDICATORS, GENERALLY ACCEPTED AT THE NATIONAL LEVEL

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Abstract

The parallelization of the management of the sanitary units in Romania, by emphasizing and highlighting the strong points as well as the less developed points, helps both in the field of the theory of hospital administration and in the field of the practitioners of the sanitary units. Through the research that follows, it will be possible to establish many mistakes in the field of hospital administration but also the objective possibility of avoiding some wrongly taken measures in the future. At the same time, the correct decisions taken regarding the management of hospitals must be highlighted, developed and supported as viable in the administration of health units.

In fact, the research of hospital administration by paralleling the two time periods, the centralized period and the decentralized period, is nothing more than a highlight of our ability to learn from the history lived in the last 20 years in the Romanian medical sector.

This abstract can be defined by the following slogan: "We learn from our past, we do not repeat the wrong measures, and effective decisions must be maintained and sustained."

Key words: decentralization, health services, hospitals, Faculty of Medicine and Pharmacy, Local Public Administration.

INTRODUCTION

In fact, the first question we can ask is in what form do we compare the two time periods?

Also, the next question we can ask is about quantifiable parameters specific to the medical sector, which may highlight certain positive or negative situations for these periods of time.

Some of these performance indicators, quantifiable from a numerical point of view but also qualitative, can be the following:

- the modalities of classification in the sanitary units with beds;
- the capacity to provide the necessary medicines in the hospital;
- level of cleanliness within the hospital wards;
- quality and quantity of meals served to hospitalized patients;
- number of nosocomial infections detected and reported in the hospital;
- waiting time at the UPU-SMURD emergency unit;

MATERIAL AND METHOD

In conducting this study, the main working method is the "analysis method". In addition, we also use the "comparison method". The data are obtained from official documents issued by the Local Council of Oradea, as well as by the City Hall of Oradea. (dispositions and decisions of the local council of Oradea municipality), of the Ministry of Health-ministerial order, decisions of the Senate of the University of Oradea.

RESULTS AND DISCUSSIONS

1. The modalities of classification in the sanitary units with beds can be of several types:

-clinical integration is a formula for concluding an employment contract between a hospital and a doctor, in a specific specialty, with the professional degree of specialist or mayor. This doctor must meet two sine qua non conditions, namely:

- to be employed at the Faculty / University of Medicine and Pharmacy on a teaching position, within a department / discipline;

- to request, to the sanitary unit with beds, the classification on 0.5 doctor position in the respective specialty;

Of course, there is specific legal legislation governing this form of hospitalization, which specifies all the approvals required to conclude such an employment agreement.

According to the latest legislation in the field, the last approval on clinical integration is given in the Board of Directors of the hospital, the administrative act of approval materializing in the form of a Decision of the Board of Directors, based on the decision of the majority.

-incorporation through competition / examination for filling the positions of doctors. Unlike the first method of classification in which no theoretical or clinical evidence for a doctor's position is given, in the second formula the hospitalization is made on the basis of a written test and a clinical test (at the patient's bedside). depending on the specialty of the job).

2. The provision of medicines for patients admitted to a health unit is a basic indicator, extremely important, a real barometer in terms of the smooth running of managerial activity in the hospital.

There are situations, in hospitals, in which the medical staff, usually the attending physician, asks the patient to purchase from outside the unit a certain type of medicine to be used in the treatment of the patient.

The rule of the hospital is that the management of the health unit and the medical department in which the patient is hospitalized to provide all the

medicines, prescribed by the attending physician, to help restore health before the onset of the disease.

Requesting to bring medicines from outside the hospital is a negative indicator for any hospital management. This barometer shows that there are some organizational or substantial deficiencies in the organization and operation of the hospital administration.

3. Cleanliness in the medical departments of the hospital, in the medical laboratories or TESA structures, is the indicator that highlights the manager's ability to provide optimal conditions for the provision of medical services in the hospital he manages.

4. The cleanliness of the hospital is closely related to another important factor in this administrative framework of the provision of medical services, namely nosocomial infections.

A comprehensive definition of nosocomial infection or inpatient infection is “that infection which is not present or which is not in the incubation period when the patient was hospitalized and adds to the disease for which the patient was hospitalized. Nosocomial infections may be related to deficiencies in hygiene, sterilization, maneuvers or medical care. [2] This type of infection occurs in a hospital, either between patients with different diseases who come into contact with each other, or from patients or caregivers from the care staff. Usually this infection is post-operative”¹¹.

5. Extremely important in a hospital is the quality and quantity of the meal served to the patient. Dietary assistance is an extremely important link between the doctor and the patient.

For example, in type 1 or type 2 diabetes, the patient's treatment of insulin or medication is directly related to the amount of carbohydrates in each meal. Specifically, the dietitian must establish and follow all the doctor's instructions in this regard. Incorrect calculation of the amount of carbohydrates served to the diabetic patient leads to failure to achieve the goal set by the diabetologist in treating the patient. Wrong calculation of the food served to the patient will lead to a state of hypoglycemia or hyperglycemia.

6. The waiting time of the patient in the emergency unit is extremely important from several points of view.

Strictly human, every second of waiting for a patient in the waiting room, is an eternity due to the acute pain he feels. However, paramedics have a duty to make a selection of cases according to the severity of each one. More specifically, a metatarsal fracture can be delayed if, at the same time, there is a victim of an accident in cardiac arrest.

CONCLUSION

All these performance indicators, which are part of the method of evaluating the organizational management of a hospital, must be evaluated strictly, objectively and professionally by competent personalities in the medical world. Only in these conditions can the strengths and weaknesses in the evaluation of the activity of administration and management of a sanitary unit with beds be quantified.

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PHYTOCOENOLOGICAL RESEARCH CONCERNING THE GRASSLANDS FROM THE LOWER BASIN OF CRIȘUL NEGRU RIVER

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Abstract

This work represents a phytocoenological study of the halophilic association Pholiuro-Plantaginetum tenuiflorae (Rapaics 1927) Wendelberger 1943, which is classified from the coenotaxonomic point of view in the class Puccinellio-Salicornietea Țopa 1939.

In the studied region, the phytocoenoses of the Pholiuro-Plantaginetum tenuiflorae association are installed in negative relief forms where the water stagnates until late spring, and during the summer they become dry, such as the meadows near Ciumeghiu, Salonta, Mădăras and Mărțihaz.

Pholiuro-Plantaginetum tenuiflorae association, was analyzed in terms of floristic composition, life forms spectrum, floristic elements, ecological indices and karyotype spectrum.

Key words: phytocoenoses, floristic composition, ecological indices, life forms, karyotype, floristic elements, halophilic vegetation.

INTRODUCTION

Chorology: the phytocenoses of this association have been described in our country from Oltenia (Cârțu, 1971); Muntenia (Șerbănescu, 1965; Popescu et al., 1984); Crișana (Pop, 1968); Banat (Grigore, 1969; Coste et al., 1993).

Type of habitat: Natural Habitat of Community interest whose conservation requires the designation of Special Areas of Conservation (ASC), Natura 2000: 1530* Pannonic salt-steppes and salt-marshes.

In the studied region, these phytocoenoses grow on sulfate or carbonate salts occupying sample areas between 20–40 m², the coverage of vegetation layer being 70–100%. They are installed in negative relief forms, where the water stagnates until late spring, and during the summer they become dry, such as the meadows near Ciumeghiu, Salonta, Mădăras and Mărțihaz.

Code R1516 West Pontic communities with *Pholiurus pannonicus* and *Plantago tenuiflora* (Doniță et al., 2006, Gafta, Mountford (coord.) et al., 2008).

MATERIAL AND METHODS

Framing the association to the corresponding cenotaxonomic units – alliance, order and class was made according to the traditional ecological and floristic systems elaborated by Tüxen (1955), Braun–Blanquet (1964), Borza et Boşcaiu (1965), Soó (1964-1980), as well as on the basis of the most recent works belonging to Mucina (1997), Rothmaler (1994, 2000), Borhidi (1996, 2003), Coldea et al. (1997); Sanda et al. (2008).

The study of the halophilic vegetation of the grasslands from the lower basin of Crişul Negru River was made taking into consideration the phytosociological research method of the European Central School, based on the principles and methods elaborated by Braun–Blanquet (1964) and adapted by Borza and Boşcaiu (1965) to the particularities of the vegetation carpet from our country.

The taxa identified in the field have been recognized by specialty catalogues "Romania's Illustrated Flora" (Ciocârlan, 2009), in conjunction with the information provided by the "International Code of Botanical Nomenclature" (Code de Tokyo, 1993).

The association synthetic table was structured after the methodology proposed by Braun–Blanquet (1964) and developed by Ellenberg (1974); therefore, in the column header of the table for the association analyzed the following have been entered: the serial number of land surveys, altitude (m.s.m.), area (m²), coverage of grass layer (%). At the end of the table, the last two columns included the synthetic phytocoenological indices, constancy (K) and abundance–dominance index (ADm).

The constancy highlights the extent of coenotic fidelity of each species to the phytocoenosis environment of the association, according to the Braun–Blanquet et Pavillard methodology (1928). The abundance and dominance highlight the percentage of average coverage achieved by phyto–individuals of a phytocoenosis.

Establishment of the values for ecological indices, life forms, floristic elements and karyotype were made after the synthesis works elaborated by Raunkiær (1937), Braun–Blanquet (1951), Meusel et Jäger (1992), Ellenberg (1974, 1979), Ellenberg et al. (1992), Soó (1964-1980), Májovsky et Murin (1987), Sanda et al. (2003), Pop (1977, 1982), Ciocârlan (2009).

RESULT AND DISCUSSION

The characteristic species of the association are *Pholiurus pannonicus*, with a general coverage of 87.5% ADm, having the maximum constancy (K=V) and *Plantago tenuiflora* with a general coverage of 0.3% ADm, the constancy being high (K=III).

The floristic composition includes a number of 28 species, mostly halophilous (*Table 1*), which subordinate the association to the ***Puccinellion limosae*** alliance: *Puccinellia distans* ssp. *limosa*, *Hordeum hystrix*; ***Puccinellietalia limosae*** order and ***Puccinellio-Salicornietea*** class: *Lotus angustissimus*, *Juncus gerardii*, *Plantago tenuiflora*, *Gypsophila muralis*, *Achilea setacea*, etc.

Table 1

***Pholiuro-Plantaginetum tenuiflorae* (Rapaics 1927) Wendelberger 1943**

L.f.	F.e.	W	T	S.r.	2n	No. Land Surveys	1	2	3	4	5	K	ADm
						Altitude (m.s.m.)	92	94	94	95	95		
						Area (m ²)	20	40	25	35	40		
						Coverage of grass layer (%)	100	90	95	80	95		
Th	Ppn	2	4	5	D	<i>As. Pholiurus pannonicus</i>	5	5	5	4	5	V	87,5
Th	Eua	3.5	3.5	5	P	<i>As. Plantago tenuiflora</i>	.	+	+	.	+	III	0.3
<i>Puccinellion limosae</i>													
Th	Eua	2	4	4.5	DP	<i>Hordeum hystrix</i>	.	.	+	+	.	II	0.2
H	Eua	3.5	0	5	P	<i>Puccinellia distans</i> ssp. <i>limosa</i>	.	.	+	+	.	II	0.2
H	Eua	4	0	5	D	<i>Plantago maritima</i>	+	.	+	.	.	II	0.2
<i>Puccinellietalia limosae, Puccinellio-Salicornietea</i>													
Th	Eua	2	3	2	D	<i>Gypsophila muralis</i>	+	.	+	.	+	III	0.3
H	Eua	2	3	5	D	<i>Achilea setacea</i>	.	.	+	+	.	II	0.2
Th	Eua	0	4	4.5	P	<i>Heleocholea schoenoides</i>	.	+	.	.	+	II	0.2
H	Eua	3.5	3	4	D	<i>Lotus tenuis</i>	.	.	+	.	+	II	0.2
Th	Mp	2	4	4	D	<i>Lotus angustissimus</i>	.	.	.	+	.	I	0.1
H	Eua	3	3	5	D	<i>Trifolium fragiferum</i>	+	.	.	.	.	I	0.1
Th	Eua	2	0	4	D	<i>Scorzonera laciniata</i>	.	.	.	.	+	I	0.1
Th	Eua	3.5	3.5	5	P	<i>Plantago tenuiflora</i>	.	.	.	.	+	I	0.1
H	Mp	2	4	4.5	D	<i>Scorzonera cana</i>	.	.	+	.	.	I	0.1
Th	Cosm	2.5	0	3	P	<i>Polygonum aviculare</i>	.	+	.	.	.	I	0.1
G	Cp-Bo	4.5	3	5	P	<i>Juncus gerardii</i>	.	.	.	1	.	I	0.1
<i>Molinio-Arrhenatheretea</i>													
H	Cp-Bo	4	0	0	P	<i>Agrostis stolonifera</i>	+	.	.	1	.	II	0.2
H	Eua	2.5	4	4.5	D	<i>Lolium perenne</i>	.	.	+	.	+	II	0.2
H	Eua	3	0	0	P	<i>Achillea millefolium</i>	+	+	.	.	.	II	0.2
H	Eua	3.5	0	0	D	<i>Festuca pratensis</i>	1	+	.	.	.	II	0.2
H	Eua	3.5	0	0	P	<i>Trifolium repens</i>	.	.	+	.	1	II	0.2
H	Eua	3.5	0	0	D	<i>Ranunculus acris</i>	.	.	.	+	.	I	0.1
H	E	3.5	3	4	D	<i>Trifolium hybridum</i>	.	.	.	+	.	I	0.1
H	Eua	3	3	2.5	D	<i>Hypochoeris radicata</i>	+	.	.	.	.	I	0.1
<i>Variae syntaxa</i>													
G	Cosm	2	3.5	0	DP	<i>Cynodon dactylon</i>	.	.	+	.	+	II	0.2
Th	Cosm	4	3	0	P	<i>Lythrum hyssopifolia</i>	.	.	.	+	.	I	0.1
Th	Eua	1	3.5	2	P	<i>Vulpia myuros</i>	.	.	.	+	.	I	0.1
H	Eua	2.5	3	4	P	<i>Agrimonia eupatoria</i>	+	.	.	.	.	I	0.1

Phytocoenological table of *Pholiuro-Plantaginetum tenuiflorae* (Rapaics 1927) Wendelberger 1943 association, where: L. f. - life forms; F. e. - floristic elements; W - soil wet; T - temperature; S. r. - chemical reaction of the soil; 2n - karyotype; K - constancy; ADm - abundance-dominance; Th - Annual Therophytes; H - Hemicryptophytes; G - Geophytes; Ppn - Ponto-Pannonian; Eua - Eurasian; Mp - Mediterranean-Pontic; Cosm - Cosmopolitan; Cp-Bo - Circumpolar-Boreal; E - European; D - diploidy, P - polyploidy, DP - diplo-polyloidy.

Place and date of surveys: 1 - Ciuneghiu locality (Bihor County) 28.07.2020; 2 - 3 Salonta locality (Bihor County) 28.07.2020; 4 - Mădăras locality (Bihor County) 29.07.2020; 5 - Mărțihaș locality (Bihor County) 29.07.2020.

The phytocoenoses of the association include transgressive species from the *Molinio-Arrhenatheretea* class, of which, with higher constancy, they are: *Agrostis stolonifera*, *Festuca pratensis*, *Achillea millefolium* (K=II), respectively *Ranunculus acris*, *Trifolium hybridum*, etc.

The life forms spectrum, for the *Pholiuro-Plantaginetum tenuiflorae* association (Fig. 1), indicates the dominance of hemicryptophytes species (53.57%), followed by annual therophytes (39.28%).

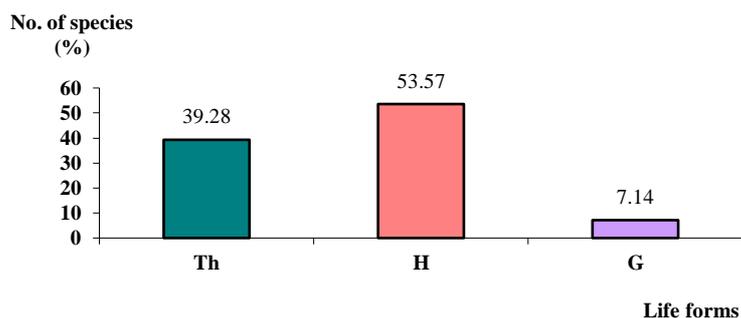


Fig. 1 – The life forms spectrum of *Pholiuro-Plantaginetum tenuiflorae* association, where: Th – annual therophytes, H – hemicryptophytes, G – geophytes.

The floristic elements spectrum (Fig. 2), expresses the dominance of Eurasian species (67.85%), followed by Cosmopolitan ones (10.71%); Mediterranean-Pontic and Circumpolar-Boreal, with an equal share, each with 7.14%.

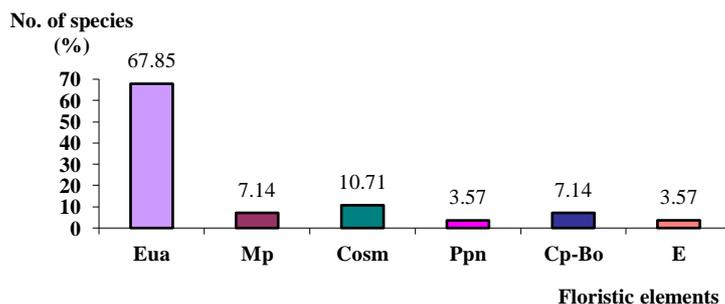


Fig. 2 – Floristic elements spectrum of the *Pholiuro-Plantaginetum tenuiflorae* association, where: Eua – Eurasian, Mp – Mediterranean-Pontic, Cosm – Cosmopolitan, Ppn – Ponto-Pannonian, Cp-Bo – Circumpolar-Boreal, E – European.

The diagram of ecological indices (*Fig. 3*) shows that, depending on the preferences for humidity, the xero-mesophile and mesophile species are codominant, each with 39.28%. Compared to the temperature factor, the largest share is held by micro-mesothermal species (46.42%), followed by eurytherms ones (32.14%). Regarding the chemical reaction of the soil, there is a high number of slightly acid-neutrophile species (32.13%), but also of the neutro-basophile (28.57%).

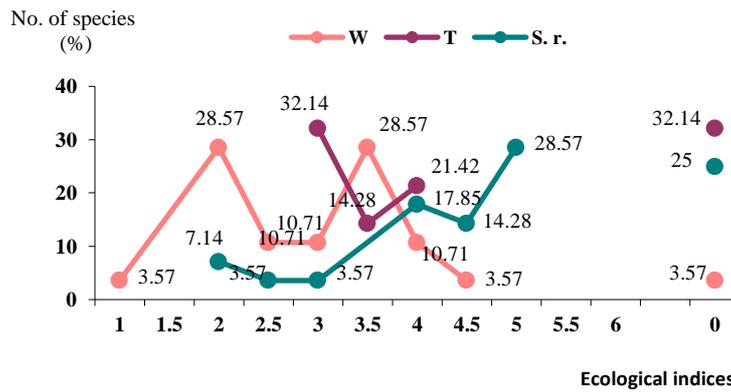


Fig. 3 – Diagram of ecological indices for the *Pholiuro-Plantaginetum tenuiflorae* association, where: W – soil wet, T – temperature, S. r. – chemical reaction of the soil.

The karyotype spectrum (*Fig. 4*) expresses the close share of diploid species (50%) and polyploid species (42.85%), followed by diplo-polyploid species (7.14%).

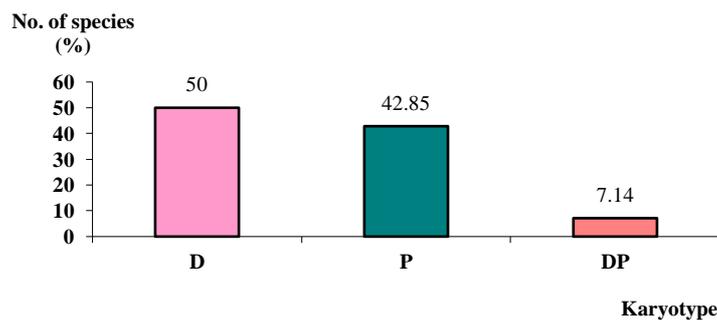


Fig. 4 – The karyotype spectrum of *Pholiuro-Plantaginetum tenuiflorae* association, where: D – diploidy, P – polyploidy, DP – diplo-polyploidy.

CONCLUSIONS

The results of the analysis for the association *Pholiuro-Plantaginetum tenuiflorae* indicate that it is well outlined, with a varied composition and structure, and our results are in line with the specialty literature.

The results obtained from the life forms analysis reveal the high percentage of hemicryptophytes (53.57%), which are main components of the meadows grass layer.

The floristic elements stock is dominated by Eurasian species (67.85%), with the genesis in ancient times.

In terms of requirements for humidity, the xero-mesophile and mesophile species are codominant, each with 39.28%, which signifies the presence of habitats with arid and moderate microclimate in the studied area; in relation to the temperature factor, species that are reflected in the general appearance of the flora are micro-mesothermal (46.42%); regarding the chemical reaction of the soil it reveals the slightly acid-neutrophile character (32.13%), followed by the neutro-basophile character (28,57%).

Phytocoenoses of halophilous grasslands dominated by *Pholiuro-Plantaginetum tenuiflorae* plant association, is a rare natural habitat of community interest whose conservation requires the designation within the Special Areas of Conservation (ASC), Natura 2000: 1530* Pannonic salt-steppes and salt-marshes.

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CONCENTRATION IN ESSENTIAL FATTY ACIDS OF FISH OIL COMPARED TO SANE ENRICHED ESSENTIAL FATTY ACIDS

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Abstract

In this paper we try to enrich the acidic dairy product sana in essential fatty acids by adding fish oil in the raw milk of sheep's milk. The aim is to incorporate these acids from the composition of fish oil into the fat globule of milk, thus being absorbed into the human body with milk fat which is assimilated in a proportion of 95%. For this purpose, the mixture of milk and fish oil was homogenized because through this process the membranes of the milk fat globule split and the fat in the fish oil adheres to the milk fat. After, fat globule membranes are restored by incorporating the fat from the fish oil and thus the milk used in the manufacture of the product is enriched in essential fatty acids. There is the disadvantage that the finished product receives the taste and aroma of fish which can be removed by deodorization.

For comparison and to determine the optimal concentration of fish oil to be added to the milk at the optimal point of incorporation of fatty acids in the fat globule, 4 samples of sana were made: one sample without addition of fish oil, considered as a control sample and three samples with progressive additions of 0.05%; 0.10% and 0.15%. The fatty acid concentration of fish oil and sana samples were analyzed by gas chromatography. Three essential fatty acids that are specific to both milk and fish oil composition were analyzed. They were obtained values of the concentration of essential fatty acids were obtained in relation to the total fatty acids:

- in the case of fish oil the concentration in linoleic acid is 3.35%, in linolenic acid 9.20% and γ -linolenic acid 2.18%;

- in the case of sana the concentration in:

- linoleic acid is 2.68 for the sample without the addition of fish oil, 2.79 for the sample with the addition of 0.05%; 2.9 for the addition of 0.10% and 3.24% for the addition of 0.15% fish oil;

- linolenic acid is 1.00% for the sample without the addition of fish oil, 1.12% for the sample with the addition of 0.05%; 1.25 for the addition of 0.10% and 1.30% for the addition of 0.15% fish oil;

- γ -linolenic acid is 0.84% for the sample without the addition of fish oil, 0.95 for the sample with the addition of 0.05%; 0.85 for the addition of 0.10% and 1.05% for the addition of 0.15% fish oil.

Key words: sane, essential fatty acids, fish oil

INTRODUCTION

Milk and dairy products contain all the elements necessary for life and they are in optimal concentrations. Milk and dairy products are often a significant part of the human daily diet and provide proteins of animal origin with high biological value for the growth and functioning of the human body. Milk processing technologies affect the structural and functional properties of proteins that are more easily digestible in the gastrointestinal tract ([Zuhaib F.2021](#)).

The fat globule membrane is very rich in bioactive compounds that increase human life hope. It has been found that the addition of phospholipids in milk, lecithin, has the role of protecting the fat cell membrane in the process of homogenizing milk. It aims to obtain functional dairy products (Naiyan Lu, 2021).

Lactose plays an essential role in the composition of milk, and the low lactose content negatively affects the production of dairy products. Analysis of lactose content in milk was positively associated with fat and protein content, as well as negatively associated with pathogenic bacteria. Their increases are associated with a reduction in the lactose content of milk, without the influence of variations in fat and protein content. Plus, the total dry matter in milk, which accounts for most of the milk's components, affects the quality of the milk. (Dileta Regina MoroAlessio, 2021).

Organophosphorus pesticides (PPOs) are a group of common residual pollutants in food that cause serious negative effects to human health. The ability of 10 lactic acid bacteria (LAB) to degrade OPPs for their potential to degradation OPPs in fermented dairy products was studied. The results showed that some LABs can survive in the presence of OPPs and decompose them significantly in a short time. Of these, *Lactobacillus plantarum* subsp. *plantarum* (L. *plantarum* 20261) showed the highest decomposition capacity. The phosphatase produced by this bacterium could rapidly degrade OPPs in vitro. In addition, the excellent antioxidant capacity of *Lactobacillus* and its tolerance to simulated gastric and intestinal juices have shown their potential protective effects against negative oxidative effects induced by pesticides (ShaofengYuan, 2021).

Parkinson's disease (PD) is a neurodegenerative process that affects motor function and involves an inflammatory response and vitamin B deficiencies. Lactic acid bacteria (LAB) are a producer of B vitamins and immunomodulators. The three species of lactic bacteria, *Lactobacillus plantarum* CRL 2130 (a producer of riboflavin), *Streptococcus thermophilus* CRL 807 (an immunomodulatory strain) and *Streptococcus thermophilus* CRL 808 (a producer of folate) have the ability to increase motor capacity, have positive effects on the brain and lead to a decrease in inflammatory

cytokines, an increase in the anti-inflammatory cytokine. This probiotic mixture could be used as a treatment to control Parkinson's disease (Daiana Perez 2020).

Fish is a clean food resource. For a balanced diet, the romanians need eat about two fish or two meals of seafood a week. According to statistics, at the moment in Romania we consume, on average, a fish meal every three weeks, which is extremely low (Morna Anamaria 2017).

It has been found that dietary supplementation with fish oil has a direct impact on preventing obesity and decreasing muscle mass (Shing-Hwa, 2021).

Essential fatty acids have many health benefits. Essential fatty acids as dietary supplements are used in the treatment of dry eyes to reduce inflammation in the eye surface (PoonamMudgil, 2020).

The additional intake of essential fatty acids seems to have a protective effect in some diseases such as cardiovascular disease, cancer and asthma (Miriam Isabel Souza dos Santos SimonMSc, 2020).

MATERIAL AND METHOD

In this study, an acidic dairy product, sana, was manufactured in order to obtain a functional product, enriched in essential fatty acids. Thus in the raw material was added fish oil which is rich in essential fatty acids. 4 samples were made: one without addition and three with progressive addition of 0.05%; 0.10% and 0.15%. The milk used was sheep's milk from the first lactation period, which is characterized by a higher casein content and a lower fat content. The aim is to incorporate the fish oil inside the fat globules by homogenizing the milk. Sheep's milk, with and without the addition of fish oil, was pasteurized in a short-term medium pasteurization regime at temperatures of 73°C for 30 seconds. Afterwards, both the milk without the addition of fish oil and the mixture were homogenized at a temperature of 70°C and a pressure of 200 bar. In this way the fat globules are broken down, the fish oil adheres to the milk fat and then the fat globule is restored by incorporating the fats from the fish oil and thus the raw sheep milk may be enriched in essential fatty acids. Next, the technological process is the classic one for obtaining sane.

The finished product was sensorially analyzed by five unauthorized people.

From a physical-chemical point of view, the percentage of fat, dry matter and acidity was followed.

Essential fatty acids in finished products and fish oil were analyzed by gas chromatography.

In order to assess the incorporation of fish oil in the product, three essential fatty acids were analyzed, which are characteristic of both sheep's

milk and fish oil, respectively linoleic acid, linolenic acid and γ -linolenic acid as a percentage comparison. Fatty acid concentrations are reported as% of total fatty acids.

RESULTS AND DISSCUSIONS

The coding of the samples is shown in table 1

Table 1

No. cr.	Add fish oil %	Sample code	
		Sane	Fish oil
1	0	SN ₀	FO
2	0,0,5	SN _{0,05}	FO
3	0,10	SN _{0,10}	FO
4	0,15	SN _{0,15}	FO

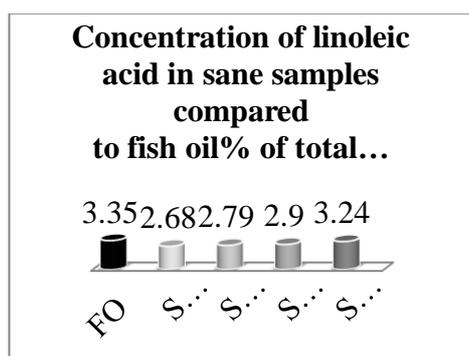


Figure 1 Concentration of linoleic (ω 6) acid in sane samples compared to fish oil% of total fatty acids

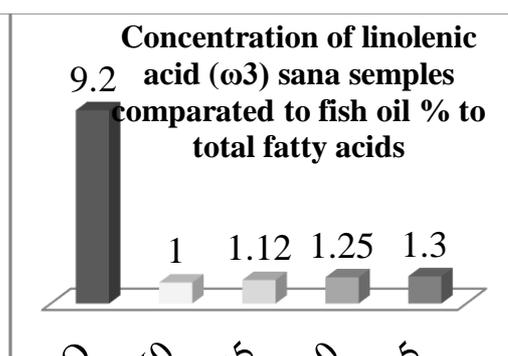


Figure 2 Concentration of linolenic acid (ω 3) in sane samples compared to fish oil% of total fatty acids

Linoleic acid is found in the samples of sane compared to that of fish oil in a proportion of 7.37% in the samples with 0.05% added fish oil, 7.3% in the samples with the addition of 0.1% and 12, 5 in the samples with 0.15% addition (figure 1).

With regard to linolenic acid, the situation is as follows: in the samples of 0,05% it is found in a proportion of 22,8%, in the samples with 0,1% in the proportion of 23% and in the samples with the addition of 0,15 % in proportion of 18.4% (figure 2).

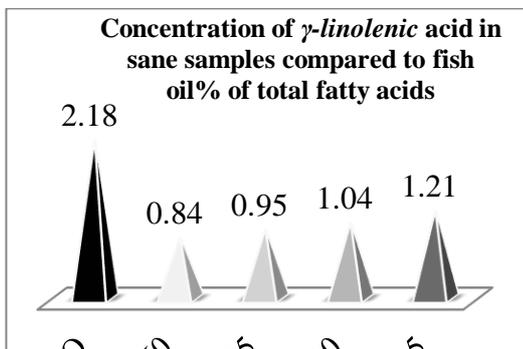


Figure 3 Concentration of γ -linolenic acid (ω 3) in sane samples compared to fish oil% of total fatty

γ -linolenic acid is found in the samples of sane compared to that of fish oil in a proportion of 4.79% in the samples with 0.05% add fish oil, 4.3% in the samples with the addition of 0.1% and 5.3 in the 0.15% addition samples (Figure 3).

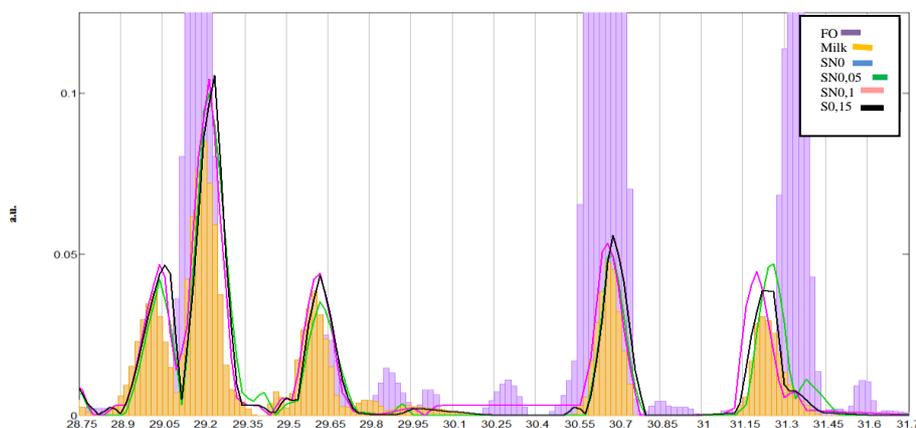


Figure 4 Graph of superimposed chromatograms of sana samples with and without the addition of fish oil – the area of detection of essential fatty acids

Figure 4 shows the areas of the chromatograms of essential fatty acids which are bigger in the case of samples with fish oil than those without addition but smaller than in fish oil, taking into account that the additions were also in small percentages (0,05%; 0,1%; 0,15%).

CONCLUSIONS

In conclusion, the fatty acids in fish oil are incorporated, approximately the same, taking into account the percentage added to the milk but it is different depending on the fatty acid analyzed. Respectively, compared to γ -linolenic acid, linolenic acid is found in the product in a proportion of 8 times higher and linoleic acid 1.5 times higher.

The addition of fish oil imprints the specific taste and aroma of fish samples of sana with the addition of 0.1 and 0.15% fish oil but which disappears after three days of refrigeration. This inconvenience can be removed by deodorizing the milk.

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CONSUMER ATTITUDE AND PERCEPTION OF ECOLOGICAL FOOD CONSUMPTION

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Abstract

The objectives we started from to achieve the purpose of the paper were: identifying the profile of the consumer of organic products (obtaining information on age, income, education and occupation), the intention to buy and consume organic products.

The analysis of respondents' responses indicates a positive awareness of consumers about the intention to buy and consume organic products.

It is noticeable that we have a profile of a potential buyer of organic products, young with an above average income and with an intellectual training that allows him to differentiate between an organic product and a conventional product.

The biggest influence on the purchase of green products is the price and taste, while the logo and their safety have a smaller influence.

Key words: attitude, perception, Likert scale.

INTRODUCTION

The term "organic" refers to a method of production.

Organic production is a general system of farm management and food production that aims at sustainable agriculture, high quality products and the use of processes that are not harmful to the environment, or to humans, plants or animal health and welfare (Kotler Ph, Armstrong G, 2008; Ajzen, I., 2005; Manole, V et al, 2003).

Various terms such as 'bio', 'organic', 'eco' are used to refer to organic products. However, organically grown foods should not be confused with foods sold as 'natural' (Roman Gheorghe Valentin, et al., 2008; Oprea Lucian, 2010; Stoian Mirela, 2011; Saunders, M., et al., 2009; Ajzen, I., 2005).

This term widely used in food marketing has a variety of definitions, most of which are vague, and is supposed to involve foods that are minimally processed and whose ingredients are all natural products. The term "bio/biological" prevails in Latin and Germanic languages.

English-speaking countries mostly use the term "organic". In the United States (US), the term "organic" can be used for certified organic products, while the label "natural" is legally an unregulated expression (Kent, R., 2007; Kotler P. & Armstrong, G. 2010; Kotler Philip, 2004; Hîlma Elena, 2019).

Ecologically processed products should be obtained by processing methods ensuring that, throughout all stages of the production chain, the ecological integrity and essential qualities of the product are maintained (Kotler Philip, Keller Kevin Lane, 2006; Rîndașu Venera-Cristina, 2005; Stanciu Sică, 2003; 3. Hîlma Elena, 2016).

An organic food product is considered to be an agri-food product included in the group of organic products that has been obtained as a result of clean agricultural practices (or technologies) that comply with the conditions regarding:

- ✚ banning the use of synthetic chemicals (in this way eco-marketing also promotes the offer of non-polluting alternative products in the fight against diseases and pests in agriculture);
- ✚ using technologies to obtain the product so the environment and animals are protected;
- ✚ acceptance of control forms for non-polluting production conditions;
- ✚ compliance with the rules imposed by regulations and standards in the production and distribution of these products.

We may conclude that in this concept of organic food, both the producer and the distributor and consumer are involved, as these products have influences on the strategy of the economic agent and the balance within the agricultural/agri-food chain (Stanciu Sică, 2006; Kotler Philip, et al., 1998; Kotler P. Et al., 2010; Kotler P.et ll., 2009).

MATERIAL AND METHOD

We chose this research topic because consumers prefer to buy and use organic products that are not harmful to human health and the environment.

The purpose of the quantitative study is to understand the attitude and perception of consumers regarding the consumption of organic food and was conducted between April 25 and May 24, 2020.

The study was conducted by completing a questionnaire by consumers on the attitude and perception of consumers on the consumption of organic food in Bihor County.

The specific objectives of this research are:

Identifying the consumer profile of organic products (obtaining information on age, income, education and occupation).

Intention to buy and consume organic products.

The hypotheses from which this research topic was based are:

- H1: The "EA" logo ("Ecological Agriculture") influences me to buy a green or organic product.

- H2: The price influences me to buy a green or ecological product.
- H3: Taste influences me to buy a green or organic product.
- H4: Safety influences me to buy a green or ecological product.

This research aims to obtain information about the motivational factors and the intention of consumers to buy and consume organic products.

For quantification and statistical analysis, we surveyed 540 respondents, based on a questionnaire developed and distributed, as a study sample.

The questionnaire includes 19 closed and open questions.

To achieve the research objective, the quantitative method was used.

The questionnaire was constructed using the Likert scale.

The Likert scale is a scale used in psychometry for measurements performed using questionnaires.

RESULTS AND DISCUSSION

The analysis section describes the analytical position of the research.

The analysis of respondents' responses indicates a positive awareness of consumers about the intention to buy and consume organic products.

Respondents aged 18-25 are more likely to consume organic products daily compared to other age groups.

The profile of the consumer of ecological products is represented by consumers, women and men, with higher education (44.4%), students (59.3%), with incomes over 2,000 lei (46.3%) and with an age between 18 - 25 years (64.81%).

If we carefully analyze the data in Figure 1, we can see that we have a category of respondents who responded with "I do not know" which influences us quite a lot in the accuracy of the results.

These respondents are in the age category between 18 and 25 years, students with an income of over 2,000 lei.

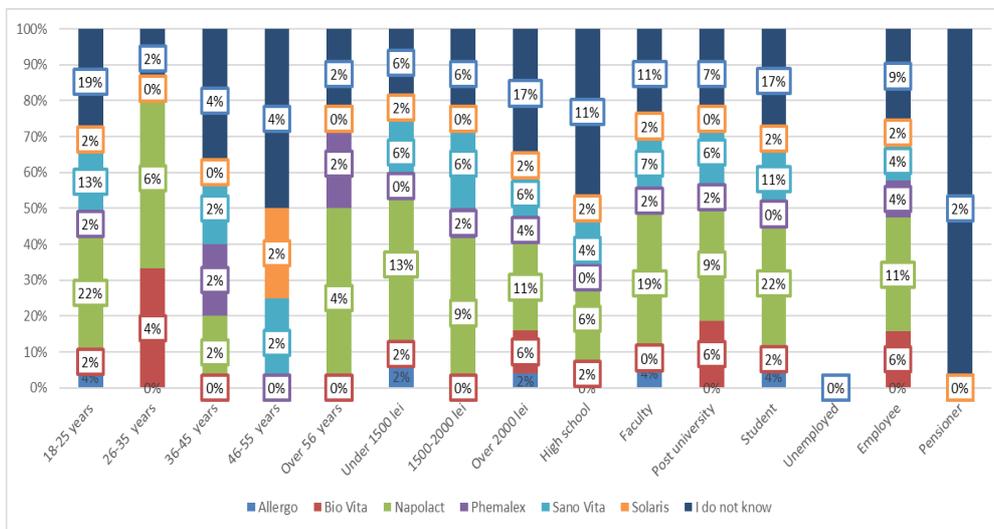


Fig. 1. Consumer profile according to the brand preferred by consumers

Table 1 shows that all variables are important and can influence the consumer when he intends to buy organic products.

Table 1

Variables that influence the intention to buy and consume

	1	2	3	4	5
The "ea" logo influences me to buy a green or organic product	20	90	160	130	140
The price influences me to buy a green or ecological product	40	10	40	100	350
Taste influences me to buy a green or organic product	60	30	100	110	240
Safety influences me to buy a green or organic product	30	60	140	200	110
Intention to buy and consume organic products.	20	60	200	70	190

1. total disagreement; 2. disagree; 3. neither nor; 4. agree; 5. totally agree

The correlation analysis was performed between independent and dependent variables, using the Excel - Data Analysis program (Pallant, J., 2007).

Intentions to buy and consume organic products are the dependent variable (y) and the price, taste, safety and the "ea" logo are the independent variables (x).

The correlation between the price of organic products and the intention to buy and consume presents a linear and direct connection between the two variables ($r = 0.541$, $r = \sqrt{0.2923}$)

The correlation between the safety of organic products and the intention to buy and consume shows a linear and direct link between the two variables ($r = 0.402$, $r = \sqrt{0.1616}$)

The correlation between the logo "ea" and the intention to buy and consume (Figure 2) has the largest linear, strong and direct link between the two variables ($r = 0.838$, $r = \sqrt{0.7033}$)

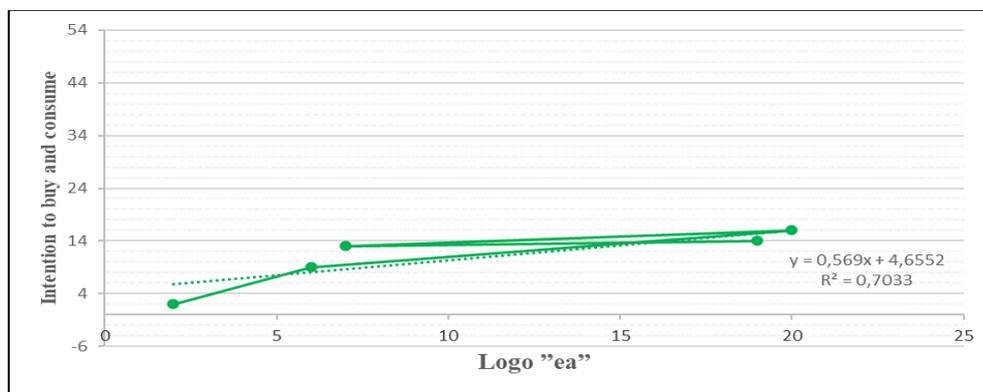


Fig. 2. Intention to buy and consume

The correlation between the taste of organic products and the intention to buy and consume presents a linear, strong and direct connection between the two variables ($r = 0.684$, $r = \sqrt{0.4686}$)

If we analyze the correlations between variables, we notice that the strongest direct correlation is the logo "ea" and the intention to buy and consume, correlation coefficient 0.838, and the weakest correlation exists between the safety of organic products and the intention to buy and consume, correlation coefficient 0.402.

The correlation analysis, performed between the purchase and consumption intentions of organic products (dependent variable) and the logo "ea" (independent variables) indicates a strong positive linear correlation (value of r close to +1), and verifies the two necessary conditions to linear regression analysis, respectively, the link between the purchase and consumption intentions of organic products and the logo "ea" is linear, and the effects of each variable are independent of the others.

We will describe the linear regression between the logo "ea" and the intention to buy and consume, because the correlation analysis shows it is the strongest direct correlation, $r = 0.838$, and $p = 0.017$, the significance level p is the lowest.

Table 2

Regression Statistics

Multiple R	0,827278152
R Square	0,68438914
Adjusted R Square	0,52658371
Standard Error	5,179471312

Table 3

ANOVA

	df	SS	MS	F	Significance F
Regression	1	116,3461538	116,346154	4,33691756	0,017272185
Residual	2	53,65384615	26,8269231		
Total	3	170			

The correlation ratio $R = 0.827278152$, shows us that between the logo "ea" and the intention to buy and consume there is a strong link.

R Square = 0.68438914 indicates that 68% of the variation in purchase and consumption intention is explained by the fact that the logo "ea" guarantees that the product, thus labeled, comes from organic farming and is certified by a control body.

The F test is calculated to validate the regression model.

Since $F = 4,336917563$, Significance F is 0.017272185, a value less than 0.05, indicates the regression model constructed valid for a probability of 95%, the correlation ratio has the value $r = 0.838$ (close to the maximum limit 1), therefore this variable largely influences the intention to buy and consume.

CONCLUSIONS

The logo "ea" and taste have the greatest influence on consumers in the purchase and consumption decision, an aspect confirmed both by the calculation of the Likert scale score and by the statistical analysis of the results.

The correlation between the logo "ea" and the intention to buy and consume shows the highest positive correlation ($r = 0.838$). The correlation result and multiple regression analysis demonstrated a positive relationship between these two variables. Therefore, the result supports the H1 hypothesis.

The correlation between the price and safety of organic products and the intention to buy and consume is positive ($r = 0.541$; $r = 0.402$).

The price and safety of organic products have proven to be less influential on consumers in terms of the intention to buy organic. The result of the analysis supports the hypotheses H2 and H4.

The correlation between the taste of organic products and the intention to buy ($r = 0.684$) describes a strong relationship between these two variables. Therefore, the strong relationship between attitude and intention indicates that the H3 hypothesis is accepted.

Analyzing the above data, all hypotheses were accepted, but the biggest influence on the purchase and consumption intention has the logo "ea" which guarantees that the product, thus labeled, comes from organic farming and is certified by a control body.

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SELECTIVE MEDIA FOR THE ISOLATION OF THE STOOL YEASTS

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Abstract

The fungal infections and especially those determined by yeasts have grown significantly in the last years. The appearance of the conflict between the yeasts and the host is favored by a series of endogen or hexogen factors that either induce the host an immunosuppression condition or modifies the quantity of the existent report between the yeasts and the other categories of microorganisms. The microscopic exam follows the presence, the form and the dimensions of the yeast formations: blastopores, pseudohyphae, hyphae, arthrospores eventually. Details like the presence or absence of the capsule, the method of sprouting will be apprehended as important aspects for the future identification. For the patients under antifungal treatment it is possible the highlighting of the yeast in the microscopic exam in the absence of their growth on culture media. The cultivation of the pathologic products is made on agar Sabouraud with Chloramphenicol and Gentamicin, medium that inhibits the multiplying of the contaminated bacteria and allows a good development of the yeasts.

Key words: fungi, endogen, capsule

INTRODUCTION

Fungi are a wide group of microorganisms, differentiated enough of other forms of life in order to be considered as a different universe. They are eukaryote cells that possess a nucleus with a nuclear membrane and a cell wall made of polysaccharides, polypeptides and chitin. They have heterotroph nutrition and they live as saprophytes, parasites or commensals, for a wide variety of organic substrates. Their structure can be unicellular, as is the case of yeasts, or multicellular, observed in cells that are elongated in order to form filaments or hyphae. They are divided through a transversal wall, called septum. Some fungi have a very tight septum for this reason they are called asepted. The filaments create a structure called mycelium. Some fungi present both forms of growth and as a consequence they can exist either under the form of yeasts, or in the form of filaments, depending the temperature. The phase of yeast is created in the host tissue and in the culture developed at

37°C, and the phase of mould is observed in the cultures developed at temperatures between 25-28°C. These fungi are called dimorphs. There are still microorganisms that produce also yeasts and filaments so that the two forms can coexist and their appearance is not necessarily determined by the temperature. These fungi are called polymorphs.

Nystatin, discovered in 1951 was the first polienic antifungal used with success under topical and oral form in the treatment of candidiasis. Nyfamycin and amphotericin B, used in the treatment of systemic mycoses, are also part of the category of polienic antifungals. Griseofulvin, antifungal administered orally and produced in 1959 from *Penicillium griseofulvum* proved to be efficient for the dermatophytes. It is used in the treatment of superficial mycoses, especially in the dermatophytes of the hair. The introducing of the asolic antifungals has marked the development of the dermal therapy. The asolic derivatives are distinguished by their wide range of action, being active on dermatophytes, yeasts and a large part of the pathogen mould for human. In 1969 it appeared under the denomination of imidazolic derivatives: clotrimazole and miconazole, followed by econazole and ketoconazole used in the local treatment of cutaneous mycoses. Ketoconazole was the first systemic antimycotic with wide range from this group. The systemic treatment of mycoses had an important ascension once the fluconazole and itraconazole were discovered, antifungal from the triazolic derivatives group.

MATERIAL ȘI METHOD

We accomplished a prospective study, based on the microbiologic diagnosis registered in the bacteriologic register of the laboratory of medical analysis, S.C. Diaser, Oradea.

For the performing of the study we used also the archive, registered in the specific program of the computer from the laboratory of S.C. Diaser, Oradea, in the computerized data base of the unit, respectively.

Necessary materials for the performing of the examination:

- A recipient of collection (collection recipient with collecting spoon) with transport medium
- Wooden spatula
- Latex gloves

For the collection of fecal matter it has to be collected a sample of fecal matter of 5-10g introduced in the collection recipient of fecal matter with transport medium. If the stool is liquid, it will be collected 5 ml. It is recommended to be chosen a liquid, mucous and bloody portion, if there is one. Don't collect quantities larger than 10g because it will reduce the chances of isolating the pathogen bacteria.

Considerations of pre-collection:

- 8 days before the collection of the sample, don't take antibiotics or antiparasitary medicine.
- The diet is not necessary.

Collection and transport of the samples

In regard to the collection, it has to be done as close to the beginning of the disease and before the initiation of any antimicrobial treatment.

- Collection from the stool emitted spontaneously – is preferable and is indicated in all the forms of acute diarrhea when the emission of fecal matters is frequent.
- For bacterial and parasitary examinations, the collection is made with the “spoon” of the collection recipient, concerning the liquid parts and especially, the mucous and/or bloody one, if there are. The volume of the collection has to be of minimum 5 ml or 3-5 cm³, if the stool is formed.
- For isolations or virusologic exams is collected 5-10 cm³ **fecal matters or minimum 5 ml, if the stool is not formed.**
- Rectum collection – is recommended in:
 - Chronic shigellosis where the curettage of the rectal mucous with the probe or with the tampon offers greater chances to isolation;
 - The investigation of the bearers of Shigella and Salmonella, with the exception of those of S. Typhi.

For this type of collection are used Nelaton probes (nr.14-16) or adequate tampons, thus: with the tampon, soaked in isotone saline solution (not to use lubricant gels) is penetrated the anal sphincter by slow rotation, introducing intra rectum approximately 15 cm. It will be proceeded identically also with the Nelaton probe, to which is adapted a syringe (10 ml) with which are made 1-2 aspirations. After collection, the probes and tampons are introduced in sterile recipients that contain preservation medium, are labeled correspondingly and are sent to the laboratory.

The **transport** of the samples and their processing is made in maximum 1 h, if they were collected in recipients without transport medium (with transport at room temperature), or they can be kept up to 24 h at room temperature, if they were collected in recipients that contain Cary-Blair transport medium that assures a good durability of the bacterial intestinal pathogens. An exception to these rules is the samples collected in the suspicion of infection with Shigella spp, very sensitive bacteria that need seeding from the media of culture immediately after collection.

For the viral etiology the samples that are not processed immediately have to be kept at – 70°C.

Isolation of the yeasts

Microscopy

- on colored gram smears is followed the presence of yeasts in large and predominant quantity compared to the diminished fecaloid bacterial flora.
- it is decisive for the cultivation of fecal matters for the isolation and quantification of yeasts.

The cultivation on Sabouraud medium with Chloramphenicol, with observance at 48–72 h.

In order to establish the mycotic etiology of the diarrheic syndrome it will be performed the quantitative exam of the yeasts, the determination of the units forming mycotic colonies per g or ml of fecal matters, respectively, significant quantity being a number of $>10^9$ UFC/g or ml of fecal matters.

RESULTS AND DISCUSSIONS

On the culture media the yeasts of medical interest are developed in 49-72 hours of incubation, in some suspicious diagnoses the period of observance being prolonged up to 7 days. The temperature of incubation after the seeding is in congruence with the anatomic area of provenience of the sample: 36-37°C for the internal and deep samples or of 30°C for the superficial samples. After the obtaining of primo culture it is necessarily verified its purity, because the bacterial contamination compromises the further phase of identification of the species. For this purpose are performed gram colored smears that will be examined under the microscope with the immersion objective. In case of the presence of bacteria there are replications made for the purification of the culture.

Usually it is made with the help of a standard biochemical system based on the fermenting of 7 sugars and an enzymatic test. With the help of this system you can identify the following species: *Candida* spp., *Cryptococcus* spp., *Trichosporon* spp., *Saccharomyces cerevisiae*, *Rhodotorula*.

The microscopic aspect is decisive for the cultivation of the stool in order to isolate and quantify the yeasts. Always colored intensely gram-positive, depending on the taxonomic group, they have different forms, of spherical or oval yeasts disposes in moniliform piles or chains most often branched. The disposing and morphology suggests the species, for this reason the microscopy of the sample and afterwards of the isolates is essential in the mycological examination.

The isolation of the yeasts was made by cultivation on agar media that include inhibitors for bacteria. The previous phases of the cultivation are identical to those for the bacteriological investigation, with the mention that the collection is made always from a stool emitted spontaneously.

Although there were considered lots of media, in the literature there are a few specifications to the isolation of the fungi from fecal matter.

In table 1. are presented two selective media recommended for the isolation of the yeasts from products with bacterial flora of rich association. Both are versions of the Sabouraud medium supplemented with mixture of antibiotics inhibitor for the aerobe bacteria from fecal matter.

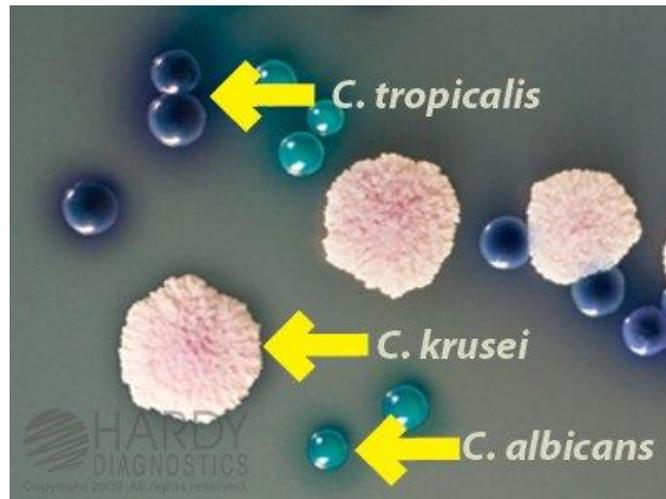


Fig.1. Specific colonies for *C. Albicans*, *C. Krusei*, *C. Tropicalis*.

Table 1.

Selective media for the isolation of the stool yeasts

Medium	Abbrev.	Nutritive constituency	Selective constituency	Incubation at 25°C or 35°C
Sabouraud	Sabouraud CCG	Glucose Bactopeptone NaCl Agar	Chloramphenicol Cycloheximid Gentamicin	Selective for <i>C. albicans</i>
Sabourand with dextrose Chloramphenicol	Sabouraud DC	Glucose Neopeptone Agar	Chloramphenicol	Selective for fungi

The Sabouraud CCG medium is highly selective allowing the development of only *C.albicans*. The version Sabouraud DC is less inhibiting, allowing the development also of other yeasts, so it has a wide utilization.

In order to incriminate the mycotic etiology in an diarrheic syndrome it is necessary a quantitative examination of the yeasts, the determination of the number of units forming mycotic colonies (UFC)/g or ml of fecal matter, respectively, and identification of the respective yeasts.

From the initial suspension of fecal matter, in isolated saline solution, are made dilutions 10^{-2} and 10^{-3} (respectively 10^{-3} and 10^{-4} from the product), of which, 0,2 ml is seeded on a plate of Sabouraud DC by flooding. Also from the initial suspension are made dispersions with the loop on Sabouraud CCG.

The preliminary identification is based on the characteristics of colonies and on the microscopic characteristics (form, dimensions, presence of capsule).

Candida albicans has a major role in mycotic etiology of the diarrheic syndrome. The presence especially in immunodeficiency represents one of the frequent intercurrent infections in AIDS. Aspects of cultivability of *C. albicans* are characteristic on agar Sabouraud CCG, being the only yeast that is developed on such a degree of selectivity.

The study regarding the “Immobilization of the filamentous mushrooms. A new frontier in the production of organic acids” highlights some fungal metabolites, primary or secondary, and enzymes and other products of biotransformation of fungal origin that play a strategic role in many technologies and especially in processing the food. Among these, the organic acids seem to be of major interest. The citric acid is already produced in more than 3 tons / year and the demand on the market for other acids, as it would be the gluconic, lactic and malic one, is in continuous increase. This revision is dedicated mainly to the most recent progresses in the production of organic acids from the systems of immobilized fungal cells. The production of fumaric acid by immobilized *Rhizopus arrhizus* is reported as case study. In fact, the fermentative production of this acid, which was for a long time abandoned from economic reasons and replaced with the direct chemical synthesis, would benefit largely by the utilization of a technology reliant on immobilized cells.

CONCLUSIONS

1. The microscopic exam follows the presence, the form and the dimensions of the yeast formations: blastopores, pseudohyphae, hyphae, arthrospores eventually. Details like the presence or absence of the capsule, the method of sprouting will be apprehended as important aspects for the future identification.
2. On the culture media the yeasts of medical interest are developing in 48-72 hours of incubation, in certain diagnosis suspicions the period of observance being prolonged up to 7 days.
3. The temperature of incubation after seeding is in concordance with the anatomic area of provenience of the sample: 36-37°C for the internal and deep samples or of 30°C for the superficial samples.
4. The Sabouraud CCG medium is highly selective allowing the developing only of *C.albicans*. The Sabouraud DC version is less inhibiting, allowing the development also of other yeasts, having a wide utilization.

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THE INCIDENCE OF TRICHINELLOSIS IN HORSE MEAT AMONG BIHOR COUNTY

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Abstract

Trichinella is a special parasite among nematodes, in that it carries out a complete biological cycle, from larva to adult and then from adult to larva, in the body of a single host, which has a special influence on the epidemiology of trichinosis as zoonosis. When the cycle is complete, the muscles of the infested animal become a reservoir of larvae capable of long-term survival. Humans and other hosts become infected through the ingestion of muscle tissue containing viable larvae.

Key words: trichinella, parasite, zoonosis, horses

INTRODUCTION

In humans, the disease caused by *Trichinella* is initiated by eating raw or semi-prepared meat containing viable larvae. A classification of clinical course, ranging from asymptomatic to severe trichinosis, has been suggested by Kassur et al. (1978).

Starting from the initial number of ingested larvae, the clinical signs may be absent or very severe. But the evolution can be influenced by the immune status and possible previous infestations of the host with *Trichinella*.

Clinical manifestations also appear to be influenced by various *Trichinella* species. From a clinical point of view, trichinosis is divided into two phases, intestinal and extraintestinal.

The infesting larvae, released from the muscle cysts by digestion in the stomach, reach the small intestine. There, within two days, they penetrate the intestinal epithelium, develop through four larval stages, mature, and mate.

After 5-6 days from the infestation, the females begin to lay live larvae, a process that in humans seems to take several weeks. Most newborn larvae migrate into their own lamina, reach the lymph nodes and circulatory system, and are then transported to other tissues.

Symptoms may be absent, or may appear 1-7 days after infestation, but are nonspecific. Diarrhea and abdominal cramps predominate, sometimes accompanied by nausea and poor general condition. There may appear loss of appetite and weight loss. Studies show that diarrhea can sometimes last up

to a few weeks, but the opposite has also been observed, ie the almost total absence of gastrointestinal symptoms.

These different responses can be attributed to different *Trichinella* species.

MATERIAL AND METHOD

The study was conducted on a number of 250 horses, between January and June 2021 in the commune of Girişu de Criş no. 475, at the Domcol International slaughterhouse.

Horse slaughter took place in this slaughterhouse. Samples of meat from each animal were collected from the slaughterhouse at the time of slaughter. These samples were later transported to the laboratory in Oradea LSAVSA Bihor.

The method by which the meat samples were examined was artificial digestion. The digestion method has quickly replaced the microscopic procedure in most countries where inspection in the direction of trichinosis is performed.

This method, introduced about 15 years ago, involves the artificial digestion (pepsin-HCl) of collective diaphragmatic tissue samples in order to reduce the number of samples and the time required for the examination.

In general, a collective sample consists of 100 individual samples of 1 gram each. To increase the efficiency of the method, special equipment is currently used (eg Trichomatic* 35, Stomacher*).

RESULTS AND DISCUSSIONS

Of the 250 horses that were slaughtered and entered this study, the results of the artificial digestion method were amazing, namely of the 250 horses all tested negative for *Trichinella spiralis* by the method mentioned above. Epidemiology and control of synanthropic (domestic) trichinosis can not be underestimated.

There is compelling, although indirect evidence that stray cats and dogs and wild animals on the farm can be important reservoirs of *T spiralis* infestation and can reintroduce the parasite into a herd of horses if greater attention is not paid to preventing exposure.

Veterinary and sanitary-veterinary authorities have enough means to organize and carry out continuous surveillance programs. Such programs allow the identification of infested herds and make eradication attempts possible.

National surveillance may be carried out based on the results of the post-slaughter control and following the reverse route to the farm of origin.

CONCLUSIONS

1. Strict compliance with the provisions on residual feedingstuffs, in particular the need for thermal sterilization (100° C for 30 minutes).
2. Strict rodent control.
3. Prevention of animal contact with carcasses, especially pigs and rodents.
4. Prompt and appropriate disposal of carcasses of pigs and other animals (e.g. burial, incineration, or heat treatment). This reduces the risk of infestation for commensal wildlife.
5. Creating effective barriers between horses, wildlife, and even other domestic animals.

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THE PRODUCTION AND CONSUMPTION OF FOOD DURING THE COVID-19 PANDEMIC

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Abstract

The COVID-19 has created major difficulties on the economy of many sectors of the industry, on the health and agriculture. The insecurity created once the pandemic came has led to changes on the behavior of consumption and on the preferences of the consumers. The agri-food sector was one of the most affected due to the appearance of the restrictions, affecting the commerce with food products by limiting the circulations of the persons and the decrease of the imports but also by increasing the prices to the main consumption products. Beside all these, the producers and the consumers have adapted very quickly to the restriction imposed, thus increasing the online commerce, obliging the producers to increase in an alert rhythm the production capacity. Also in this period the consumers were more careful to the nutritional value of the purchased products, the quantity ordered once the uncertainty of the place of work appeared.

Key words: food, food sector, pandemic Covid-19, SARS-COV-2

INTRODUCTION

The Romanian agricultural sector has the greatest percentage of the total number of place of work in the countries of the European Economic Community. Beside all these, this quota has decreased constantly but the value of the agricultural production has known a considerable growth in all the sectors in the last 10 years. The structure of the Romanian agriculture is the following: around 66% of vegetal production, approximately 25% is represented by the animal production, the processing represents approximately 8% and the last 1% represents the production of agricultural services [6].

The Covid-19 pandemic has generated difficulties without precedent for the global economic system, for the assuring of its operational fluency and financial sustainability, for the assuring of the labor from the sectors where the activity was unable to be interrupted and also for the activities from agriculture.

As an effect of the beginning of pandemic, in a short period of time, have appeared the threats of depreciation of the national currency in relation to the Euro, the increase of the number of unemployed persons, the abrupt decrease of the income, the impossibility to pay the rates or the due invoices, then the uncertainty of the access to the basic food products because many

have disappeared from the market for weeks (flour, pasta, rice, canned food) and moreover, the buying capacity has entered in a breakdown for numerous goods of long use. For the Romanian people the effects of the new crisis was felt initially by the general anxiety towards the unpredictable, by the perspective of the appearance of new risks and problems – the loss of the income of the population, the closing of the great companies or the small business, it appeared the problem of taking care of the children that couldn't go to kindergarten or to school anymore, it had to be solved somehow the problem of the numerous families, to isolated the vulnerable ones or even the people already infected etc. The isolation in an undefined period of time in the houses seemed somehow preferable to going to the place of work intensively exposed to the risk of contamination [5]

Also, in some villages, the pandemic caused a wave of governmental policies that accentuated the premises of the food crisis.

The uncertainties regarding the availability of the employees from the agriculture and the uncertainty related to the agriculture harvest from an year with extreme drought, cause the wave of restrictions on the export of food, which facilitated a first phenomenon of shortage on the global food market.

A common communication of FAO, WHO, WTO remarked also the slowdown of the circulation of the employees from the agriculture industry and the food industry that blocked numerous agricultural sectors in the West but not only, and the delays at the borders of the transports of goods has affected the rhythm of the supply of the internal markets [3].

Some countries have suspended the exports of cereals in order to prevent the absence of the goods and the livelihood in the internal market or the fast increase of the prices, which created pretty large psychological pressures on the market of the dependent importing countries.[2]

On the global level was structured an initiative with the center of attention of the possibility to avoid a major food crisis, caused by the measures of forbidding the exports by some exporting countries – against the preoccupation for the local food security.

The pandemic has already underlined the fragility of the international chains of supply for the essential products as the food products and for other products and many governments have reevaluated the security of the internal food stocks.

In March, more than 10 countries have already imposed restrictions on the export for the products as buckwheat, onion, garlic, vegetable, eggs or beans. Romania has launched the idea to forbid the export of cereals but the government did not put into practice this measure.

In this context, a group of 50 countries members of the WTO have proposed the signing of a commitment to assure the correct functioning of the global supply chains and to avoid some measures of restricting the trade [5]

MATERIAL AND METHOD

The basis of this paper is the quantitative analysis of the data on the level of the food sector and the qualitative analysis of the perspective collected from the literature. At the end of the study regarding the statistical data and of the present situation from the country, was analyzed how the COVID-19 pandemic impact had specific consequences on short and long term on some sectors of the agri-food industry.

RESULTS AND DISCUSSIONS

The shock of the fast spread on the global level of the infection with COVID-19, beside the direct threat on the life and health of the population, has changed fast and radically the behavior of purchase of the population, including in Romanian, concerning first of all the food sector but also the pharmaceutical one. The population began to create small stocks of products necessary for the surviving during the isolation in their own houses. In the first two-three weeks of panic, a series of basic products have disappeared from the stores: flour and pasta, rice, corn meal, canned food and meat refrigerated products, fish, vegetables etc. [5]

The change of the method of supply of the population by purchasing products on the internet became larger and larger. The absence of numerous products from the physical stores has determined the orientation of a part of the population to online purchase, in case of some products and food products (28%), products of personal hygiene and home products (15%), cosmetics (14,6%) or coffee or tea (14%) (Iacob, 2020). Among the goods that before the pandemic were purchased directly from stores and during the pandemic were purchased online are food products (48%), cloths, footwear and accessories (36%), coffee and tea (35%) and cosmetics (34%)[1]

During the state of emergency, the food trade was one of the economic sectors, which continued to function, because the supermarkets, hypermarkets and all the other similar units responded to the basic or essential needs of the consumers [1]

The WHO remarked the importance of a healthy diet that had to include 70-80% food of vegetal origin and only 60 grams of meat per day, because it had saturated fat; fish that had good fats, can be consumed in larger quantities.

In the daily basket can be included also: whole meal, branny bread, cabbage, pork liver, mackerel, cheese, onion, carrots, potatoes, beet and whole meal; the daily basket can be diversified with apples, rice, leek, other animal organs and a great variety of fish. The minimum basket of food consumption calculated in the Instituted of Research of Life Quality has as

basis the norms of consumption established by the nutritionist specialists from the Institute of Hygiene and Public Health.

These norms of consumption for an adult person and professionally active, who works in average conditions of physical and intellectual effort are of 2700 calories per day. The necessary products for the daily consumption are: meat and derivate of meat, milk and derivate of milk, oil, vegetables, potato, bean, apples, sugar and sweets in reduced quantity and coffee mentioned in the preferences of consumption for adults in our country.

In the middle of the pandemic of coronavirus, many of the food products have increased the prices. A monitoring accomplished by the Council of Competition in the period December 2019 – December 2020 shows that for many products the prices have increased with over 2 lei/kg, although in some cases there is no economical motivation.

The salami, the fresh tomatoes, milk and apples were the products that have increased most of all in March, compared to December 2019. There are still products whose prices have decreased as is the case of corn meal, onion, eggs or beans.

Thus, in case of the white bread of 300 grams, the price went on 23rd of March to 1,92 lei, while in December it was 1,4 lei, in January it was 1,8 lei and in February it was 1,6 lei. Also in regard to the intermediary sort of bread, of 300 grams, the price has increased from 1,44 lei in December to 1,93 lei in March according to the monitoring of the Competition Council. The price of white potatoes was on 23rd of March of 2,80 lei/kg, compared to 2,65 lei/kg in December 2019 and 2,73 lei, 2,71 lei/kg in January and February 2020, respectively. In the present, on the market the price of white and red potatoes has crossed more over the one indicated by the Competition Council, being on the cheapest markets between 4 and 4,5 lei/kg.

An increase of the price was seen also in the cow milk of 1,5% UHT. On 23rd of March the price for a liter was of 4,95 lei, while in December the price was 3,94 lei, in January was 4,10 lei and in February 4,46 lei.

The increase of the prices for the agri-food products was determined by the imports. The Romanian producers have green salad, green onion and radishes but nobody buys them, they are thrown away.

The supermarkets have reduced the demand from the Romanian producers and they prefer to bring from import. The price of a kilogram of yellow onion was on 23rd of March 3,06 lei/kg, compared to 3,23 lei/kg in December, of 3,09 lei in January and 2,96 lei/kg in February.

Until the end of March this product has also suffered a high increase, the price reaching to approximately 6 lei/kg. Also the fresh tomatoes have registered an increase in this period, reaching to an average price of 9,29 lei/kg on 23rd of March, with 2,23 lei more than in December 2019 and 1,56

lei more compared to February. Both products are brought now in this period from import.

The beans got cheaper, the price reaching to 10,67 lei/kg on 23rd of March, from 10,9 lei in December, 13,17 lei/kg in February and 11,55 lei/kg in January 2020. The price of Golden apples has increased from 3,77 lei/kg in December 2019, to 4,77 lei/kg in March 2020.

Another product whose price was monitored by the Competition Council was the salami, which also had an increase in prices. It reached to an average price of 28,83 lei/kg in March 2020, after in December 2019 was sold with 26,53 lei/kg, with 26,69 lei/kg in January and with 26,77 lei/kg in February.

In regard to the Victoria salami, the price had reached to 29,08 lei/kg, after in December it was sold with 27,07 lei/kg, in January with 28,56 lei/kg, and in February with 27,28 lei/kg. In this case, the explanation is that greatest part of the processed pork meat is brought from import and on the external plan the prices are increasing.

In case of the pork meat, only the only the sliced steak has registered an increase with 86 bani, from 20,25 lei/kg, in December, to 21,11 lei/kg on 23rd of March.

As for the rest the other sorts have registered a mild increase, but here we have to consider that in December we have the greatest consumption of the year. Also for the chicken only in the upper pulps was seen an increase, from 12,40 lei/kg in December, to 12,58 lei/kg on 23rd of March, while other sorts have registered decreases of price of up to 1 leu. The threat of the phenomena of drought has accentuated the effects felt.

The drought and the excessive temperatures can affect severely not only the agricultural harvest but also the health of the population, the energetic sectors of the economy and the natural environment in general. Or, for the most European countries, the winter months 2019-2020 but also the months of March and April were not only months of pandemic but also unusually warm and dry months.

The drought is a recurrent characteristic also of the European climate, it threatens the food security, increases the risk of disease and death that leads to the mass migration.

Numerous experts sustain that the record temperatures and the drought could increase the problems created by the SARS-COV-2 virus, moreover that there are signals of some genetic mutations of it (Thailand Medical News, 1 May, 2020). Even beside this (there are experts that affirm that the warm weather will diminish or even eliminate the impact of the infection with SARS-COV-2), but sill, on the global level, the periods of drought, as the uncontrolled forest fire on extended areas, increase the risks and manifestations already existent of the global food crisis [5]

CONCLUSIONS

The COVID-19 pandemic has disrupted significantly all the sectors from the agri-food industry from Central and Eastern Europe.

These disruptions, although they caused a great negative impact, they accelerated also the tendencies to which the industry should adapt no matter what.

In Romania, during the COVID-19 pandemic, the stocks of food were monitored daily. It was analyzed also the problems that the farmers and those from the food industry had, for the purpose of the fluidity of the activities of support for the supplying of the merchandise market. In many cases the government that considered the problem of freezing the prices to the basic food products and for some pharmaceutical products, but finally it led to the conclusion that if the prices for food were frozen, the first affected persons would be the small producers and processors.

The consumption of food in the beginning of the pandemic has registered a significant increase because of the fears of the population regarding the ending of the resources of food and not only, then, following a gradual decrease because of the stocks already made but also because of the increase of prices especially for the food. In 2020, in January the increase of the consumption prices was of +0,5%, similar to the value from 12 months ago (+0,49%).

In March, the annual inflation remained on the level of 3,05% as in February. The determinant factor was the increase of food prices (+1,46% in one month), compensated only partially by the decreasing of fuel prices.

The greatest increase of prices in March was on the sector of products with volatile prices, vegetables and fruits. The prices for potatoes and fresh fruits have increased the greatest $\pm 20\%$. The prices for some basic products, as bread, meat and milk have increased significantly.

The most important of these tendencies that appeared during the Covid -19 pandemic are the digitalization and the exchanging of the consumers' preferences.

Beside all these, different actors from the agri-food value chain have to be prepared for greater structural changes that will have impact on the sector, among which the climatic changes and stricter environment regulations.

To some extent, the pandemic is a preamble of these changes.

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