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CRITICAL ANALYSIS OF THE REFLECTION BY THE RESOURCES QUALITY AGRO-LIVESTOCK IN THE LABELING OF GENERATED FOODSTUFF

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SUMMARY

Nutritional labeling of food products is an important goal for ensuring the operation of a free market in both the European and adjacent area. The paper points out some limitations of European legal provisions in connection with the legislation of the countries geographically located in the Black Sea area. It is reflected by concrete examples and analyzes about the quality of agro-livestock as resources underlying healthy food. It is shown some proposals and recommendations for to improve some modalities for to highlight the role of traceability in the food product profile.

Keys words: *Nutritional labeling, agro-livestock, quality, laws, food*

INTRODUCTION

The steps of the historical evolution of human civilizations are often presented in direct connection with the structures and forms of nourishment. The nutrition is the process by which the human body takes nutrients from environment that turns to secure the normal metabolic processes. Given the complexity of the nutrition it is needed a systemic approach. Throughout time it have revealed the factors which determined the food habits, food traditions, the evolution of the concept of food (transition from art to science) and especia-

lly agro-food problem, that are interconnected with other global issues (energy, environment) [10]. With the raising of the education and culture of the people it is changed the food choices. From the primitive man concern to procure food for to survive, it came to the multiple scientific approaches to human consumption, with the course of action, especially geared towards food consumption according to the desire of the right man at the right time. The daily food consumption should be directly correlated with the particular condition of the body, on both: age and health characteristics of the individual. [2]

The nutrition problem concerns increasingly more the global population, manifesting learning and understanding in environments need more broad general principles of food science, the necessary nutrients for the body, food groups and their share in rational nutrition sources pollution of food, aiding the risks assumed by eating the wrong foods. The population is fed from the market, based on the information read on the food labels [4], [6], [13]. The ability to track freshness data in transit and storage of food products through indicator labeling can be useful in reducing potential food hazards from reaching consumers [10].

For a better producer-consumer communication is deemed necessary to critically analyze of the food labels of trade, especially in relation with the providing more accurate information about the natural origin, from the primary agroalimnetar fund. At the same time the critical analysis targeting the insofar as it complies with current EU directives on food labeling, with details about the traceability. [2], [14]

METHODS

This critical analysis of the labels was performed within the research contained in NUTRILAB project (2012- PEOPLE- FP7- IRSES, 318,946 - NUTRILAB, Nutritional Labeling Study in Black Sea Region Countries project), where it is confirmed a lot of existences of negligence in the labels of the foodstuff by some manufacturers and many problems of the joint knowledge and understanding of nutrition labeling messages by the consumers. [14]

It were analyzed over 786 labels of foods which are in the markets from the countries nearly the Black Sea, especially from Bulgaria, Moldova Republic, Romania, Russian Federation and Ukraine. It was tracked the compliance with the directive 2000/13 / EC, which gives to the consumers the opportunity to obtain on the food label all essential information concerning the composition, manufacturer, methods of storage and preparation, the existence of the content of substances known as allergens and other things that can harm the consumer and so on. In accordance with European Regulation (EC) No 1924/2006, these foodstuffs could be accepted in the markets if the information from the labels could be well understood by the average consumer. [1], [2], [14]

For consumer consultation was launched and a questionnaire in these five countries, which is also in the online version on web-site www.nutrilabproject.eu. [14].

The labels were collected from different commercial areas from these 5 countries, between May 2013 and September 2014. The labels were selected from different categories of foods. The data are registered in Table 1.

Table 1 Data extracted from the analyzed labels

Country		Bulgaria	Rep. Moldova	Romania	Russian Federation	Ukraine	TOTAL
Labels	<i>No</i>	134	127	184	168	173	786
from which:	%	17,05	16,16	23,41	21,37	22,01	
labels with details about manufacturer	<i>No</i>	108	92	162	126	122	610
	%	80,60	72,44	88,04	75,00	70,52	77,61
labels with details about resources	<i>No</i>	46	36	76	57	50	265
quality agro- livestock	%	34,33	28,35	41,30	33,93	28,91	33,71

The comparative situation can be seen also in the graphs of the figure 1.

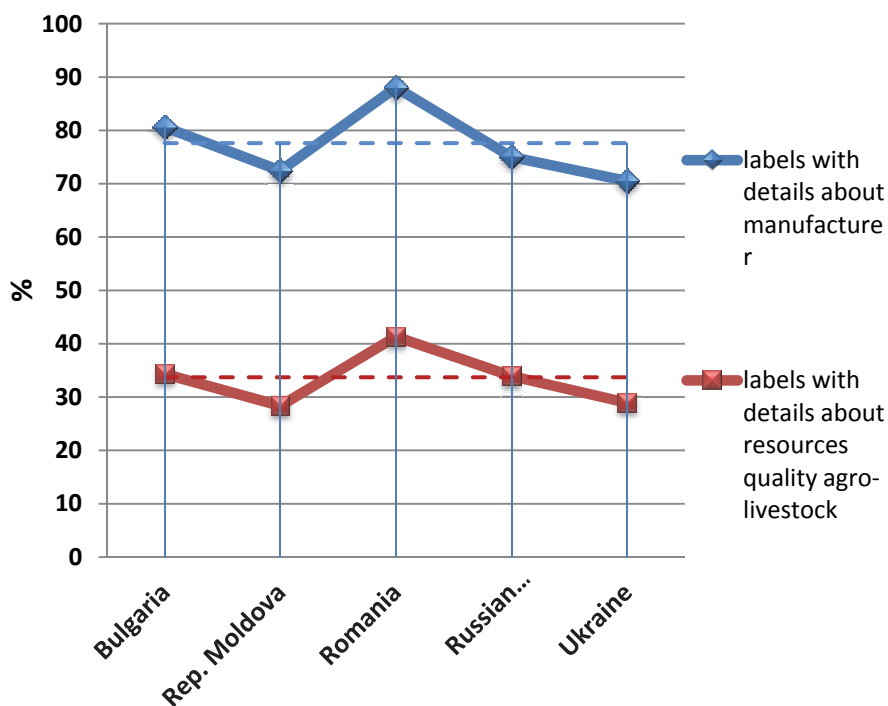


Figure 1- Graph with a comparative situation on countries about labels analyzed.

The labels were studied by mixed teams of specialists, aiming at several aspects about the extent to which there is compliance with European rules and with laws into force, existing in the country where that are on the market, and also about the compliance of the principles of nutritional labeling. [14].

RESULTS AND DISCUSSION

After critical analysis of samples collected from the labels from these 5 countries is noted an aspect of transition to an optimum system, more accurate better for the consumers with enough information on the structural characteristics and about the quality of food purchased. In countries such as Ukraine, Moldova and Russia is still a more lenient legislation for domestic markets, but are not good for international rules, are unaligned at EU regulations about the movement of food, so many autochthonous manufactories still producing not mentions the complete data on the labels. Even food markets from Bulgaria and Romania, there are still manufacturers, especially for domestic (below 20%) that do not provide complete data.

The deeper problem is the lack of details about the origin of food, only 33.71 % (average) manufactories mentioning the cases data quality about the raw materials of agro-livestock.

The identification through labels the origin of feed and food ingredients and food sources are of prime importance for the protection of consumers. Therefore the Regulation EC/178/2002 defines traceability as the ability to trace and follow food, feed, and ingredients through all stages of production, processing and distribution. The Regulation contains general provisions for traceability (applicable from 1 January 2005) which cover all food and feed, all food and feed business operators, without prejudice to existing legislation on specific sectors such as beef, fish, GMOs etc. [1], [8] [10] [11] [14]

Although over 70% of the labels have mentioned most features on the principles of nutritional labeling of food, and the product's country of origin, these have not said enough details about harvest characteristics of the plant, or about animal healthy wich are at the origin of the foodstuffs. (Figure 2)



Figure 2 The reflection of the resources quality agro-livestock in the labeling of generated foodstuff.

After some discussions with some food producers it is known that benefit some data about the raw materials purchased, but keeps them in institutions without put these on the labels for to inform the consumers. These data are available to authorized institutions with food control, just in cases when it is found defective or unpleasant effects on consumers of finished products. (methoxy-food infections or other illnesses). This aspect considerably reduces food safety.

The traceability facilitates the withdrawal of foods and enables consumers to be provided with targeted and accurate information concerning implicated products. The establishing of the security in the food chain is the goal of many EU regulations, but how companies achieve that goal is largely up to them. [2], [4] [5] [6] [13]

When placing a product on the market, the operator must transmit the following information in writing to the operator receiving the product an indication of each food ingredient produced from GMOs and an indication of each raw material or additive for feeding stuffs produced from GMOs.; If there is no list of ingredients, the product must bear an indication that it is produced from GMOs. [1], [7] [12]

Paradoxically, on the labels of some traditional products, prepared by family associations are given useful details about the history of foodstuff, even some therapeutically indications, but lacks details about the nutritional value, the presence in food of ingredients or validity terms and so on.

CONCLUSIONS

Now, there are many technical solutions for product ID systems. They include bar coding and imprinting tools that use tracking numbers to link finished products back to specific data relating to their production history. [13], [8]

It is necessary to make a combination between the traceability principle and the labeling therefore for to obtain more than a tracking and recovery tool, including some tools such as environmental monitors and product scanners that link information back to sophisticated data storage systems, which gather and organize product data so that it can be easily retrieved for safety, security and quality assurance reviews or recall situations. [1], [3] [9]

Were found on all markets studied some food products manufactured by companies of international prestige, proving clearly the effects of globalization, but these products have an attractive packaging and labeling, with complete information to consumers, in accordance with all EU rules imposed. For a correct and healthy eating it must to educate the consumers in the sense of understanding and properties of the messages transmitted by labeling.

It is need a global process optimized, with more complex actions for aligning the legal provisions, same in all the countries, related to consumer communication of all details about the food.

It is also necessary a better protection for the clean and healthy food.

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REFERENCES

1. Directive 2001/18/EC on the deliberate release of GMO.
2. European Commission. Report of the Application of Directive 90/496/EEC on Nutrition Labelling for Foodstuffs. Brussels: European Commission, 2002.
3. Gaceu L. , Gadei G., Oprea O.B., Methodology for analyzing EU-conform label information content of meat products in Romania, Journal of Agricultural Informatics., pg. 1...6, 2014 Vol. 1, No. 4, Publisher:Hungarian Association of Agricultural Informatics (HAAI), ISSN: 2061-862X.
4. Popovici, C., Mija, N. Birca, A., Iatco I., (2013), Compliance with labeling legislation of the Republic of Moldova in the field of confectionery products, Acta Universitatis Cibiniensis Series E: FOOD TECHNOLOGY DOI: 10.2478/aucef-2013-0013, Vol. XVII (2013), no.2, pg.61-67.
5. Oprea, O.B., Gaceu, L. Gadei, G., (2013), Investigation methodology about labels information content of the meat products from Romania, in accordance with European Legislation, Agrárinformatika 2013 Nemzetközi Konferencia / Agricultural Informatics International Conference, pg. 7-11, (2013)
6. Stefanova, Y., Stefanov, S., Antova, G., (2014), *Do young people understand the information on Food Labeling?*, Journal of EcoAgriToursim Proceeding of BIOATLAS 2014 Conference Vol. 10, no.1 2014, pg. 129-132.
7. Tucu, D, Golimba, A.G., Slavici, T., Fuzzy methods in renewable energy optimization investments, In Proceedings of the 38 International Symposium on Agricultural Engineering “Actual Tasks on Agricultural Engineering”, Opatija, Croatia, 221-26 February 2010, ISSN 1333-2651, vol.38, pg. 455-462
8. http://ec.europa.eu/food/food/foodlaw/traceability/index_en.htm
9. http://europa.eu/legislation_summaries/environment/nature_and_biodiversity/l21170_en.htm
10. <http://www.foodsafetymagazine.com/magazine-archive1/december-2005january-2006/innovations-in-traceability-systems-and-product-id-tools/>
11. http://www.intermec.com/public-files/application-briefs/en/ab_Produce_Traceability_Labeling.pdf
12. http://www.gs1jp.org/2011/barcodes_identification/1_5.html
13. http://www.ictinagriculture.org/sites/ictinagriculture.org/files/final_Module12.pdf
14. <http://www.inkonit.com/blog/what-is-the-produce-traceability-initiative-or-pti-infographic/>
15. www.nutrilabproject.eu.