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INNOVATIONS IN SCIENCE AND EDUCATION:

CHALLENGES OF OUR TIME

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Tab. 4.

Results of the research on the effectiveness of antimicrobial action of the disinfectant "Kamorán" against microorganisms present in the diffusion juice.

Indicators	Concentration of working solution, %			
	0	0,01	0,02	0,04
The total content of microorganisms, CFU ml. / cm ³	2,4	1,46	0,97	0,7
The effect of disinfection%	–	39,2	59,6	70,8
Content of slime-forming bacteria, CFU ml. / cm ³	1,1	0,68	0,51	0,4
The effect of disinfection%	–	38,2	53,6	63,6

Tab. 5.

Results of the research on the effectiveness of antimicrobial action of the disinfectant «Kamorán» on slime-forming bacteria isolated from the factory «accumulation of dextran».

Indicators	Concentration of working solution, %			
	0	0,01	0,02	0,04
The total content of microorganisms, CFU ml. / cm ³	7,8	4,02	3,14	1,9
The effect of disinfection%	–	48,5	59,7	75,6
Content of slime-forming bacteria, CFU ml. / cm ³	6,5	3,8	2,9	1,95
The effect of disinfection%	–	41,6	55,4	68,5

Therefore, the results obtained by research disinfectant «Kamorán» is highly effective against most microorganisms present in raw materials and intermediates of sugar beet production.

Thus, the research results have shown that the products "Sanitarin", "Javel-Kleyd", "Hembar", "Biodez", "Nobak-enzyme", "Kamorán" have stable fungicidal and fungistatic effect against a broad spectrum of Micromycetes which are gray rot causative agents and lead to poor technological quality of sugar beet. In addition, these agents are also effective in inhibiting the development of slime-forming bacteria.

According to the results, there should be noted the high efficiency of selected products - "Sanitarin", "Javel-Kleyd", "Hembar", "Biodez", "Kamorán" on a wide range of microorganisms.

According to results of the experimental research, we can conclude on the feasibility of the aforementioned means for sugar beet processing for the purpose of disinfection.

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STRUCTURE OF NITROGEN FRACTIONS ORGANIC AND CONVENTIONAL COW'S MILK

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Raw organic and conventional cow's milk samples were analyzed for total nitrogen, non-protein nitrogen and milk urea content with the aim of evaluation of the different diets effect. Conventional milk contained higher level of total milk urea nitrogen as well as higher proportion in total nitrogen and non-protein nitrogen fraction. We detected that ratio of milk urea nitrogen to non-protein nitrogen is the most significant criterion for assessment of diet differences.

Keywords: organic, conventional milk, diet, nitrogen, urea.

Balanced cattle diet is an essential element of dairy farming. The optimum ratio of rumen degradable protein and energy for its digestion achieves the desired level of the metabolize protein concentration in the cow's small intestine and provides maintenance and the production of milk. If diet is unbalanced, the surplus of protein will deaminated in cow's liver and urea level will increase in blood plasma and milk. With the aim of evaluation of the effect of different diets at certified organic and conventional farms on the structure of the nitrogenous fractions of milk, we analyzed raw organic (n = 24) and conventional milk samples (n = 24) in the period

from April 2015 to April 2016. Total and non-protein nitrogen were measured by Kjeldahl method, the concentration of urea – by spectrometry method.

Table 1.

Parameter	Organic milk	Conventional milk
Total nitrogen (TN) g/100 g	0.499±0.030	0.469±0.043
Total protein, g/100 g	3.18±0.19	2.99±0.31
Non-protein nitrogen (NPN), g/100 g	0.028±0.012	0.025±0.010
True protein, g/100 g	3.01±0.17	2.83±0.25
Urea content, g/100 g	0.0261±0.0078	0.0322±0.0172
Milk Urea Nitrogen (MUN), g/100 g	0.0129±0.0036	0.0151±0.0080
NU/NPN, %	46.07	60.40
NU/TN, %	2.59	3.22

Analysis of diets has shown that during the indoor period (November-April), at organic farm diet consisted of 63.4% of organic hay and haylage, 19.8% of corn silage and 16.8% of concentrate feed. In the outdoor period (May-October) cows were grazed on pasture, the percentage of fresh grass was about 20% of the diet, the rest consisted of feed described above. Indoor period diet at conventional farm consisted of 28.8% of hay, 19.2% of beets and carrots, 28.8% of corn silage and 21.2% of concentrated feed. During the grazing the herd fed by alfalfa haylage (60%) and grazing. Results of the study with standard deviations are shown in Table 1. Conventional milk contained higher level of total milk urea nitrogen as well as higher proportion in total nitrogen and non-protein nitrogen fraction, that can be considered as consequence of less balanced cattle diet at the conventional farm (smaller percent of rough feed). It has been shown that NU/NPN ratio is the most significant criterion among other studied parameters for assessment of diet differences and hence for differentiation of milk from farms with different farming types.

