INFLUENCE OF SUSPENSIONS OF LACTIFYING BACTERIA ON THE PRODUCTIVITY OF VITIS VINIFERA PLANTS

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Abstract. *It has now been established that the antagonistic activity of a probiotic strain is associated with two of its properties: the ability to colonize the mucous membranes of the macroorganism, competing with a potential pathogen, and the bactericidal effect of metabolic products on competing cells. Lactobacilli include a large group of microorganisms that produce lactic acid as a result of the fermentation process. The main habitat of lactic fermentation bacteria is the soil around which cultivated plants, mainly grain crops, are concentrated. They occupy a leading position among many microorganisms of practical importance.*

Keywords: *lactic acid bacteria, colony, environment, Lactobacillus, Thermobacterium, Streptobacterium, Betabacterium, Bacteroides spp., Bifidobacterium spp., Enterobacteriaceae.*

Milk-fermenting bacteria include a large group of microorganisms that produce lactic acid as a result of the fermentation process. The main habitat of milk-fermenting bacteria is considered to be soil and cultivated plants, mainly cereal crops, are concentrated around them. They occupy a leading position among many microorganisms of practical importance [1].

The *Thermobacterium* subgenus includes bacteria that mainly produce lactic acid during fermentation and whose development temperature is 40-60 °C. [3] .

Streptobacterium subgenus also includes mainly lactic acid-producing species that develop at lower temperatures (25-37 °C). Betabacterium includes species that produce a large amount of volatile acids (acetic ant, carbon dioxide) along with lactic acid during the maturation of the younger generation. In general, the genus *Lactobacillus* can be described as follows. Lactose-fermenting bacteria are straight rods with rounded tips, varying in size from short (2-5 µm) to long (12-15 µm) and 0.5-1 µm wide. They are found singly, in pairs, or short chains. Inclusions with volutin grains characterize some species. Lactose-fermenting bacteria are inactive, sometimes forming a slimy capsule [4-3].

It multiplies by simple division and does not form spores. It is stained positively by Gram.

Lactose-fermenting bacteria grow well in an airtight environment and are facultative (conditional) anaerobes. When planted deep in a solid nutrient medium, it forms dense colonies of triangular and irregularly shaped lenses (lentil-shaped), thin, snowflake-like, or round cotton balls [4-6].

A chalk melting zone is formed around the colonies. 0.15-0.75% agar is observed to grow well in a semi-liquid nutrient medium. A low concentration of agar reduces the oxidation-reduction potential of the nutrient medium and creates microaerophilic conditions. M.Toom, A.Lantsner, M.Voronina, M.Mikelsaar distinguished 5 types of cultures according to the nature of their growth in a semi-liquid medium: growth in the form of a ball, in the form of longitudinal stripes, near the bottom, on the surface, and with uniform turbidity of the medium [2-5].

Materials and methods: *Lactobacillus plantarum* strains 8 P-AZ, L.pl 1 USA, local strains isolated from milk yogurt products, 219 a, 17 ch, 161 and *Lactobacillus plantarum* 41,42,

44, 45, 46, 47 isolated from sauerkraut derived strains. Pure cultures are stored in a lyophilized state in the laboratory museum.

Nutrient media where lactobacilli are grown. The standard for the cultivation of lactobacilli culture.

1-table

№	Substances released into the environment	Quantity
1.	MRS Soup (Hi-Media) is the next content	1 L
2.	protease peptone	10
3.	meat extract	10
4.	yeast extract	5,0
5.	glucose	20,0
6.	Twin-80	1,0
7.	Citric acids and ammonium	2,0
8.	Vinegar acid and sodium	5,0
9.	potassium phosphate	2,0
10.	magnesium sulfate ғ MgSO4 5H2O	0,10
11	manganese sulfate – MnSO4 7H2O	0,05
pH 6,5+ 0,2		

The nutrient content was used for recovery of desired cultures from freeze-dried samples and experimental studies. For the growth of indicator cultures, the nutrient media accepted by Hama - meat peptone broth (MPSh) and meat peptone agar (MPA) were used.

Food environments in which pathogenic microorganisms are grown

***Composition of milk prepared according to Davis (in 100 ml)*:**

1% solution of litmus 5 ml
1% glucose solution 5 ml
1% yeast autolysate 5 ml
CaCO3 is pre-sterilized and inserted into each test tube at the tip of the knife.
Skimmed milk up to 100 ml
MPB
Place 10 ml of the medium in test tubes and sterilize for 30 minutes under 1 atm pressure.

To prepare a 1% solution of litmus, 1 g of litmus is dissolved in 100 ml of alcohol at 96 °C and kept in a thermostat for 2 days (it is shaken frequently and the alcohol is changed after 1 day). After 3 days, the alcohol is poured. A part of the indicator that is very sensitive to changes in the reaction of the environment remains in the precipitate. The precipitate is dried in a desiccator, added to 100 ml of distilled water, and left to stand for 3 days. Then the precipitate is shaken well, filtered on a paper filter, and the filtrate is sterilized at 1 atm for 30 minutes.

A method of studying salt resistance of milk-fermenting bacteria. The research cultures were planted in MRS broth (rN 6.8-7.0) in the amount of 8-10 ml of one loop, sodium chloride was added in the amount of 2%, 4%, 6.0%, and 8%. Inoculated cultures were kept at 37 °C in a thermostat for 24 h. Growth of the cultures was judged by the presence or absence of turbidity in the visual test tubes and also observed under a microscope.

In this study, the rooting mechanism of vine cuttings is somewhat perfect and late in rooting compared to other plants. In our country, in the agrarian sector, plant treatment using biological suspensions, and various pest control measures are being promoted. To date, the entire world

assembly is against chemical fertilizers. Bacterial suspensions are absorbed by the plant through its roots and delivered to the cells of each tissue.

It is recommended to feed the vine twice during the growing season: the first time 15-20 days before flowering and the second time 15-20 days after flowering. The rate of such fertilizing is two times less than that of the main fertilizing. It is necessary to take into account the condition of vine bushes during additional feeding. If the vine has grown strongly, it is not necessary to apply azatabacter biological suspension.

To increase the yield of seedless varieties of grapes, biological suspensions with gibberellin synthesized by microorganisms are recommended. Under the influence of gibberellin, the fruits grow 2-2.5 times and the yield increases by 50-70%. Flowers are processed during flowering or 3-5 days after flowering.

Effect of bacterial suspensions on vine biomass yield

Table 2

species	Productivity		Area million ga (12ga)	Amount of total biomass
	kg/m²	t/ga		
Control	18±0,5	2	22	12
“Oq Husayni”	43,5±3	4,55	52,6	30,3
“Charos”	41,2±4	4,32	49,8	28,8
“Go’zal qora”	45,3±5	4,73	54,76	31,5
“Kattaqo’rg’on”	42,2±7	4,82	55,84	33

Biomass productivity was obtained as an experiment in 4 grape varieties: White Husani, Charos, Gozal Kara, and Kattakurgan. It was shown that the annual dry mass yield of the beautiful black grape is 47.3 kg/m^2.

The total annual dry biomass productivity of the research facilities was 27.12 kg/m^2 on average. The annual dry biomass of the Kattakurgan variety, 48.2% of Charo's variety, and 43.2% of the Akh Husayni variety were obtained from 45.5 kg/m^2 of the total area equal to 12 hectares.

Compared to the control, an increase in yield was observed when grapes were treated with biological suspension. The results obtained based on the experiment were microbiologically analyzed in laboratory conditions and distributed to farms. The White Vulture farm was exposed to 12 hectares of biological suspensions in 3 repetitions, and the results were obtained, and the necessary documents were submitted to the dissertation.

The influence of biological suspensions on the development of vine yield was not used in this decade.

Currently, vines are affected by various phytopathogens, therefore, biological suspensions using antagonistic microorganisms are used.

Conclusion: Microorganisms isolated from different samples are incubated in a thermostat at the optimal temperature for an average of 5-7 days at 28 0C. After the incubation time, the number of microorganisms is determined and different groups of microorganisms are studied. Lactose-fermenting bacteria can produce phytohormones, which are of great importance for the development of plant roots and plant growth.

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