STUDYING THE METHOD OF RECYCLING SEPARATED BIOMASS

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Abstract: Research conducted in microbiological laboratories determined according to the purpose. Infectious in clinical and diagnostic laboratories microbiological diagnosis of diseases is determined. Sanitary and epidemiological laboratories of stations (SES) health, trade and generalhealth and infectious diseases serving in the system of food establishments Bacteriologically and serologically of materials obtained from patients with performs the task of research. Environment in bacteriological laboratories bacterial contamination of objects (air, soil, water, food products).or contamination is studied.

Key words: concentration, *variable, innovative, selective class,* different diluted suspension, *interest, creativity, development, methodology, complex groups,* Bacterioscopic method ,*variable curriculum, ability.* GPA containing

This method is widely used to determine the amount of microorganisms in natural and industrial substrates (water, soil, raw materials, semi-finished products and finished products). We believe that any living cell, when planted in a solid medium, forms a colony. Procedure: Dilution by sample mixing. The sample of the studied material is first diluted ten times to make individual colonies. For this, 9 ml of sterilized tap water or physiological solution (0.5% sodium chloride solution) is poured into sterilized dry test tubes. Then 1 ml (or 1 g) of the initial sample is taken, aseptically added to the first test tube, closed with a cotton plug and thoroughly mixed. As a result, the first mixture - 1:10 is obtained (Fig. 34). The suspension formed in the 1st dilution is thoroughly mixed with a sterilized pipette. For this purpose, the suspension is drawn into the pipette several times and withdrawn again. Then 1 ml of suspension is taken in this pipette and added to the second test tube filled with 9 ml of water - this is the second dilution - 1:102. Taking another pipette, it is diluted a third time in the same way as above - 1:103, then it is diluted up to 10 times, depending on the amount of microorganisms in the initial (initial) material. Planting in a hard environment. From each diluted suspension, at least two to four parallel Petri dishes are inoculated surface or deep. In surface planting, 15-20 ml of dissolved agar medium is poured into a sterilized Petri dish. Then the plates are kept on a horizontal surface for the medium to cool down, and then it is recommended to keep the lid down in a 300C hot thermostat for 2-3 days to check that the medium is dry and sterilized. Drying continues until the condensation water droplets on the surface of the lids with the environment disappear. If microorganisms that grow in extremely humid conditions are taken into account, the culture is sown as soon as it cools downA sterilized measuring pipette is used for planting. In it, water is diluted from the appropriate suspension in a certain volume: 0.05; 0.1 or 0.2 ml (not more than 0.5 ml) is taken

and added to the medium in the plates. Then it is spread evenly on the surface of the solid medium with a sterilized spatula. If the diluted suspension has a high concentration of microorganisms, it is applied to the surface of the nutrient medium in the second, sometimes third plate with this spatula. If the concentration is low (i.e. few cells), only one plate is inoculated with the diluted liquid on the spatula. Inoculate from at least three serially diluted suspensions. One pipette is used in parallel planting. A new sterile pipette is used when using a different diluted suspension. A single pipette can be used to inoculate from suspensions of various dilutions, but inoculation should be started with the most diluted suspension. A new, sterilized spatula must be taken for each diluted suspension. In deep planting, 1 ml of the appropriate suspension is taken in a sterilized pipette and poured into the medium in 2-4 parallel Petri dishes. Then, take 15-20 ml of the agar medium that has been melted and cooled to 46-480C and carefully added to the plate. Then close the lid, quickly turn the plate slowly, and mix the planting material with the nutrient medium inside well. After that, it is stored in a horizontal position to cool down. The bottom of the saucer planted and written on it is placed in the thermostat with the bottom facing up; the temperature should be favorable for the growth of microorganisms. To count the number of anaerobes, plates with the test material inside are placed in an anaerostat. Colony counting. Different groups of microorganisms do not grow at the same rate. Some grow fast, others grow slowly. Therefore, the colony of bacteria is counted after 2-3 days, the colony of fungi and yeasts after 5-7 days, and that of actinomycetes after 7-15 days. To count colonies, plates that have grown far from each other and have at least 50-300 colonies are selected. Colonies are counted under a loupe, which is shown with 8-10 times magnification by placing the plates upside down on a black background. Each time, the colony is counted and a mark is placed on the plate in ink or with a pencil. If there are too many grown colonies, the bottom of the Petri dish is divided into 4, 8 or 16 identical (equal) parts, the colonies in each part are counted and the result is summarized. Colonies in several parts (but at least 1/3 of the media area on the plate) can be counted, the arithmetic mean value can be found and multiplied by the total number of parts in the whole plate.

To determine whether the bacteria are pathogenic, the culture is tested by various methods. Among them: 1. Bacterioscopic method. 2. Bacteriological method. 3. Biological method. Bacterioscopic and bacteriological research methods are based on working directly with prokaryotic cells, and biological analysis is necessary to study the effect of such cells on the living organism of experimental animals. According to the degree of manifestation of certain symptoms of the disease, the scientist can conclude whether or not pathogenic bacteria are present in the sample, and also can grow them naturally in the animal's body to obtain their culture and use them for other purposes. Method of work: identification of bacteria belonging to the Enterobacteriaceae family. 10 g (ml) of a sample of the studied material is added to 90 ml of saturated nutrient medium intended for bacteria belonging to the Enterobacteriaceae family. Mix them well and incubate at 37°C for 24-48 hours. After the growth of microorganisms is observed, they are transferred to Endo medium or bismuth sulfite agar. Incubate again at 37°C for 24-48 hours. In the endo medium, bacteria belonging to the Enterobacteriaceae family form red, purple, colorless, shiny, blistered (2-4 mm in diameter) colonies with a metallic luster or luster. Bacteria grown on bismuth sulphite agar grow as specific, brighter black colonies, the medium under the colonies also becomes dark or dark green, light green, brown, etc. colonies may appear. When these phenomena are examined

under a microscope, it is known that they are gram-negative microorganisms that do not form spores. Each of the suspected colonies was transferred to test tubes containing GPA containing 0.1% glucose and grown at 37°C for 24 hoursIn order to identify enterobacteria, a small amount of sample is added to the medium from test tubes containing a clean culture of microorganisms: a) a medium containing glucose and phenol red and b) a medium with potassium nitrate. Enterobacteria ferment glucose and the medium turns yellow. They can reduce nitrates to nitrites and do not have citrochromoxidase enzymes. If there are gram-negative rod-shaped bacteria that do not form spores in the sample of the studied material, and they react negatively to cytochromoxidase, ferment glucose and convert nitrates into nitrites, then it can be concluded that the drug under investigation contains bacteria belonging to the Enterobacteriaceae family. Sequential method of obtaining pure cultures: If we take 1 ml of this medium and mix it with 9 ml of fresh sterile liquid medium, we will have 100 microorganisms in 10 ml or 10 microorganisms / ml. If we add 1 ml of this suspension to another 9 ml. in the new sterile liquid medium, each ml now contains one microorganism. If there is microbial growth in this tube, it is very likely that this growth was caused by the introduction of a single microorganism into the medium and represents a pure culture of that microorganism.

Salt. It should be used in large quantities to control the growth of microorganisms. Because salt has such a strong flavor, it can be used in large quantities in foods that add flavor, such as beef, pork, and fish. This type of food is usually placed in saline solutions to absorb the salt, or dry salt is rubbed into the food until it is absorbed. Salted foods are preserved with salt. Sugar. In large quantities, it slows down the development of microorganisms. Manufacturers and homemakers add sugar or molasses to jellies and jellies, often canned or frozen fruit, to help preserve them. Sugar also enhances the taste of these foods. Condensed milk contains sugar as a preservative. Vinegar. It is used to pickle green tomatoes, cucumbers, cauliflower, onions, beets, herring, sardines and other foods that taste better when acidic. Acetic acid contained in vinegar slows down the development of microorganisms. Wood smoke. There are chemicals that slow down the growth of microorganisms. However, smoking changes the smell and taste of food. Food processors use this method only to preserve meat and fish, because the smoke does not spoil their taste. Smoke preserves meat and fish well when combined with salting and drying. Meats to be smoked, such as ham, bacon, and other salt-cured products, are hung on the smoker**.** Smoke comes from a burning fire. 7. Antibiotics Antibiotics are chemical compounds produced by living microorganisms. They are recommended by doctors to destroy microorganisms that make people sick. But scientists have discovered that antibiotics can also be used to make it harder for 10 microorganisms that spoil food. In some countries, such as Canada, food processors dip fish in a weak solution of Aureomycin and Terramycin. This slows down the development of microorganisms and allows the fish to be kept longer in the refrigerator. Antibiotics are also added to chilled seawater to preserve fish during shipping. 8. Ultraviolet radiation Ultraviolet rays can destroy most microorganisms, but their use in food preservation is still not widespread. They are used in bread factories to eliminate airborne spores, control mold in packaged cheese, and reduce bacterial damage to meat. The meat processing industry exposes meat to UV light during the tenderization process. The rays sterilize the surface of the meat, where most microorganisms live. Thus, meat can be stored for several days, at a temperature of up to 16 ° C, without spoilage of microorganisms. 11 Unirradiated or UV treated meats should be kept at a lower temperature. The relatively high

temperature allows the softening enzymes to work faster. 9. Preservatives Preservatives prevent food from spoiling and allow the consumer to purchase a variety of products that are available outside of the normal season. Food spoils easily: bacteria causes the structure to rot; enzymes cause unacceptable changes such as browning; some cells in the damaged parts die, which causes discoloration and eventually rots; oils become cloudy due to oxidation. Traditional preservatives include salt, vinegar, alcohol and spices. Radiation can be used as a preservative because it destroys bacteria and enzymes that spoil food. It can also be used to delay the ripening of fruits and vegetables such as potatoes. 10. Pasteurization Pasteurization is a heat treatment that destroys thermosensitive microorganisms (all pathogens and other non-sporulates) present in food. The temperature does not exceed 100 ° C, and this heating can be produced by steam, hot water, ionizing radiation, dry heat, microwave ovens, etc. 12 Pasteurization When high-heat treatment causes significant quality losses, when the microbes responsible for changes in the food product are not very heat-resistant, or when you want to eliminate competing agents (for example, before fermentation) is used. Pasteurization is carried out quickly - high temperature, short time (HTST - "high temperature, short time"), at a temperature above 70 ° C for a few seconds - or slowly - low temperature, long time (LTLT - "low temperature, long time "), temperature from 58 ° C to 70 ° C in a few minutes. Pasteurization is important in the processing of: Baby food based on apples and bananas .Ketchup Beer ,Canned mushrooms ,Pepper sauce ,Concentrated orange juice Apple cider vinegar 11. Pressing is a method discovered by Nicolas Apert in France in 1809, which is currently used by the food industry is one of the methods. With the help of boxes for packaging products, they are sealed and exposed to high temperatures in autoclaves (back), which have the same working principle as internal pressure cookers. Using this equipment, they can expose products without boiling water to high temperatures, which can deteriorate the appearance of these food products. The time and temperature used in curing will depend on the types of products and packaging used, among other factors

References:

1. "About the national encyclopedia of Uzbekistan". National encyclopedia of Uzbekistan State Scientific Publishing House. Archived from the original on 7 November 2014. Accessed: February 4, 2014. Archived 2014-11-07 at the Wayback Machine.
2. "Introduction". National encyclopedia of Uzbekistan. Tashkent. 2006.
3. Mominov, Ibrahim, ed (1971). "Aba". Uzbek Soviet encyclopedia. 1. Tashkent. 9 p.
4. "Aba". National encyclopedia of Uzbekistan. Tashkent. 2000-2005.
5. "Diode". National encyclopedia of Uzbekistan. Tashkent. 2000-2005.
6. Davronov K. World of microbes. Tashkent: ToshDAU, 2001.
7. Babaev A.A. - Biotechnology. M., Nauka, 1984.
8. Kolunyans K.A., Golger L.I. Microbial enzyme preparation. M., 1979. Varfagomev S.D., Kalyuzhniy S.V. Biotechnology. Kineticheskaya osnov'i microbiologicheskikh protsesov M., V'isshaya school, 1990.
9. Fizicheskie osnovi i sposobo''i microfiltratsii i ee application v tekhnologii proizvodstva veterinarnix immunobiologicheskix preparatov CH. IV. "Microfiltration" (Voronin E.S, Tikhonov I.V i dr) M., MGAVMi B.im.K.I. Scriabina, 2000.
10. Myself. The first volume. Tashkent, 2000

11. Cross, Alan S (2008). "What is an antiviral factor?". Important care. 12 (6): 197. doi:10.1186/cc7127. PMC 2646308. PMID 19090973. Retrieved March 28, 2019.
12. Knipe, Hawley, David, Peter (2013). Fields Virology, 6th ed. Philadelphia, PA, USA: LIPPINCOTT WILLIAMS & WILKINS. p. 254. ISBN 978-1-4511-0563-6.
13. Levinson, W. (2010). Review of Medical Microbiology and Immunology (11th ed.). McGraw-Hill. 14. Bien, Yustina; Sokolova, Olga; Bozko, Przemysław (21 May 2018). "Characterization of virulence factors of Staphylococcus aureus: 63 new functions of known virulence factors leading to activation of airway epithelial proinflammatory response". Journal of Pathogens. 2011: 601905. doi:10.4061/2011/601905. PMC 3335658. PMID 22567334.
15. Keen, E.C (December 2012). "Paradigms of Pathogenesis: Towards Mobile Genetic Elements of Disease". Frontiers of cellular and infectious microbiology. 2: 161.
16. Deborah T. Hung; Elizabeth A. Shakhnovich; Emily Pierson; John J. Mekalanos (2005). "A Small Molecule Inhibitor of Vibrio cholerae Virulence and Intestinal Colonization". Science. 310(5748): 670–674. doi:10.1126/science.1116739. PMID 16223984.
17.T.P. Tim Cushney; Andrew J. Lamb (2011). "Recent advances in understanding the antibacterial properties of flavonoids" (PDF). International Journal of Antimicrobial Agents. 38 (2): 99–107. doi:10.1016 / j.ijantimicag.2011.02.014. PMID 21514796.
18. Oscar Cirioni; Roberto Giselli; Daniele Minardi; Fiorenza Orlando; Federico Mocchegiani; Carmela Silvestri; Giovanni Muzzonigro; Vittorio Saba; Giorgio Scalise; Naomi Balaban and Andrea Giacometti (2007). "RNAIII-inhibiting peptide affects biofilm formation in a rat model of staphylococcal ureteral stent infection". Antimicrobial agents and chemotherapy. 51 (12): 4518–4520. doi:10.1128/AAC.00808-07. PMC 2167994. PMID 17875996.