

WATER HARDNESS AND MICROBIOLOGIC QUALITY, IN DIFFERENT PRODUCTION SYSTEMS

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Abstract

An essential component of managing farms product water resources should be analyse. Without the chemical and microbiological analysis of water samples, it would not be possible the status and safety of drinking milk, which are so essential a requirement for the consumers. The study was carried out in different region of Romania and include three farms, averaging 120 goats per producer with an extensively and semi-intensive production system. This study was made to analyse the water hardness and it's content of bacteria. For this purpose we aimed determination of water hardness using strips with ethylenedinitrilotetra-acetic disodium salt. We measured the chemical hardness of water and the results were depended on the quantity of calcium and magnesium salts present in the water. By the reaction between calcium and magnesium ions the strips had different intensity of colours, so the resultant colour was then used to determine the level of hardness water. Bacteriological tests were made onto Agar medium culture in petri dishes and were incubated at 37°C for 48 and the colour, shape, texture and the presence of haemolysis of the colonies were used to identify the organism. Two of the farmers under semi-intensive production system obtain water from boreholes, chennelled into a tank, while one farmer under extensive production system purchased his from boreholes. Based on the total number of bacteria, the lowest contamination took place in the semi-intensive production system (15 CFU/ml), compared to other system where the bacteriological test indicate 523 bacterial colonies formed units / ml (standard law: 100 CFU / ml). This shows that on this farm, like most small farmers, water used comes from well without being treated before using it. When milk tastes good, many people will accept it as a good quality drinking milk. This may be dangerous because the milk may contain excessive amounts of harmful substances which may have health effects on consumers if the water analysis weren't made.

Key words: Water hardness, microbiologic, quality, milk, production system.