

WATER QUALITY FOR BLUEBERRY (*VACCINIUM CORYMBOSUM* L.) IRRIGATION

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Abstract

Water represents a significant factor in primary agricultural production, where until now this percentage has been neglected. The problems of producers who have poor water quality best illustrate the importance of water quality in agricultural production. Irrigation with poor quality water leads to the problem of a significantly lower yield, and not infrequently to crop failure. In addition to the microbiological integrity of water and the control of heavy metal contamination (lead, mercury, cadmium, chromium...), one of the biggest problems of negative consequences of using poor quality water for irrigation is secondary salinization and alkalization. Dissolved salts in water carry with them the danger of their accumulation in the soil during long-term irrigation. When it comes to water quality, it most often refers to two parameters, that is, the electrical conductivity (EC) of the water and the pH value of the water. In intensive production systems, it is necessary to know the content of calcium oxide (CaO), hydrocarbonate (HCO₃) and magnesium oxide (MgO) in water. EC (electrical conductivity of water) represents the ability of water to conduct electricity. The conductivity of water depends on the amount of salt in it, so that a larger amount of dissolved salts in water affects a higher conductivity. The problem of salinization occurs when the concentration of salt in the soil increases to a limit that causes a decrease in water intake by the plant, which further leads to a decrease in yield. Blueberry plants are shallow rooted, salt sensitive and thrive in low soil pH (4.0-5.5). Irrigation of blueberry plants is essential for high-quality fruit, and the quality of the irrigation water will determine the vigor and quality of the harvested fruit. This paper outlines critical nutrients and irrigation water characteristics for blueberry plants that should be determined prior to plant establishment. Since well water is hard and contains lime, actions such as acidifying the water will correct the pH and dissolve the minerals. However, planting blueberries should be avoided when toxic levels of chlorine, boron, and sodium are present in the irrigation water.

Key words: water quality, EC, pH, salt, soil