Abstract: There are no simple solutions to the problem of coagulant dose control in the process of surface water treatment. Those currently being used in engineering are generally focused on determining the correlation between some of the parameters that describe the quality of raw water, *e.g.* turbidity or the electrokinetic potential (streaming current analysis), and on implementing them in simple automatics. This paper describes the results of investigations that underlie the assumptions for the water treatment train, and based on these data proposes an algorithm for coagulant dose control. Pertinent studies were conducted at a surface water treatment plant located in a foot-hill area. The water entering the treatment plant is highly variable in quality. Analysis of the test results (where use was made of both classical mathematical models and artificial neural networks) enabled formulation of the principles for the system of coagulant dose control, which consequently upgraded the functionality of the system involving a standard stream current analyzer.

Keywords: Coagulation, coagulant dose control, water quality, artificial neural networks, modeling.