

Dynamic of selenium uptake by maize

Dynamika pobierania selenu przez kukurydzę

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Assessment of the impact of introduced into the soil selenium on the dynamics of accumulation of this element by the plants was conducted on the basis of the results obtained with the growing pot experience. It was founded in Wagner type pots with a capacity of 3,34 dm³ (5 kg) of soil. Each object was founded in the 12 repetitions, providing 3 pots to the equipment at any time. The ground was slightly acidic clay light, showing the average abundance of P, K, Mg, S, and low content of Se. Selenium was applied used in the form of Na₂SeO₃ in doses: 0; 0.1; 0,2 mg Se·kg⁻¹ soil. Test plants were two varieties of maize: Lober and Bielik, were taken in the following growth phases: BBCH 16, 19, 51 and 70.

Studies have shown that the accumulation of the dry matter by both two varieties of maize, expressed as the relative rate of accumulation (g/plant/day) increased over time, reaching a maximum in the phase of the BBCH 51 – beginning stage of appearance panicles. Within the next days of vegetation to the development of the granuloma (BBCH 71), relative speed of accumulation, depending on the dose introduced of Se was already below the 24 to 44% (Lober) and 31 to 40% (Bielik), than the one specified in the BBCH stage 51.

The accumulation of selenium by the dry mass of the two varieties of maize, expressed as the relative rate of accumulation (µg Se/plant/day) depend on the characteristics of the variety, its development phase and the amount of selenium was entered. In both varieties the relative speed of Se accumulation increased over time, reaching a maximum in phase 9-leaf it (BBCH 19). Over the next days the growing value for this parameter is decreased, and in the final test phases (BBCH 71) was already a negative value. Loss of selenium found indicates the loss of that element in the way of methylated.