

Abstract

This paper aims to present the risk of being exposed apple trees to zinc deficiency, within an bifactorial experience with fertilizers. Mobile Zn content in soil, on one hand and total zinc content in plant material (leaves) on the other hand, as mobile phosphates content in soil, represents agrochemical indices for assessing the probability of zinc deficiency. These indices determined during two years of experimentation, can be quantified in two synthetic indicators IRPM - mobile phosphates reaction index in soil, used for chernozems, that express and explain the influence of pH and available phosphorus content (P-AL ppm) on Zn mobility in soil and its availability to plants; and ICZn - zinc deficiency index, which takes into consideration the value of mobile Zn content in soil, being more significant in order to predict the probability of zinc deficiency appearance. Following the fertilization of experimental variants, we analyzed the data obtained during two consecutive years of experience, and noticed that available phosphorus content in soil increased gradually, while mobile Zn, although increasing quantity, it lies within suboptimal limits. Together these values and soil pH, which has the tendency to rise up to 8.00, the two indices calculated ICZn and IRPM, clearly indicates that the probability of deficiency in zinc appearance is medium to large, ICZn take values between 1.39 and 3.13, while IRPM take values between 0.117 and 0.232.

Key words: apple trees, fertilization, zinc, phosphorus