

Summary

Response of pea (*Pisum sativum* L.) to foliar fertilisation

Research on the effect of foliar fertilization with conventional fertilizers / biostimulants (N1) and with an enzymatic preparation of peptides and L-amino acids of animal origin (N2) applied to eight selected pea cultivars (*Pisum sativum* L.) was carried out in 2015-2017 in the Podkarpackie Agricultural Advisory Center in Boguchwała.

The study investigated the effect of foliar fertilization on the vegetation process, selected features of canopy architecture and physiological processes in the plants at BBCH 65 and BBCH 79 stages, as well as the morphological features of plants, seed yield and their chemical composition.

The effect of foliar fertilization on the process of pea vegetation was observed starting from the BBCH 65 phase. The cultivars studied responded to N1 and to N2 fertilization with an extension of the vegetation period by 1 day, and by 1-4 days, respectively, compared to non-fertilized plants. As a result of foliar fertilization, especially N1 type, there was an increase in LAI, and CCI values and in the intensity of physiological processes in the plants. In the years with favourable weather conditions, foliar fertilization increased the seed yield and protein yield per 1 ha of the crop cultivation. A strong negative response of plants to N2 fertilization was demonstrated in 2016 when rainfall deficiency was observed in May and June; this resulted in a significant decrease in the seed yield. Foliar N1 and N2 fertilization was associated with an increase in plant height, in the total number of pods, and the number of full pods as well as a decrease in Fe, Zn and Cu contents in seeds. N2 fertilization also led to an increase in the content of crude fat and K, and affected the Mn:Cu and Mn:Zn ratios. Proper selection of pea cultivar makes it more possible to influence the chemical composition of the seeds, compared to foliar fertilization. Foliar fertilizers / biostimulants can be recommended in pea cultivation in order to increase the yield and seed quality, while reducing the need for applying chemical fertilizers.