

ABSTRACT OF THESIS

THE EFFECT OF HUMIC ACID TREATMENTS ON POTATO

Chihani Abdelghani

MSc. Plant Protection

Department of Plant protection, Georgikon Campus

Primary thesis advisor: Dr. Polgár Zsolt Géza, Professor

The potato crop (*Solanum tuberosum* L.) is one of the most significant vegetable crops in the world. The positive effect of humic substances on the growth of numerous plants is well documented.

A greenhouse experiment was conducted during the season of 2022-2023 in the Potato Research Centre (Keszthely) to study the influence of humic acid with presence of four types of fertilisers on tuber's weight of two varieties of potato (Balatoni rózsa and Botond). Four different fertilization methods were applied with or without humic acid enrichment at planting time. Five crates per fertilisation were prepared. One crate represented one repetition. All together yields of 80 crates were evaluated (2 variety x 8 fertilisation, 4 with or without humic acid x 5 repetitions).

The results showed that the use of humic acid at planting time in combination with different fertilisers (F1-F4) in greenhouse conditions had a positive effect on tuber yield by increasing tuber weight of each varieties tested (Balatoni rózsa and Botond). Our studies show that the results of humic acid application were more significant with the fertilization 3&4. Additionally, Balatoni rózsa was observed to be the more productive variety among all treatments.

It is recommended to conducting field experiments with the optimal amount and frequency of humic acid application to validate the results of greenhouse studies and evaluating the economic feasibility of incorporating these treatments into potato production systems.