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Summary of the doctoral dissertation prepared by Karol Skrobacz, Master of Science

Title: Comparison of the effectiveness of classic and alternative potato protection products against late potato blight.

Late potato blight, a disease caused by the fungus organism *Phytophthora infestans*, contributes significantly to the reduction of the yield from potato crops. Fungicides approved for use in crops are effective means to limit its action to a significant extent. There are no effective alternatives to reduce their use, for example in organic farms. The aim of this study was to determine the effectiveness of alternative protection products, ozone gas and hydrogen peroxide solution, factors known for their antiseptic and fungicidal activity in reducing the degree of plant infection by late blight. During the three-year field research, with the use of the designed and manufactured innovative equipment for field plant fumigation with ozone, and the use of hydrogen peroxide spray solutions, their impact on the degree of plant infection by disease as well as on the yield and changes in the chemical composition of potato tubers was checked. The conducted experiment did not show that the use of alternative protection products significantly contributed to reducing the infestation of potatoes by late potato blight. At the same time, it was also found that the use of ozone and hydrogen peroxide as stress factors did not significantly affect the potato yielding, while at the same time significantly influencing the positive changes in the composition of its tubers.