

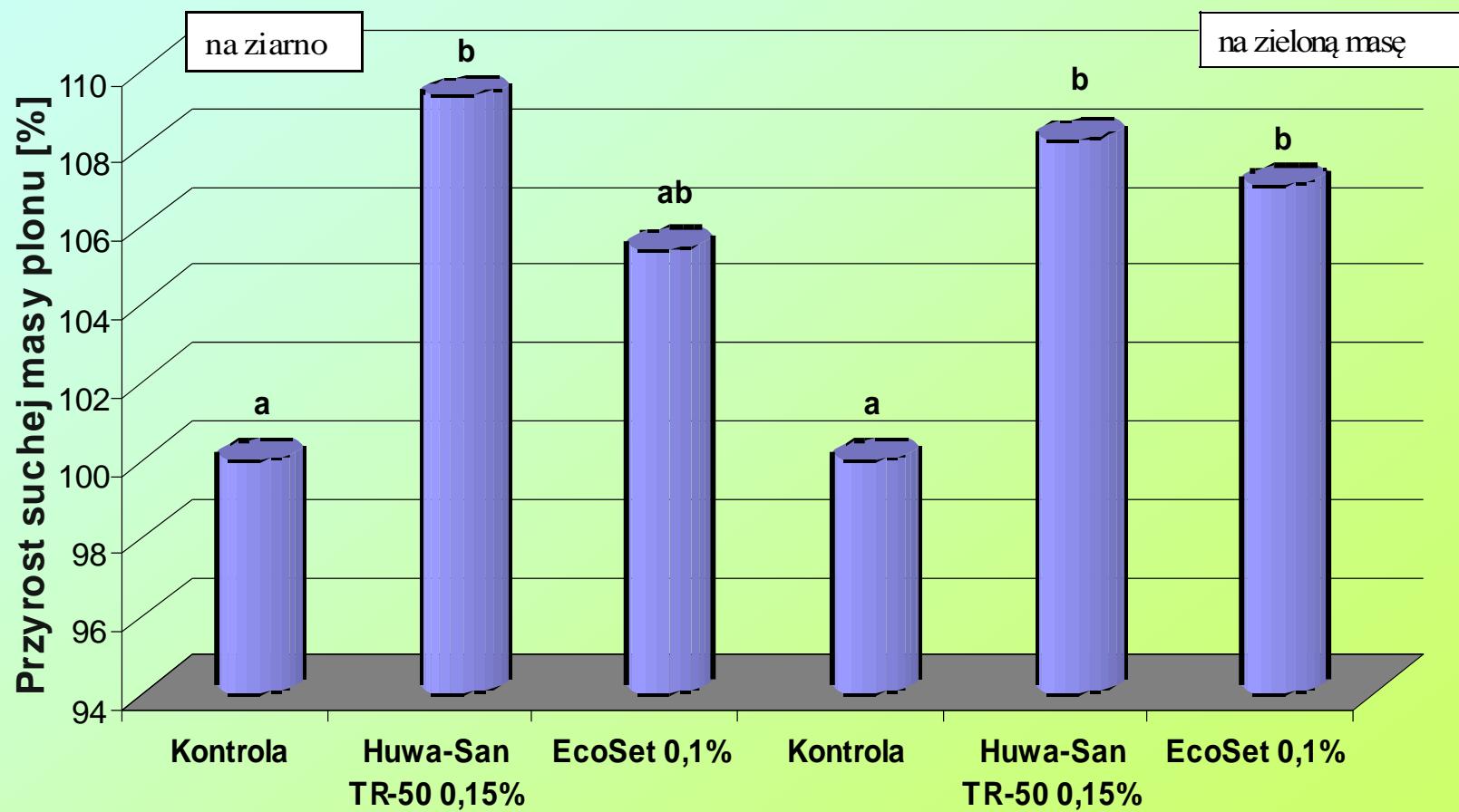
Poland and 8 neighbour countries;
about 312.000 km², 38 mln citizens



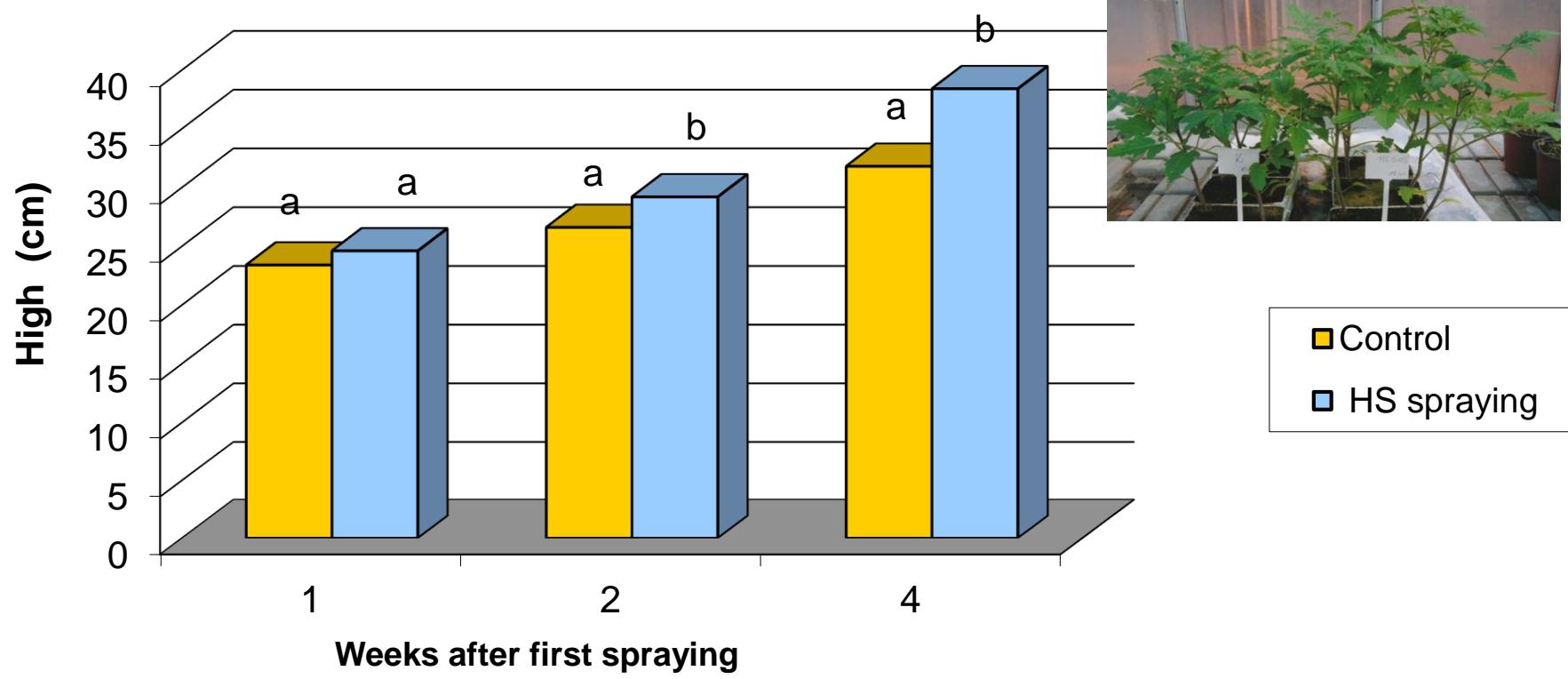
Purpose of studies

- Huwa San TR 50 as growth stimulator
- Huwa San TR 50 as the plant regeneration product after hailstorm and heavy wind
- Huwa San TR 50 as seed dressing product
- Huwa San as the product for desinfection and water cleaning
- Huwa San as plant protection product

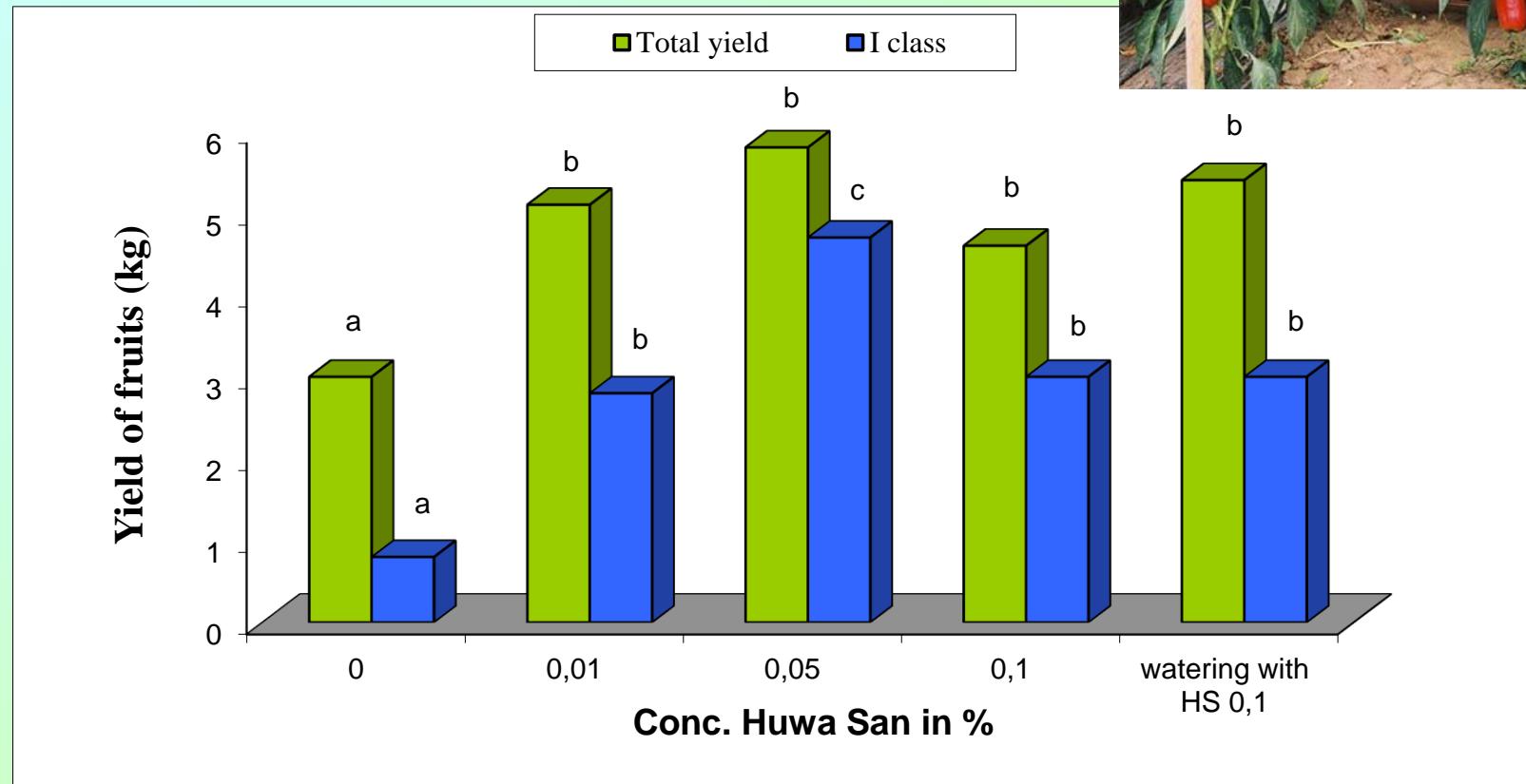
Influence of Huwa San TR 50, applied twice as plant spray, on yields of maize (*Zea mays*) seeds and fresh green mass



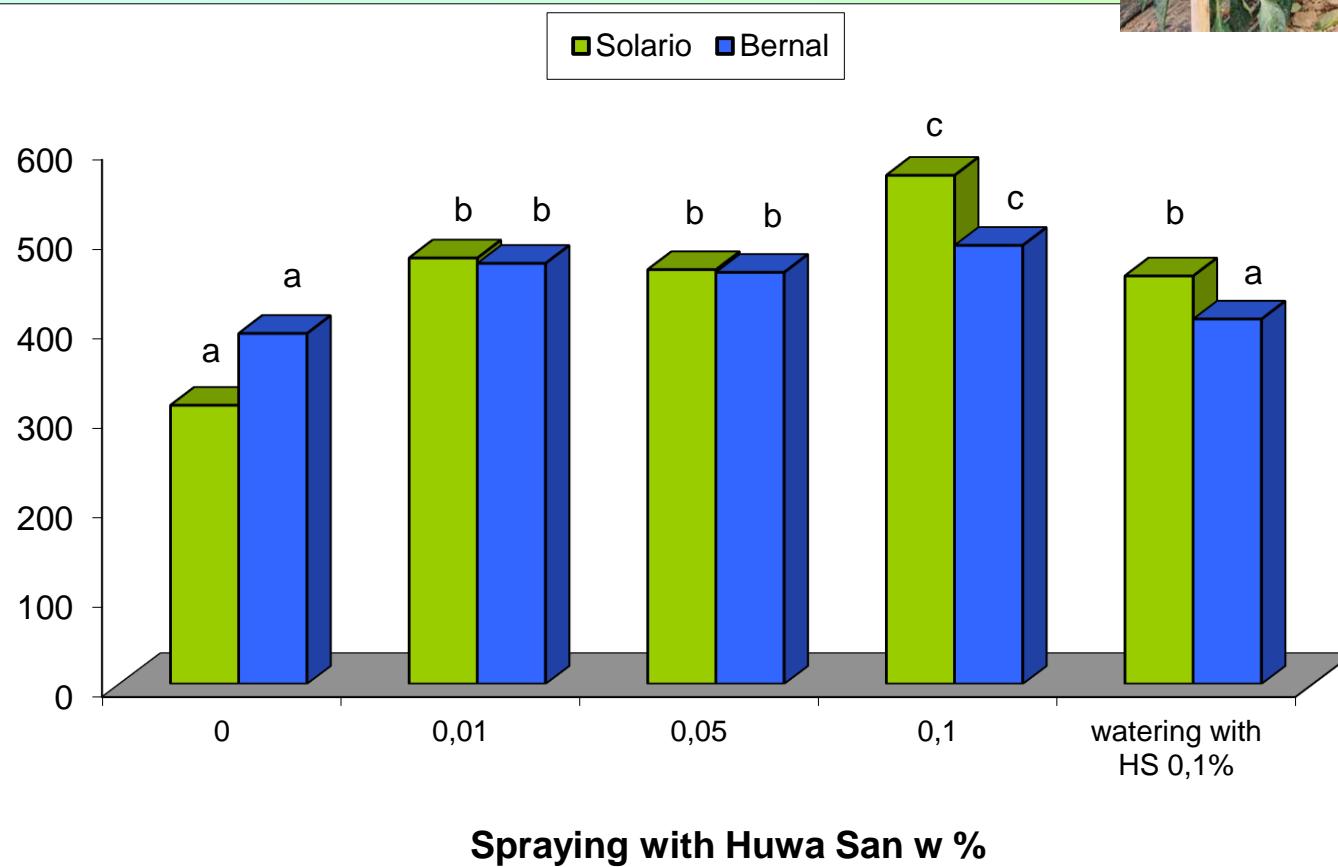
Influence of Huwa-San TR-50, applied twice as plant spray, on the growth of tomato seedlings



Influence of Huwa San on paprica (*Capsicum annuum*) fruit yield



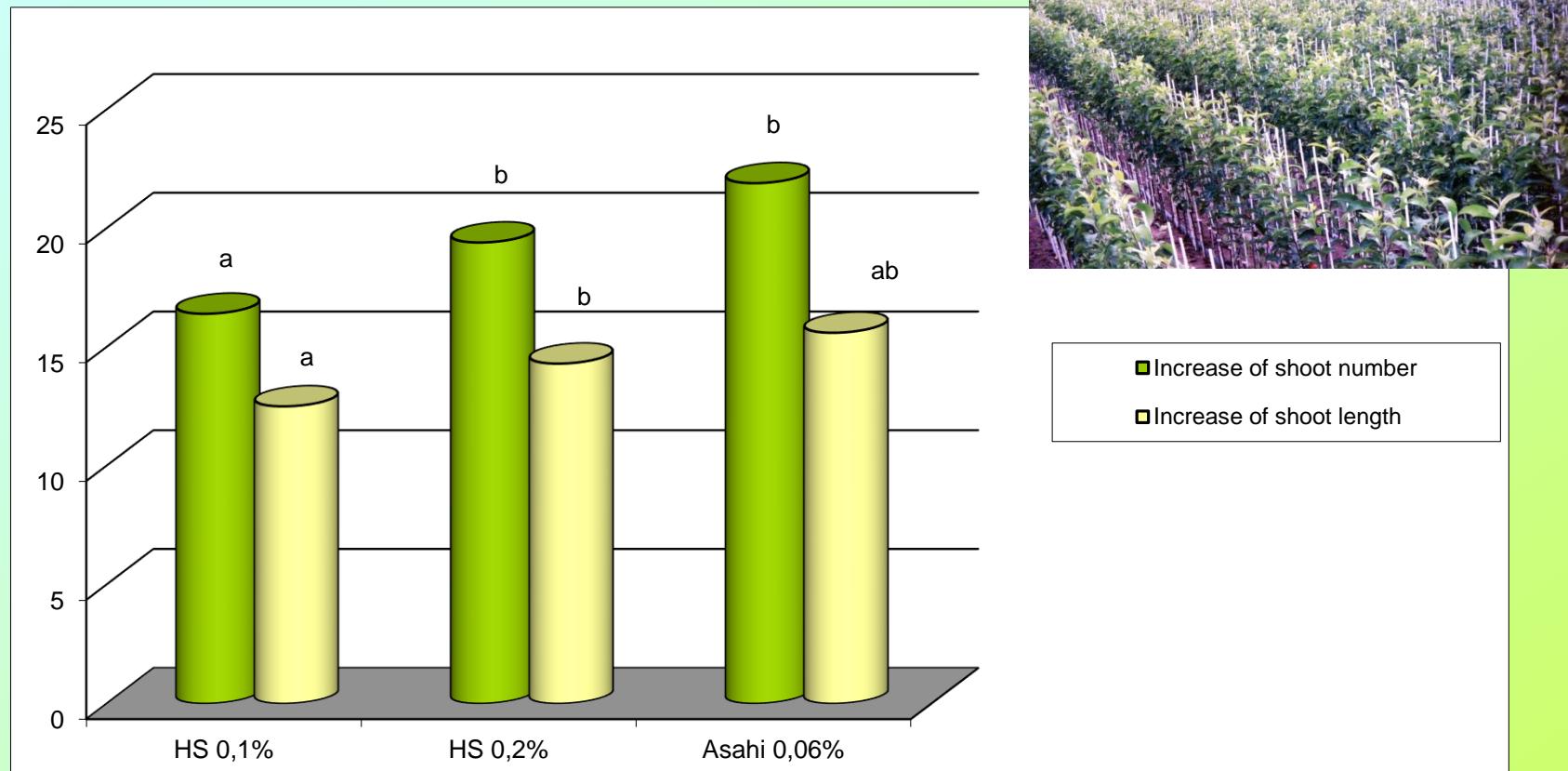
Influence of Huwa San on the increase of chlorophyll amount in paprica (*Capsicum annuum*) leaves



Huwa San as growth stimulator of ornamental plants



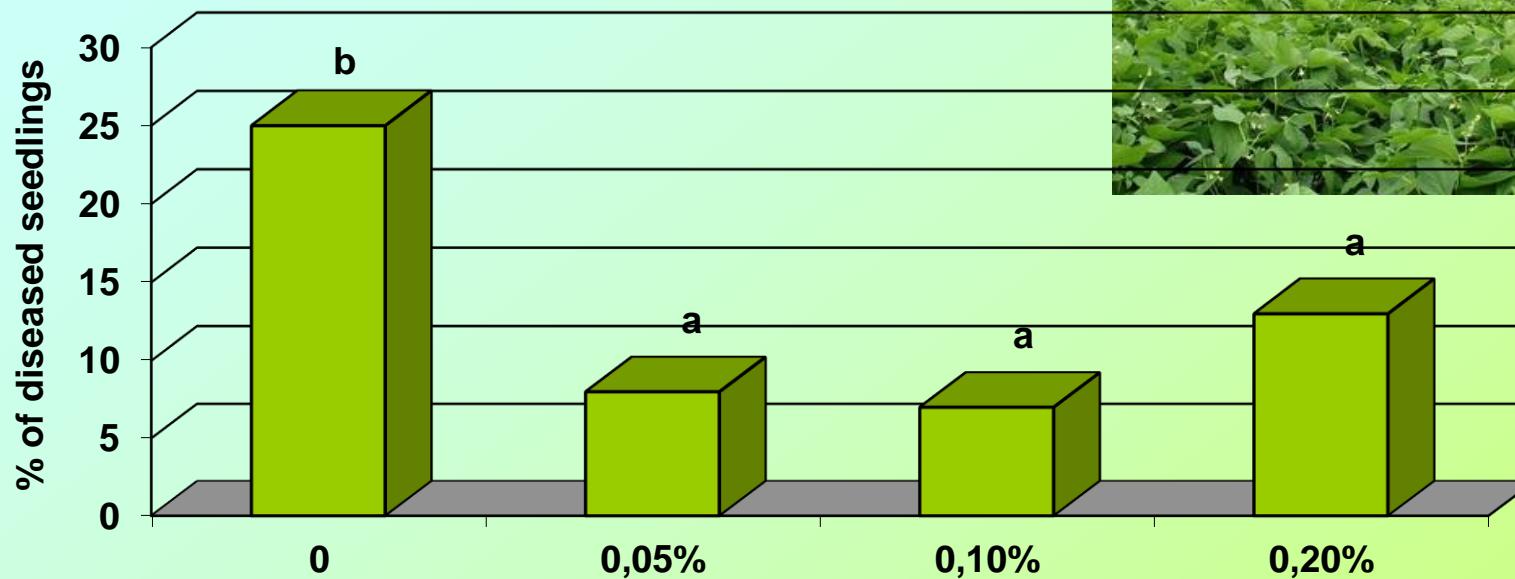
Influence of Huwa San TR 50, applied 3 times as plant spray, on the development of budded apple trees



Huwa San as seed dressing product



Effectiveness of Huwa San TR 50, applied as bean seed soaking, on healthiness of seedlings

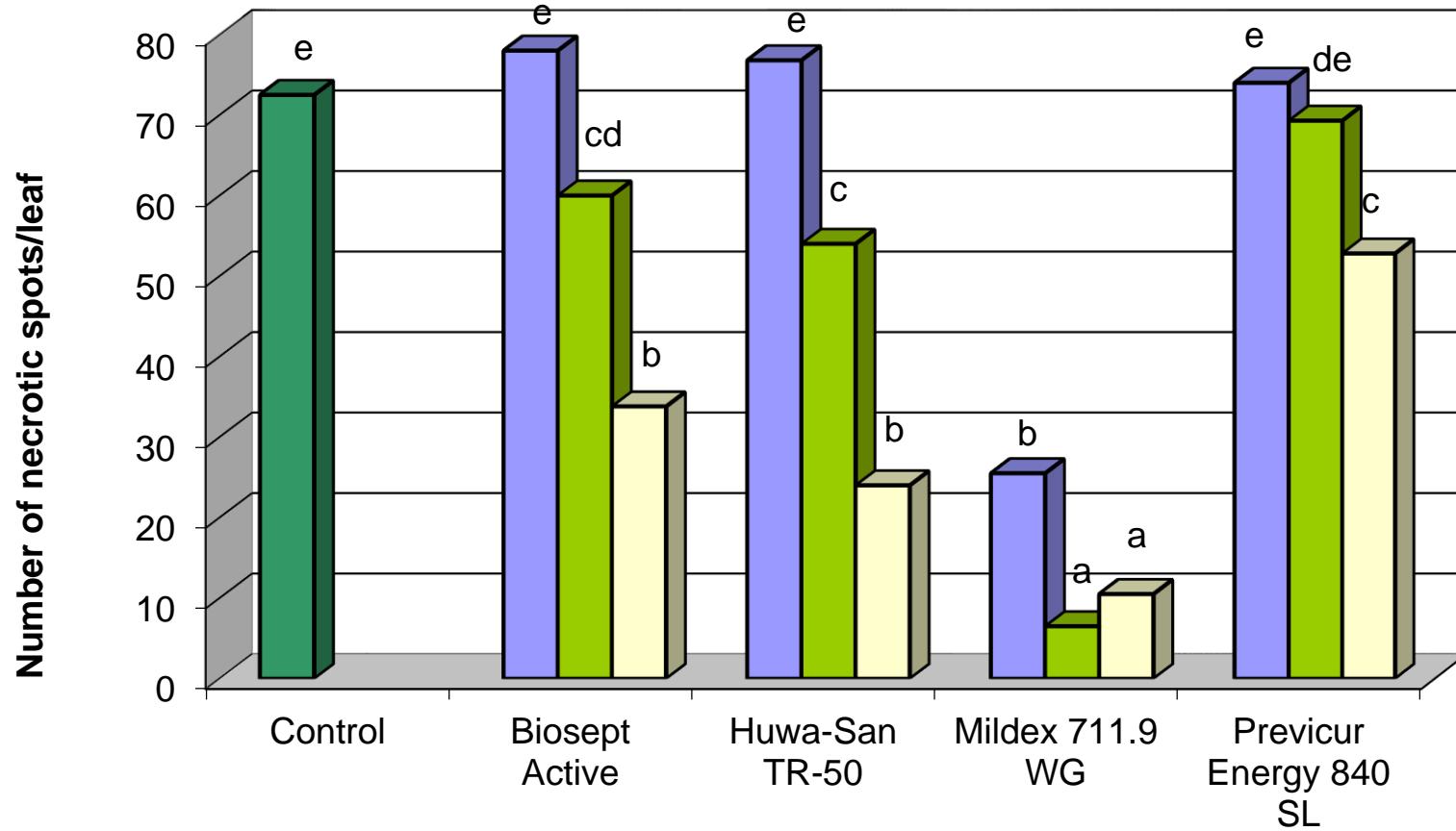
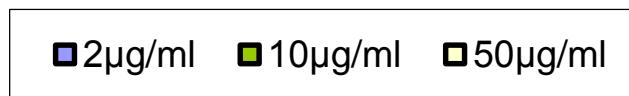


Conc. HS TR-50



Influence of Huwa San, applied to water contaminated with *Phytophthora plurivora*, on the decrease of the pathogen population density, number of spots/baiting leaves in relation to the product concentration

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Huwa San as plant regenerating product

- Orozco-Cardines and Ryan (1999) concluded that, hydrogen peroxide is generated in response to wounding, and can be detected at wound sites within 1 hr after wounding
- The response is systemic and maximizes at about 4-6 hrs in wounded leaves, and then declines

Huwa San as the product for leak (*Allium porrum*) regeneration 3 weeks after hailstorm



Cabbage (*Brassica oleracea*) damaged by hailstorm and regenerated 1 month later



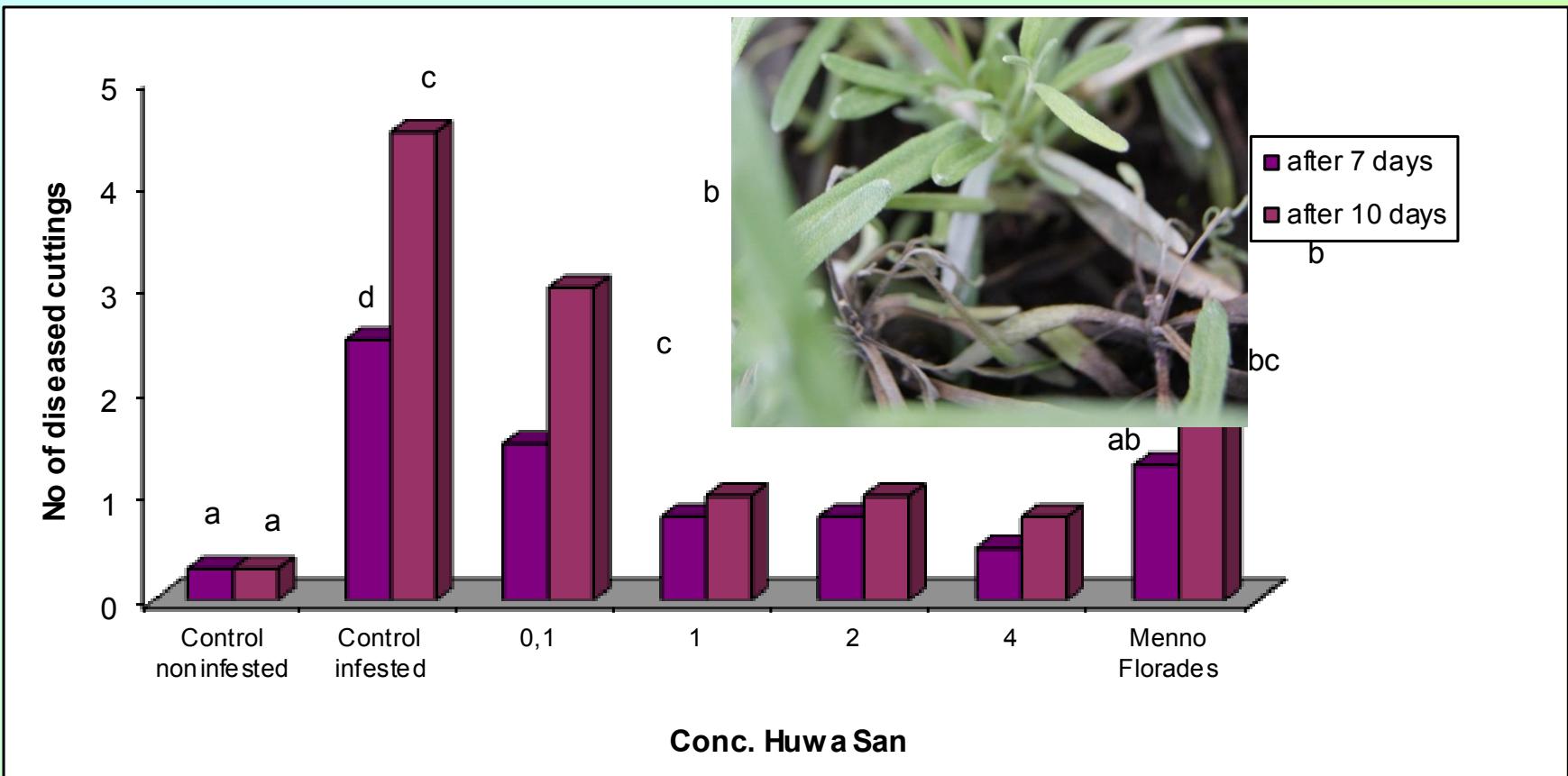
Regeneration of apple shoot demaged by hailstorm (left) within 2 weeks (right)



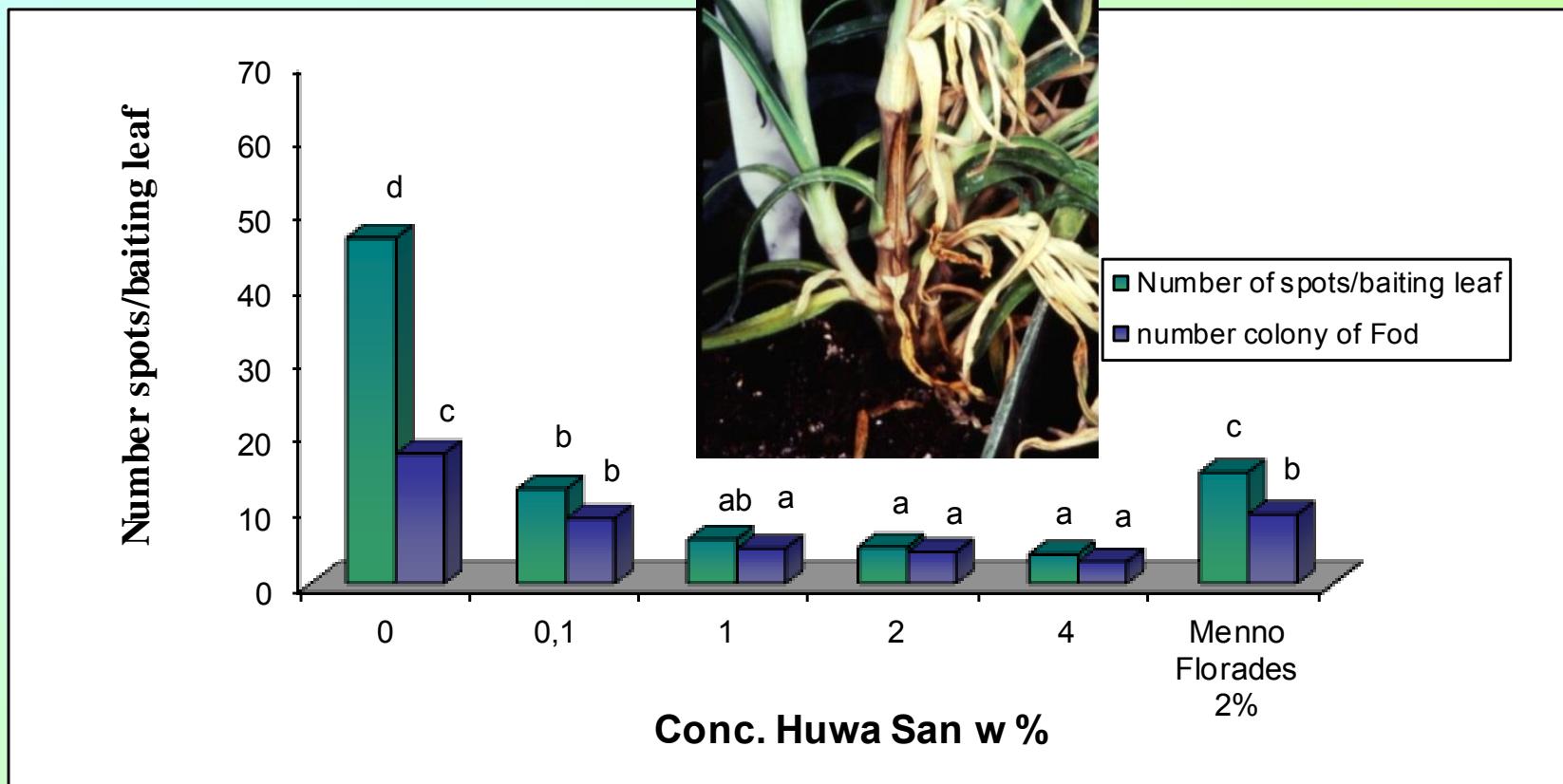
Huwa San TR 50 as soil disinfectant



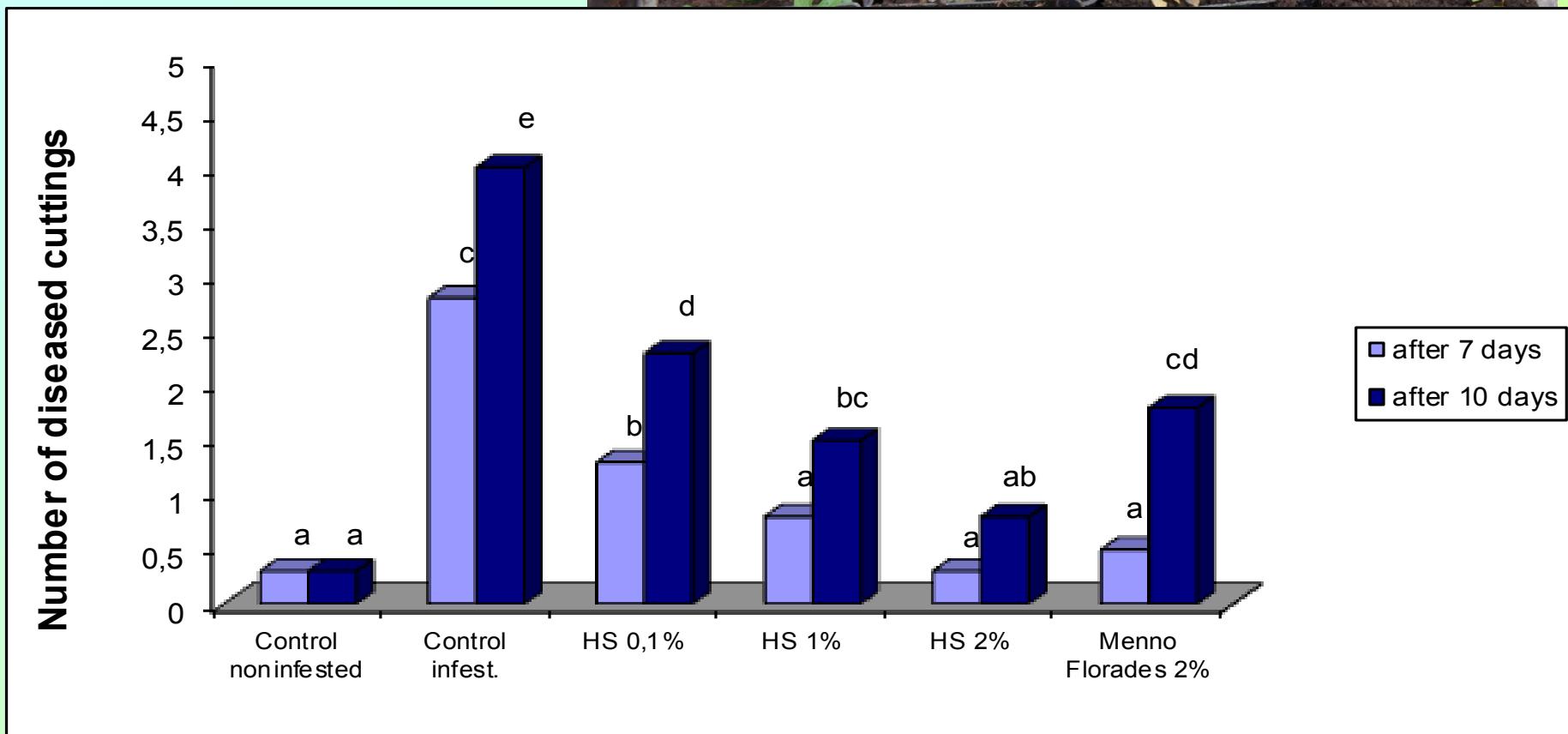
Activity of Huwa San TR 50 in disinfection of peat infested by *Phytophthora cinnamomi*



Activity of Huwa San TR 50 in disinfection of peat infested by *F. oxysporum* f. sp. *dianthi*



Activity of Huwa San in disinfection of soil infested by *Cylindrocladium scoparium*



Huwa San TR 50 as plant protection product



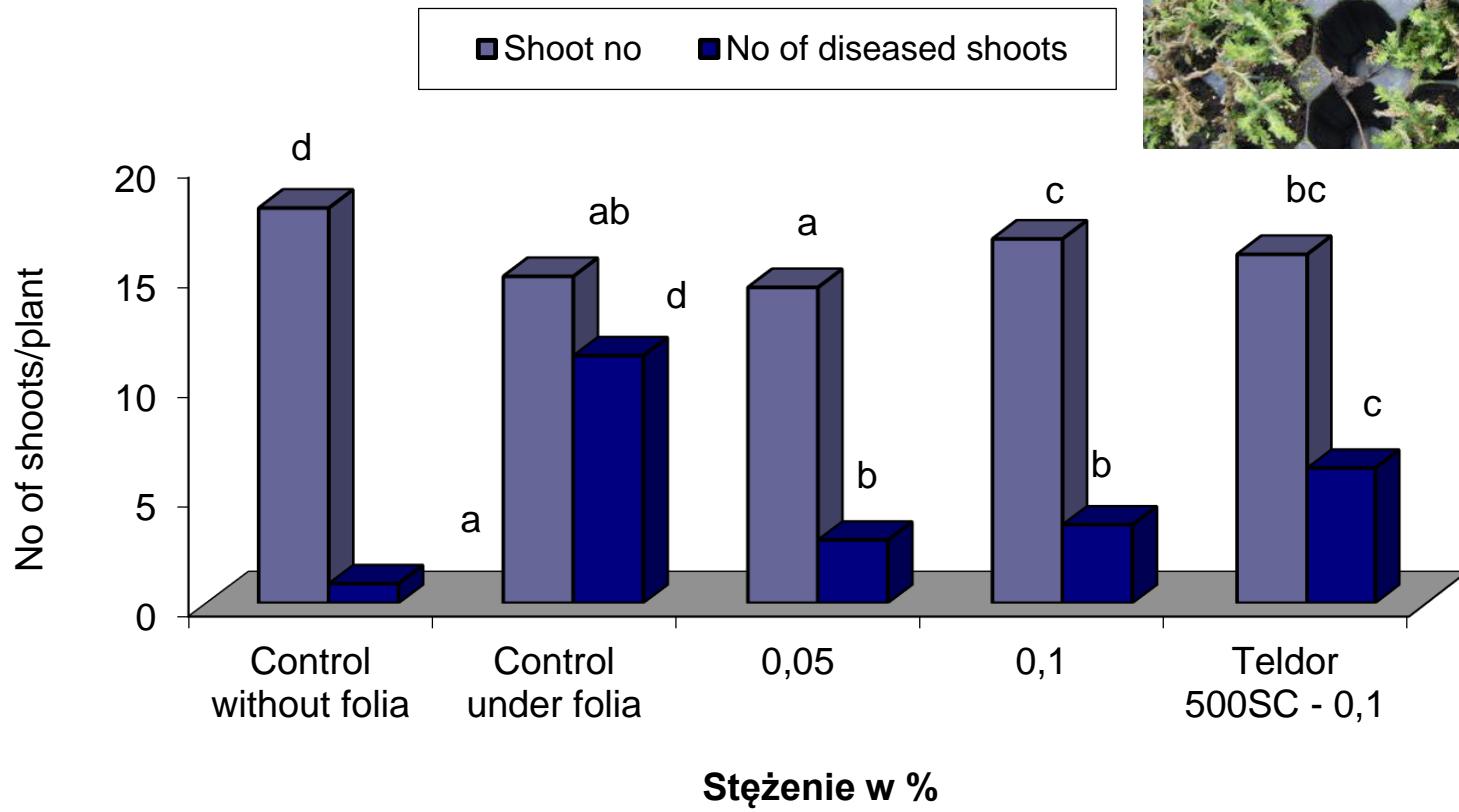
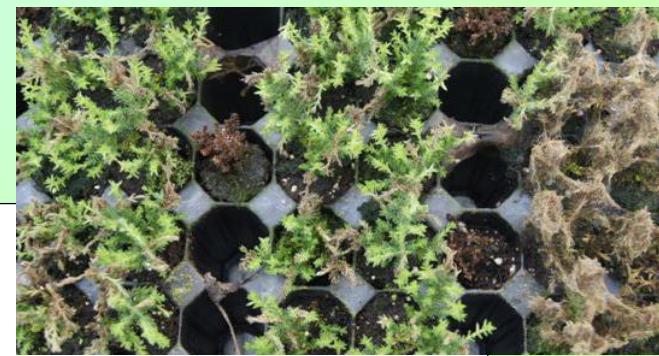
Webber and Sandtner (2007)

The answer of authors for the anecdotal reports
Is the hydrogen peroxide plant stimulator or plant protection product?

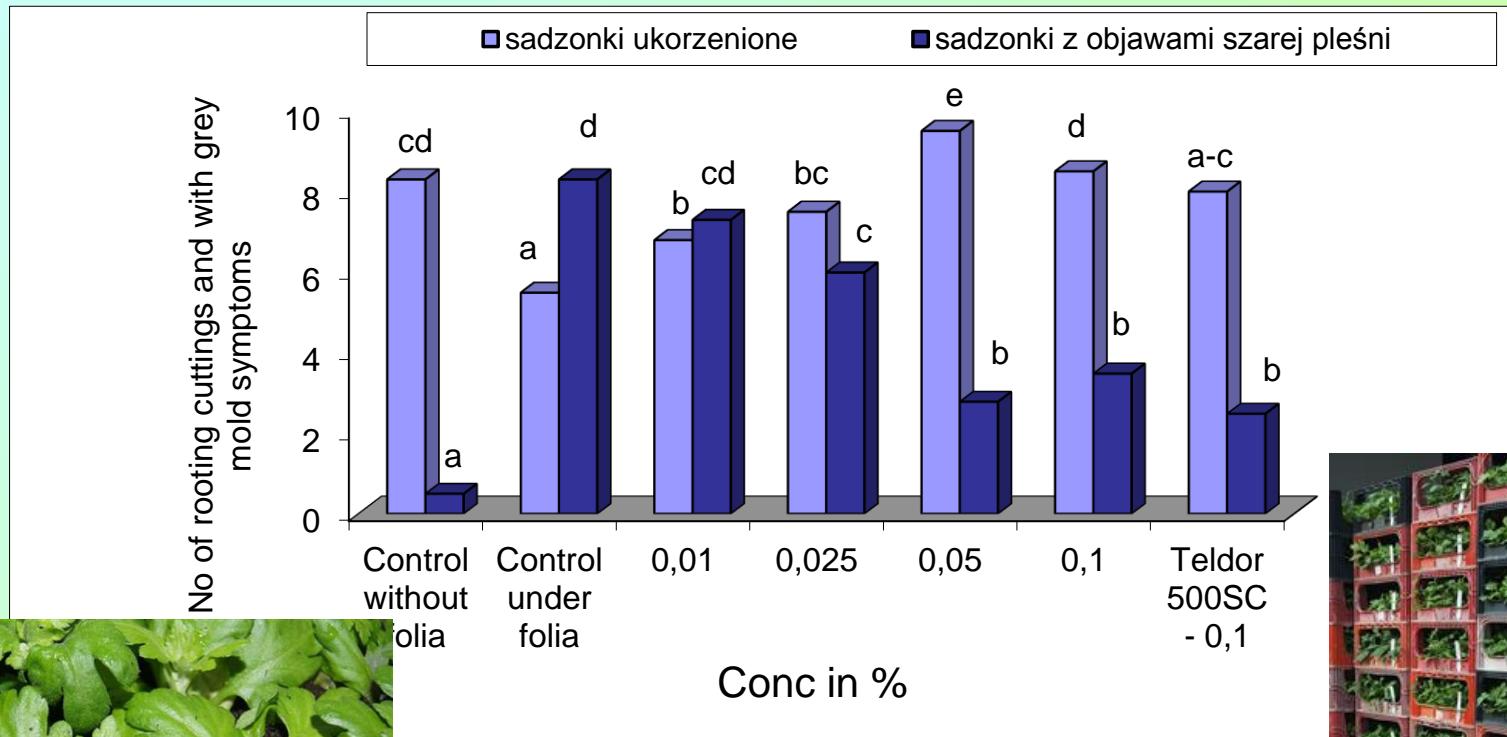


In authors opinion growth stimulus of hydrogen peroxide, applied as watering solutions, may be a result of the decreasing or elimination plant pathogens in the soil, rather than it serving as a direct stimulus to the plant (nasturtium)

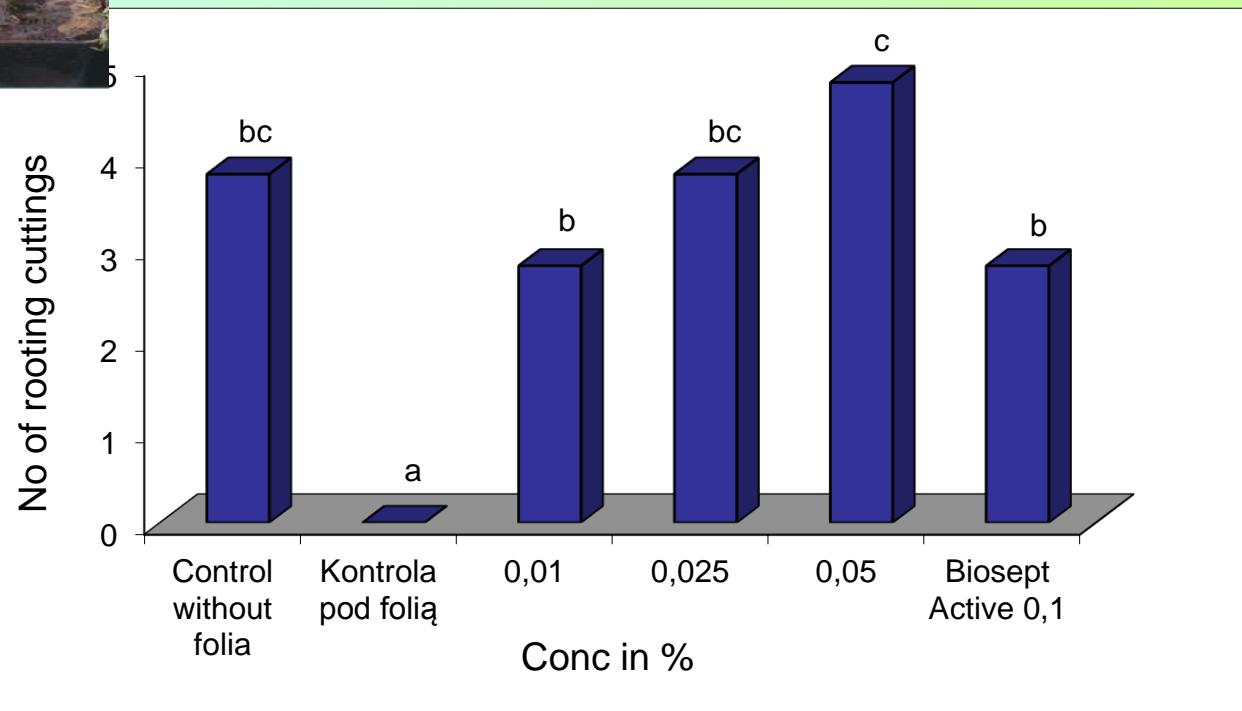
Effectiveness of Huwa San TR 50, applied weekly 3 times as plant spray, in the control of heather (*Calluna vulgaris*) grey mould (*Botrytis cinerea*)



Effectiveness of Huwa San TR 50, applied twice as plant spray, on rooting of cuttings in condition stimulation *Botrytis cinerea* development



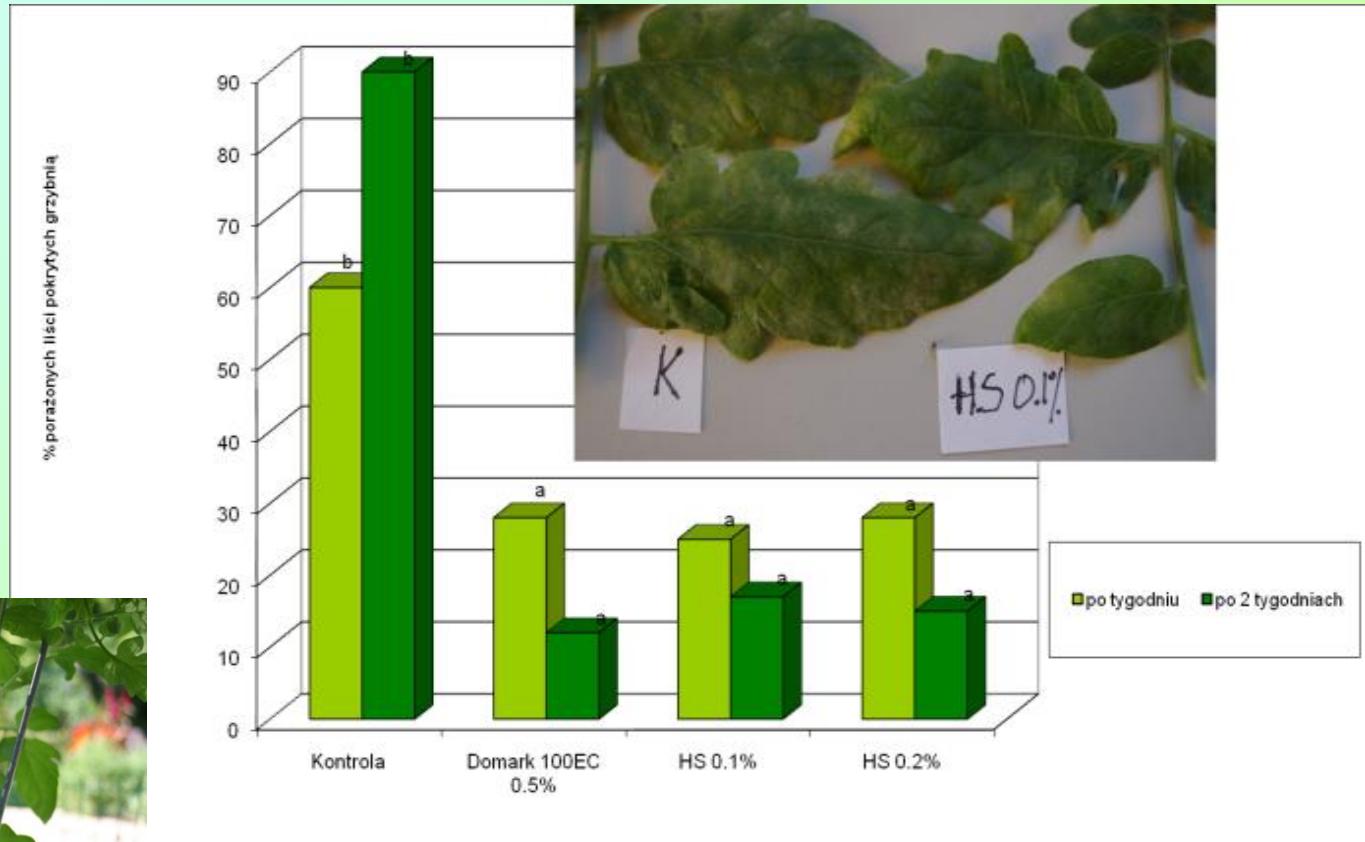
Influence of Huwa San TR 50, applied as substratum drench of chrysanthemum cuttings on their rooting in peat infested by *Pythium ultimum*



Huwa San TR 50 controls also grey mould (*Botrytis cinerea*) of tomato

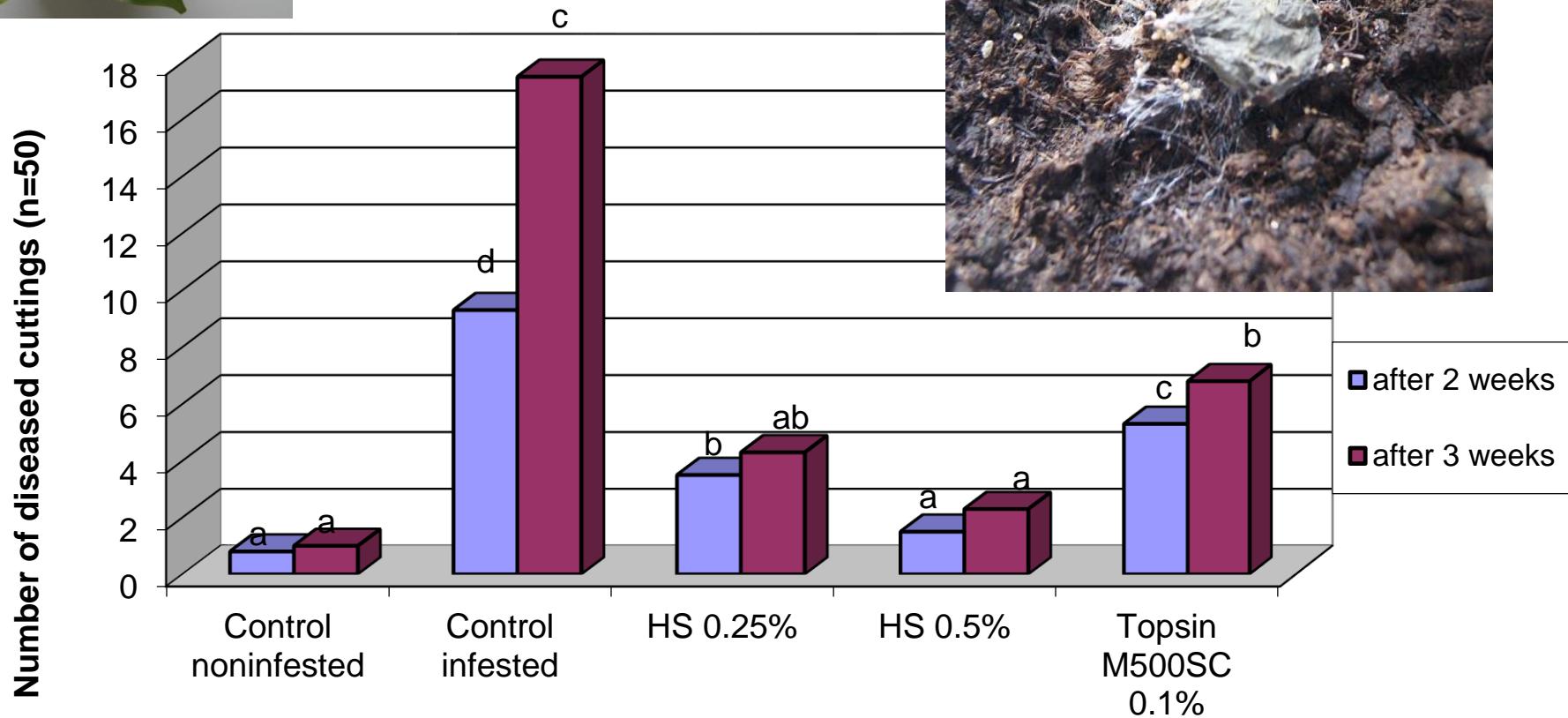


Huwa San TR 50 controls tomato powdery mildew (*Oidium lycopersici*); leaf area covered by the pathogen

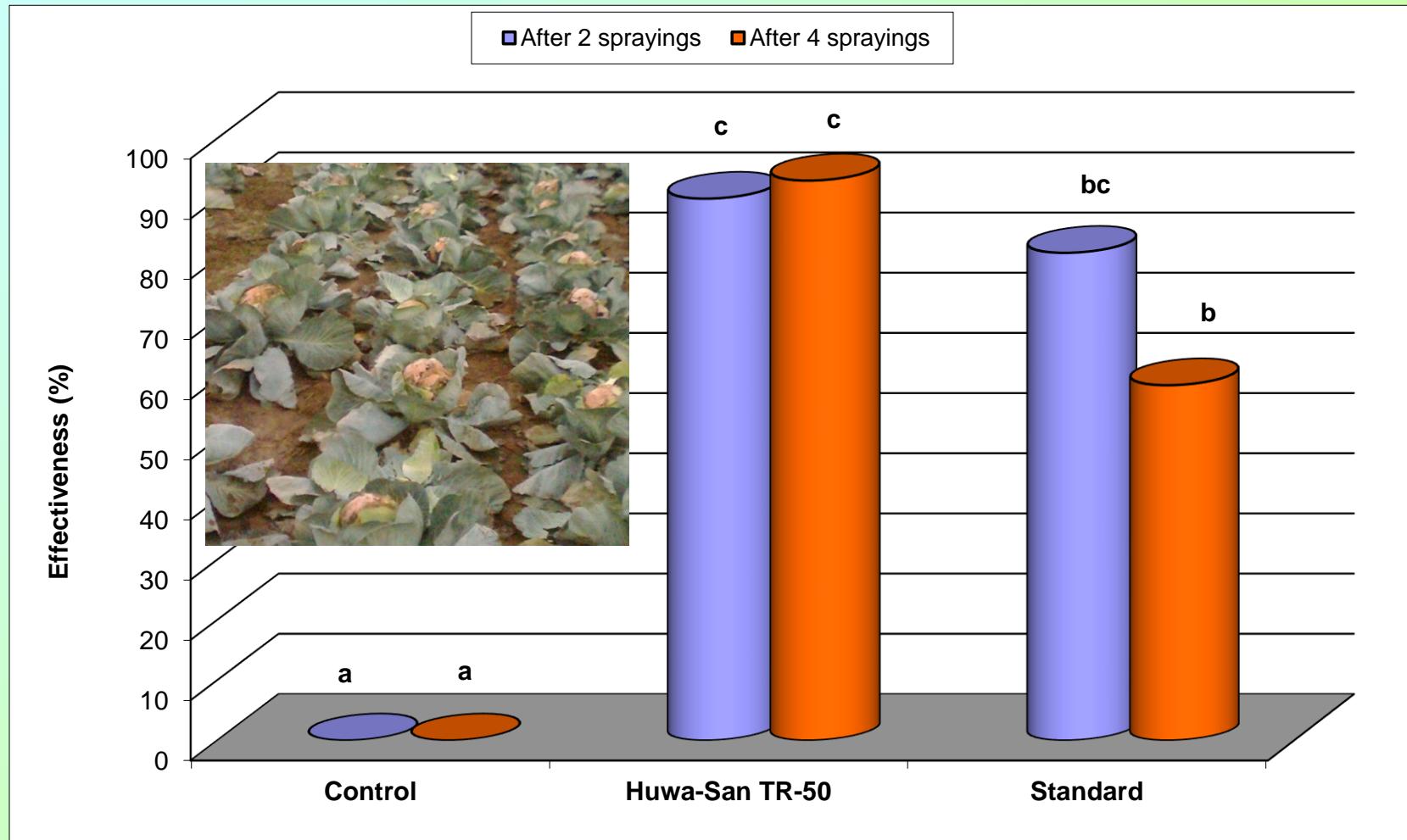




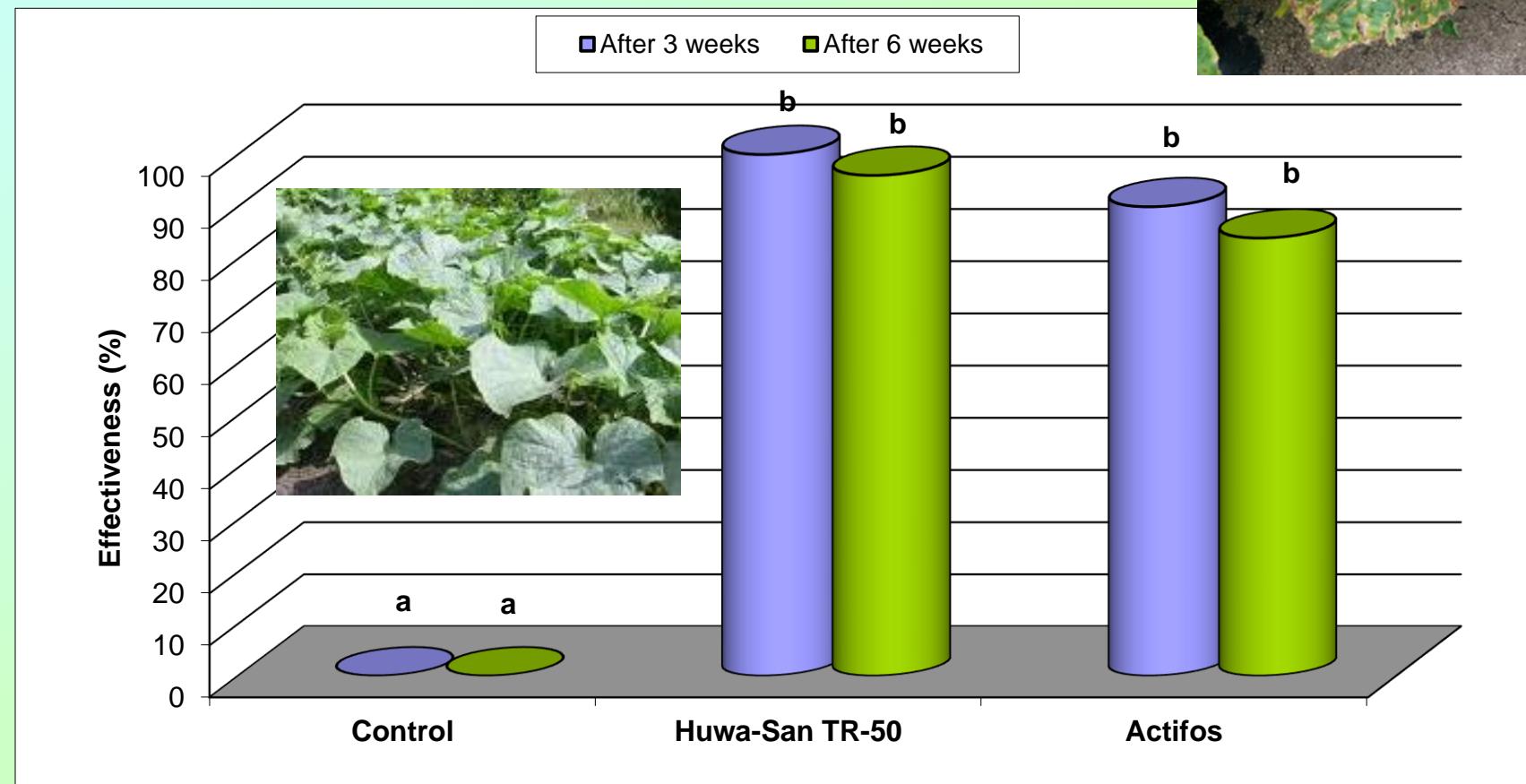
Effect of Topsin M500SC on the control of *Sclerotium rolfsii* on peperomia (*P. obtusifolia*)



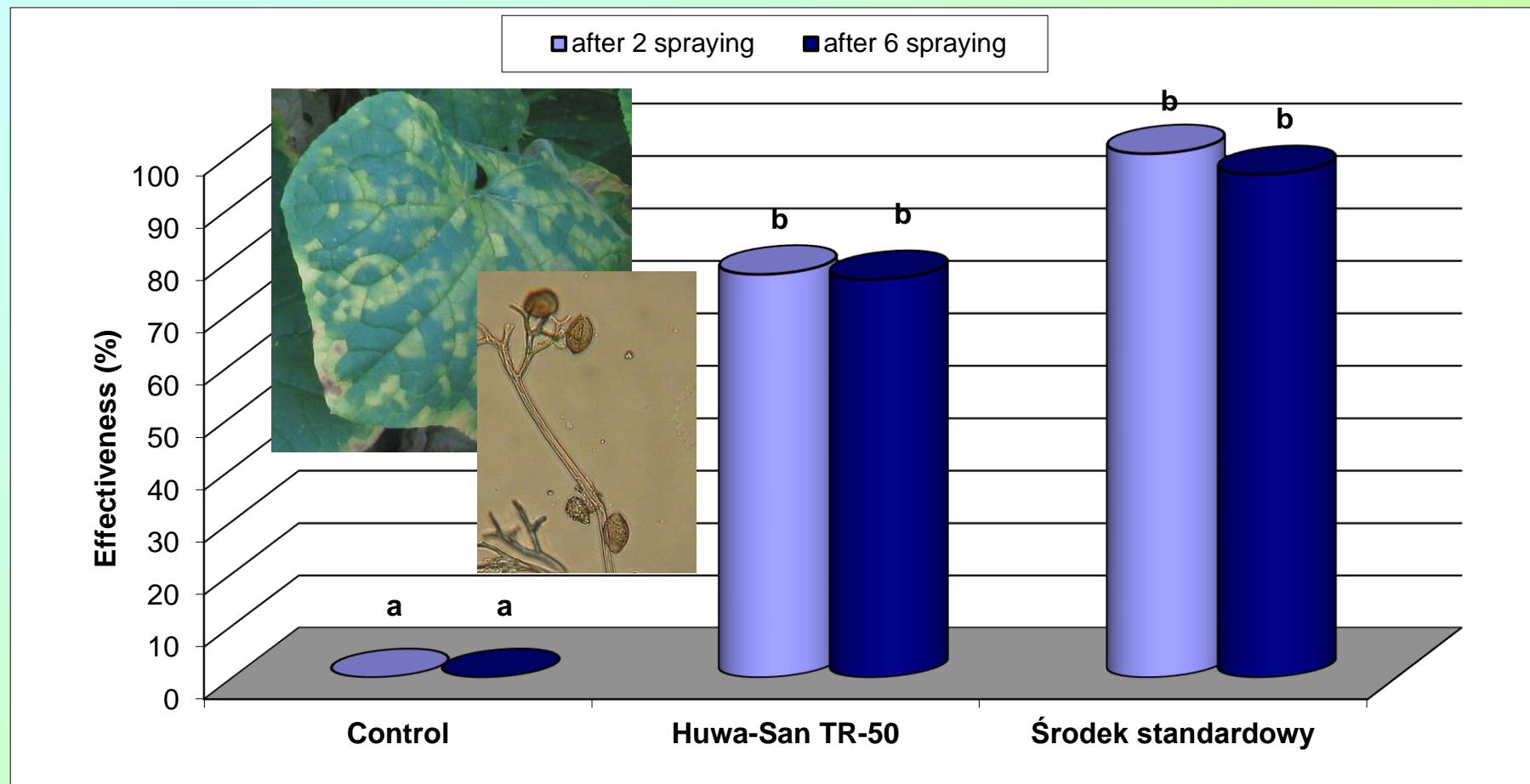
Effectiveness of Huwa San TR 50, applied weekly 4 times as plant spray, in the control of *Xanthomonas campestris* pv. *campestris* on cabbage (*Brassica oleracea*)



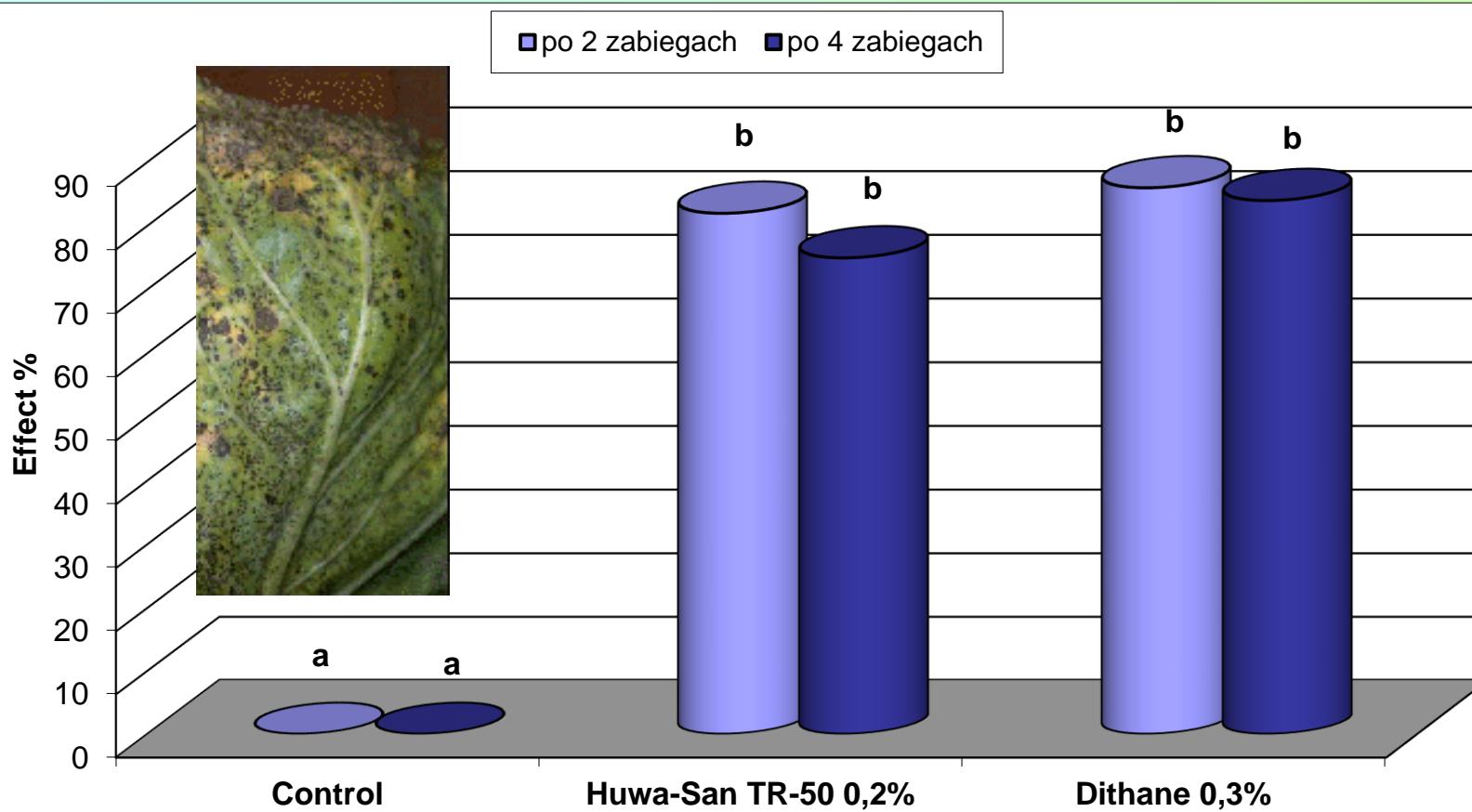
Effectiveness of Huwa San TR 50, applied 6 times at weekly intervals as plant spray, in the control of *Pseudomonas lachrymans* on cucumber leaves



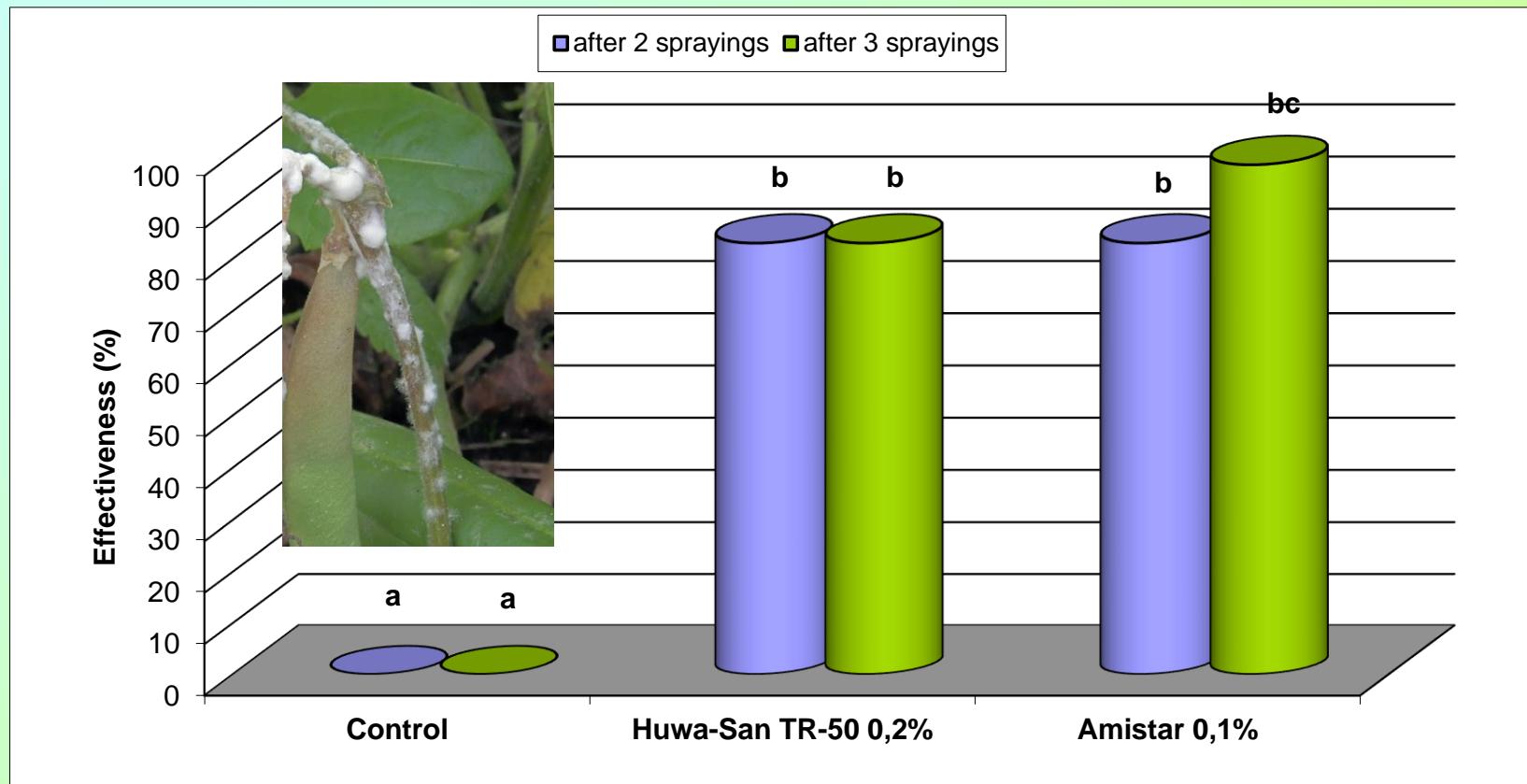
Effectiveness of Huwa San TR 50, applied 6 times at weekly intervals, in the control of cucumber downy mildew (*Pseudoperonospora cubensis*)



Effectiveness of Huwa San TR 50, applied 4 times at weekly intervals, in the control of Alternaria leaf spot of tomato (*Lycopersicon esculentum*)



Effectiveness of Huwa San TR 50, applied 3 times at weekly intervals, in the control of *Sclerotinia sclerotiorum* on bean



Huwa San TR 50, applied as plant spray, effectively
protects infected apple shoots



Conclusions; Huwa San TR 50, may be used as growth stimulator, seed dressing product, water cleaning compound, and plant protection fungicide during all stages of plant development

