

# INTERSPECIFIC SUNFLOWER PROGENIES SELECTION FOR TOLERANCE TO WHITE ROT CAUSED BY *SCLEROTINIA SCLEROTIUM* (LIB.) DE BARY

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## Introduction

White rot caused by necrotrophic fungus *Sclerotinia sclerotiorum* (Lib.) de Bary is major sunflower disease with potential of total yield loss. Host range includes over 400 species, among them several important crops. On sunflower this fungus is causing white mould.

Wild sunflower species have been used continuously as an important genepool for resistance to agents of numerous diseases. Among annual wild sunflower species tolerance to sclerotinia head rot could be found in *Helianthus praecox*, *H. argophyllus*, *H. annuus*, *H. petiolaris*.



Sunflower growth stage at which inoculation was done

## Materials and Methods

The interspecific hybrid plants were used for *Sclerotinia* head rot tolerance testing. All tested interspecific progenies were obtained after crosses between cultivated inbred lines and wild annual species, followed by one generation of open pollination due to difficulties in obtaining progenies from controlled backcross pollination.

## Artificial inoculation

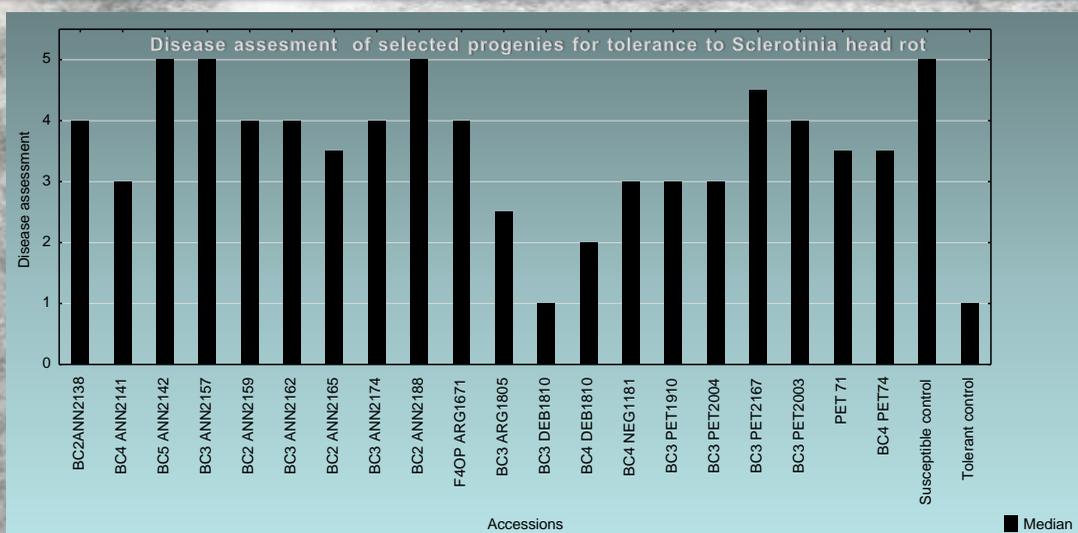
- ascospore suspension – concentration 5000 spores/ml
- amount of suspension – 5 ml/head
- sunflower growth stage - flowering (R5.5)

After inoculation heads were covered with brown paper bags. The field was irrigated three times per week with 15 mm

Disease progress was used to determine the tolerance of examined germplasm

## Results

At the end of trial, 8 out of 9 tested *Helianthus annuus* progenies were highly susceptible, where symptoms of white rot covered more than 50% of the head area. Most of the *H. petiolaris* progenies were moderately susceptible, while the most tolerant were two progenies of *H. debilis* originating from accession DEB1810 where less than 12,5% of head rot was found.



## Conclusion

This study shows the possibility to use open pollinated progenies in sunflower interspecific programs where other hybridization methods are not successful. Careful selection in the following generations of backcrossing and selfing can than lead to the desired resistance trait.