

# Biological control of *Heterobasidion* root rot using Latvian fungal strains



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## The aim

- Development of biological control agent (BCA) against *Heterobasidion* root rot infection in conifer stumps containing local *Phlebiopsis gigantea*, *Bjerkandera adusta* and *Sistotrema brinkmannii* isolates.
- Development of alternative biological control agent



## Preliminary results

Growth rate in spruce wood

- 9 fungal isolates
  - 3 *P. gigantea*,
  - 3 *B. adusta*
  - 3 *S. brinkmannii*
- Rotstop isolate used as control.
- 30 spruce bullets (30x20 cm)



*Bjerkandera adusta*

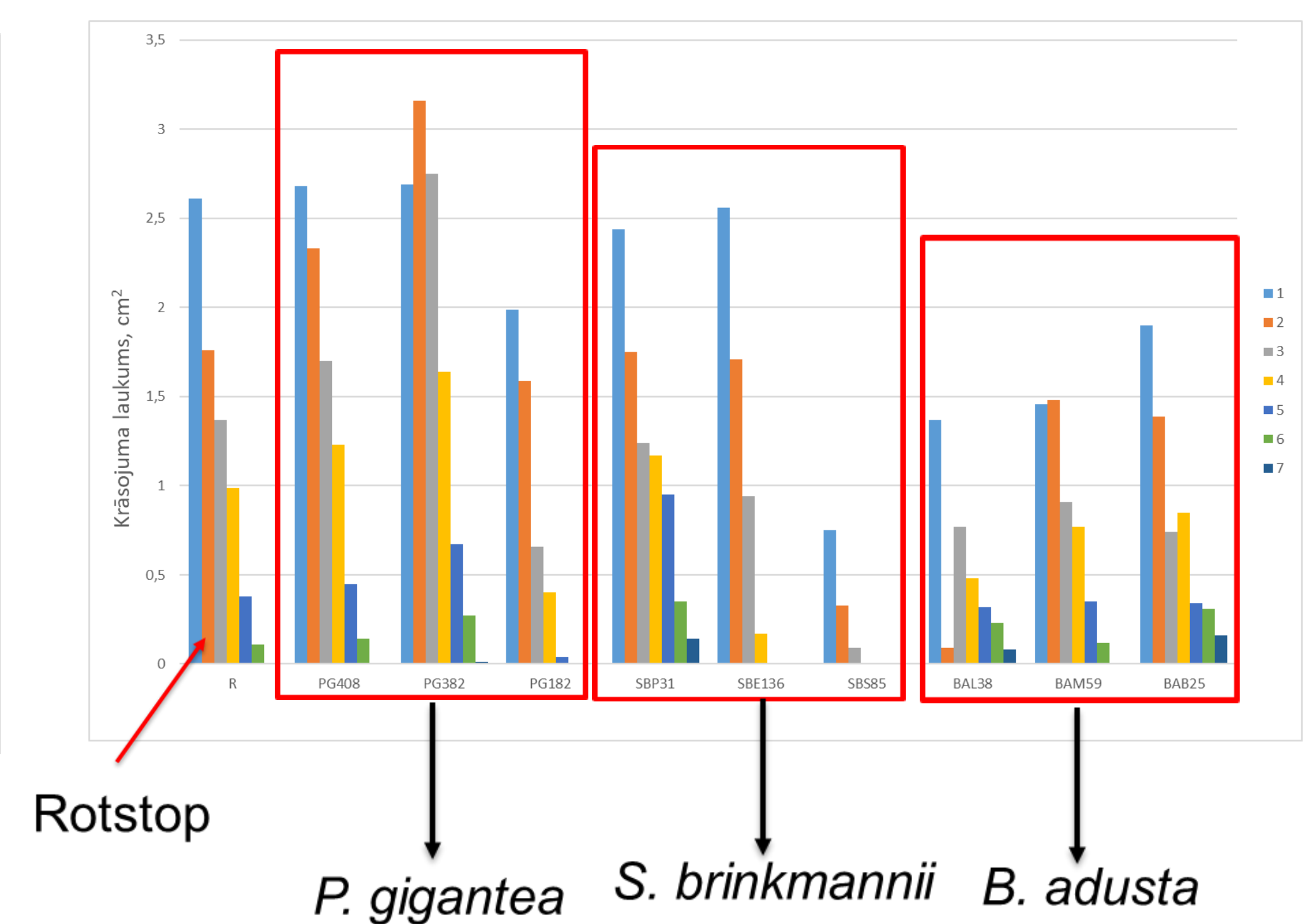
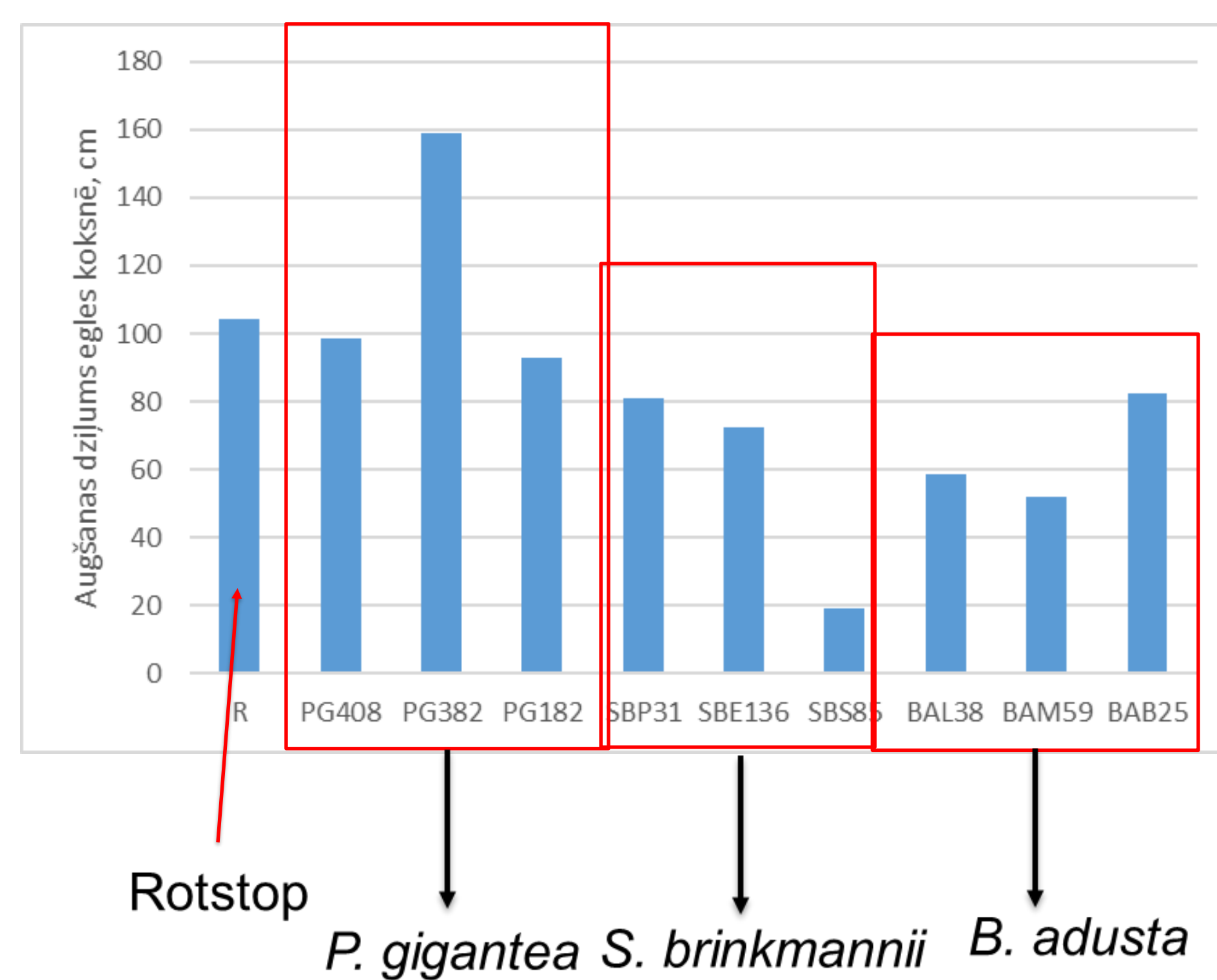


*Phlebiopsis gigantea*



*Sistotrema brinkmannii*

On upper surface of each spruce bullet 5 holes (2x2x0.5 cm) were made using a drill. In each hole, 0.4 ml of spore suspension were added using Eppendorf mechanical pipette. Bullets were incubated 4 weeks in climate chamber at 80% humidity and 21°C degree. After incubation, each bullet was sawed into 7-8 wood disks with width of 25-30 cm.



## Ongoing research

- Evaluation of effectivity of mixed *P. gigantea* /*B. adusta* /*S.brinkmannii* suspensions against *Heterobasidion* in wood of 4 conifers (*Pinus sylvestris*, *Picea abies*, *Larix sp.*).
- Development of production protocol for mixed suspensions of *P. gigantea*, *B. adusta* un *S. brinkmannii*.
- Fungal growth and oidia production evaluated in 5 different substrates: straw, conifer sawdust, broadleaf sawdust, rye bran and maize kernels.
- Growth technology under development.
- Establishment of long-term experiment for evaluation of product impact on fungal biodiversity.

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