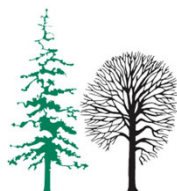


Sajasto odmiranje skorje **(*Cryptostroma corticale*):**

prva najdba v Sloveniji

Nikica Ogris, Ana Brglez, Barbara Piškur

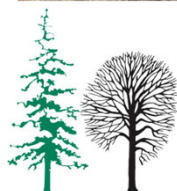
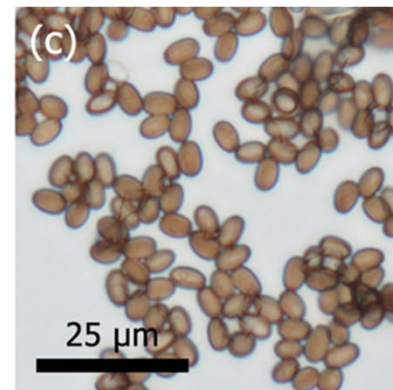
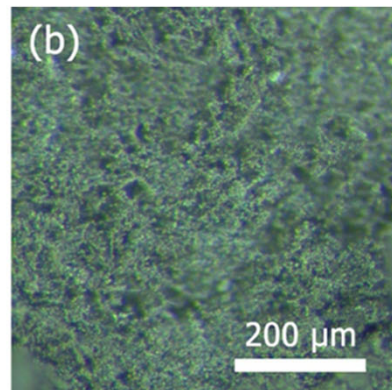
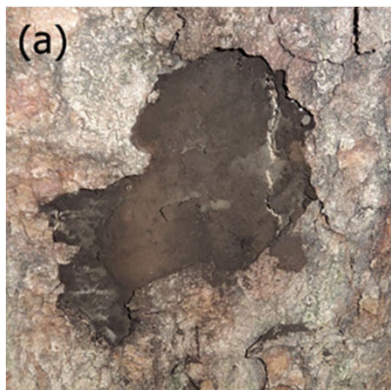
11. seminar in delavnica iz varstva gozdov, 1. in 2. 6. 2021, videokonferenca



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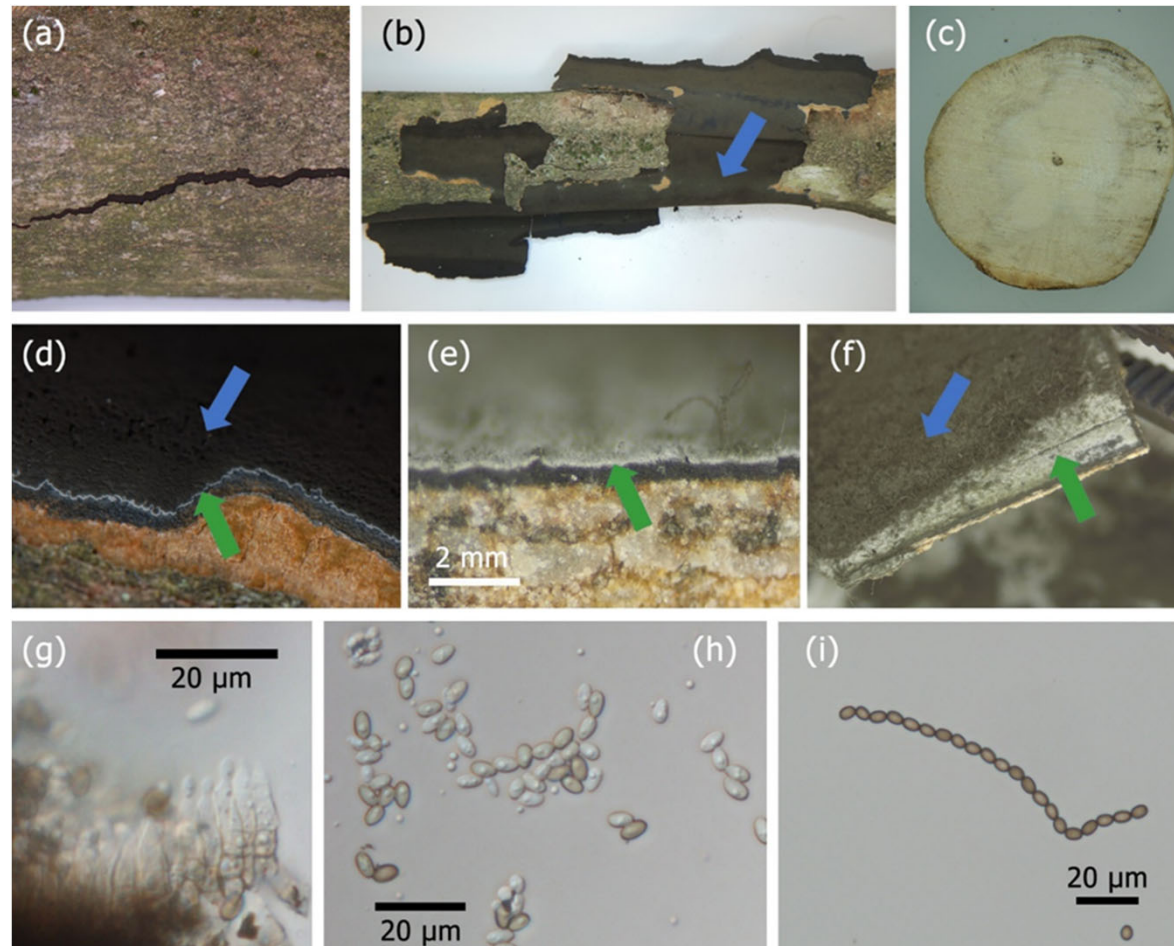
Anekdota

- Februarja 2019 smo pri Moravčah odrezali kos debla gorskega javorja z javorovim rakom (*Eutypella parasitica*).
- Čok smo pustili v hodniku na GIS za namen prikaza javorovega raka.
- Čez 8 mesecev, oktobra 2019, smo opazili simptome sajastega odmiranje skorje.

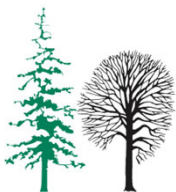
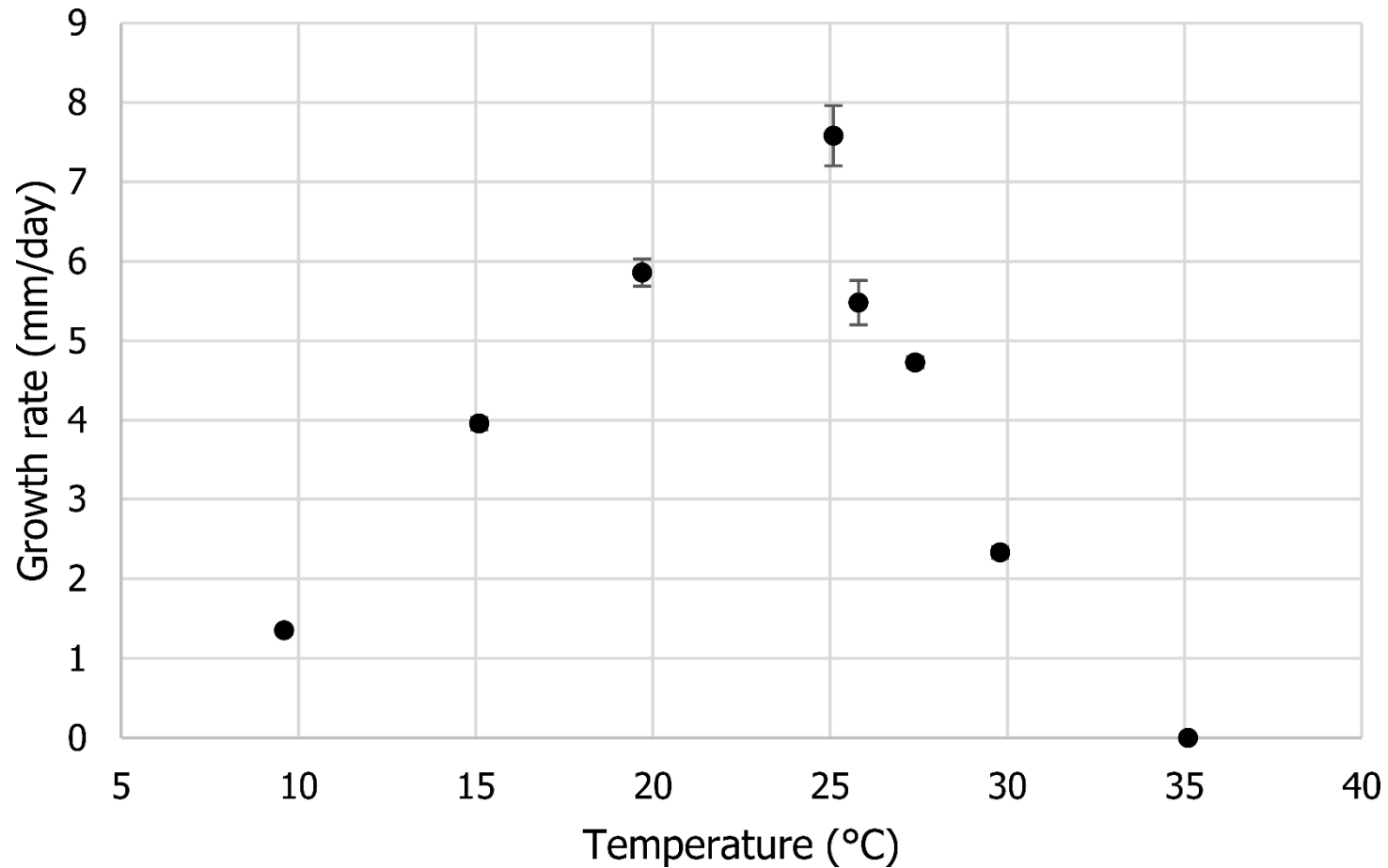


Sajasto odmiranje skorje, *Cryptostroma corticale*

- Iz istega gozdnega sestoja smo odvzeli tri dodatne čoke, iz navidezno zdravih gorskih javorov.
- Ponovno smo jih gojili pri sobni temperaturi.
- Čez 9 tednov, so se pojavili tipični simptomi za sajasto odmiranje skorje.

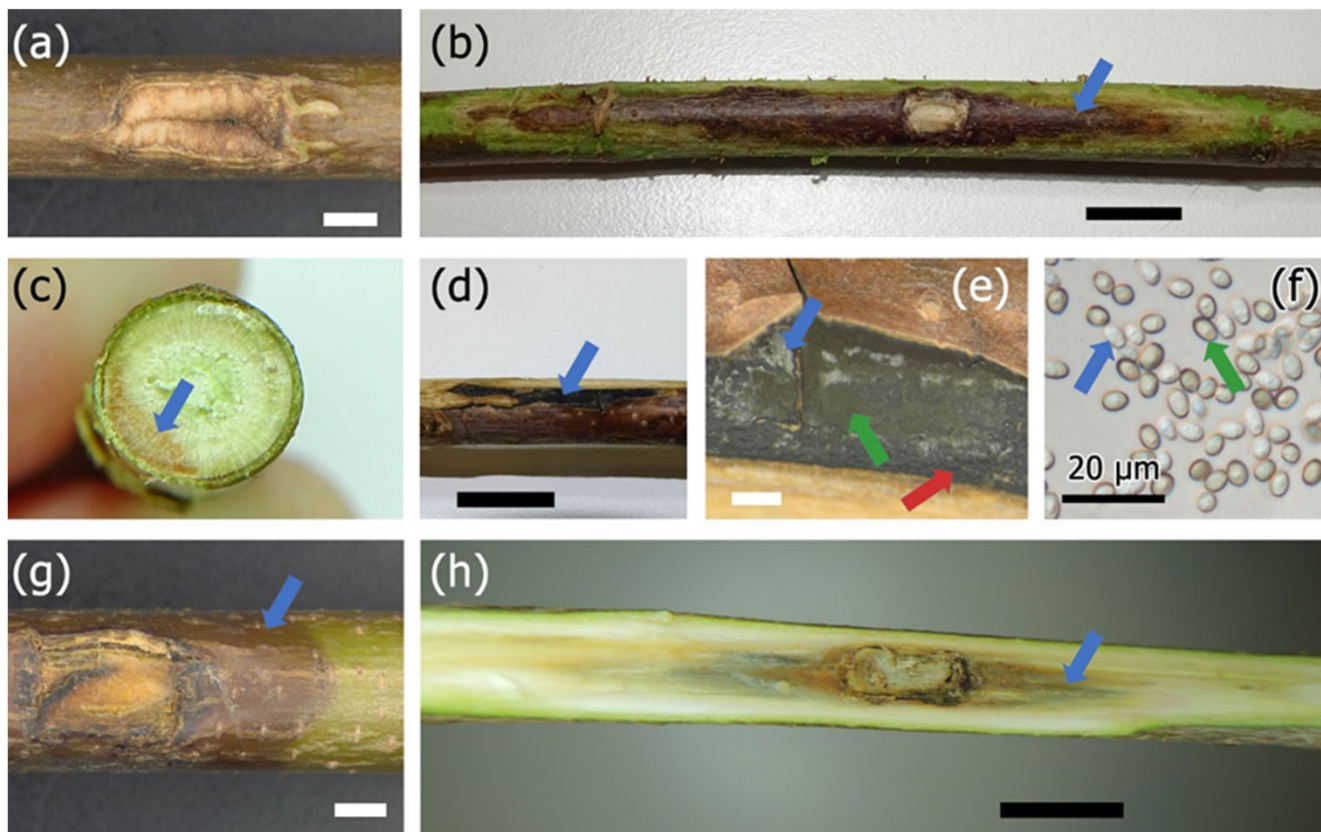


Optimalna temperatura za rast

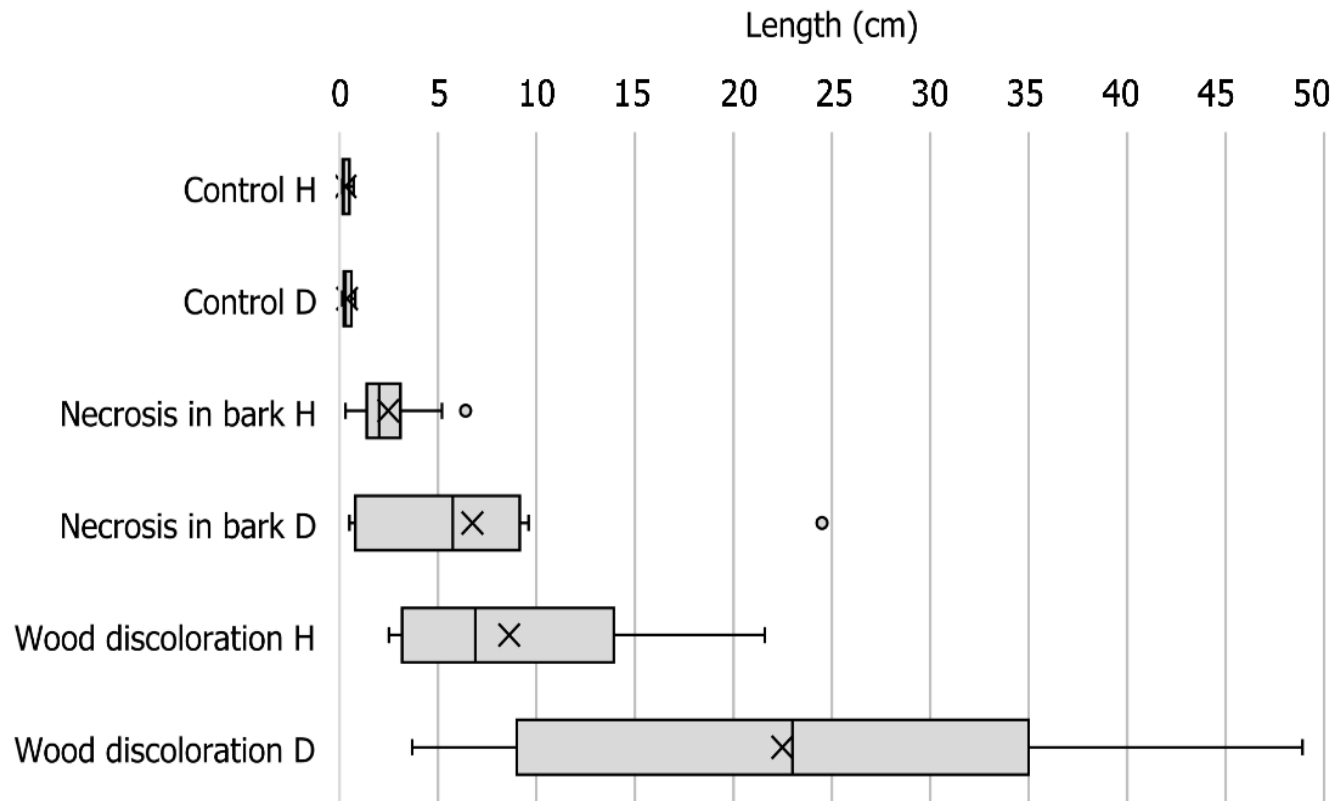


Test patogenosti

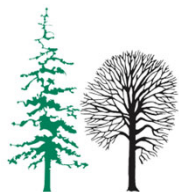
- 30 sadik gorskega javorja, 2 leti stari, smo gojili v rastni komori pri 25°C in 60 % relativni zračni vlažnosti.
- Uporabili smo dve obravnavi (15 sadik na obravnavo):
 1. Vlažna – zalivanje 2× na teden 2 dl
 2. Sušna – zalivanje 1× na teden 2 dl
- Reizolacije smo naredili čez 38 dni.



Test patogenosti

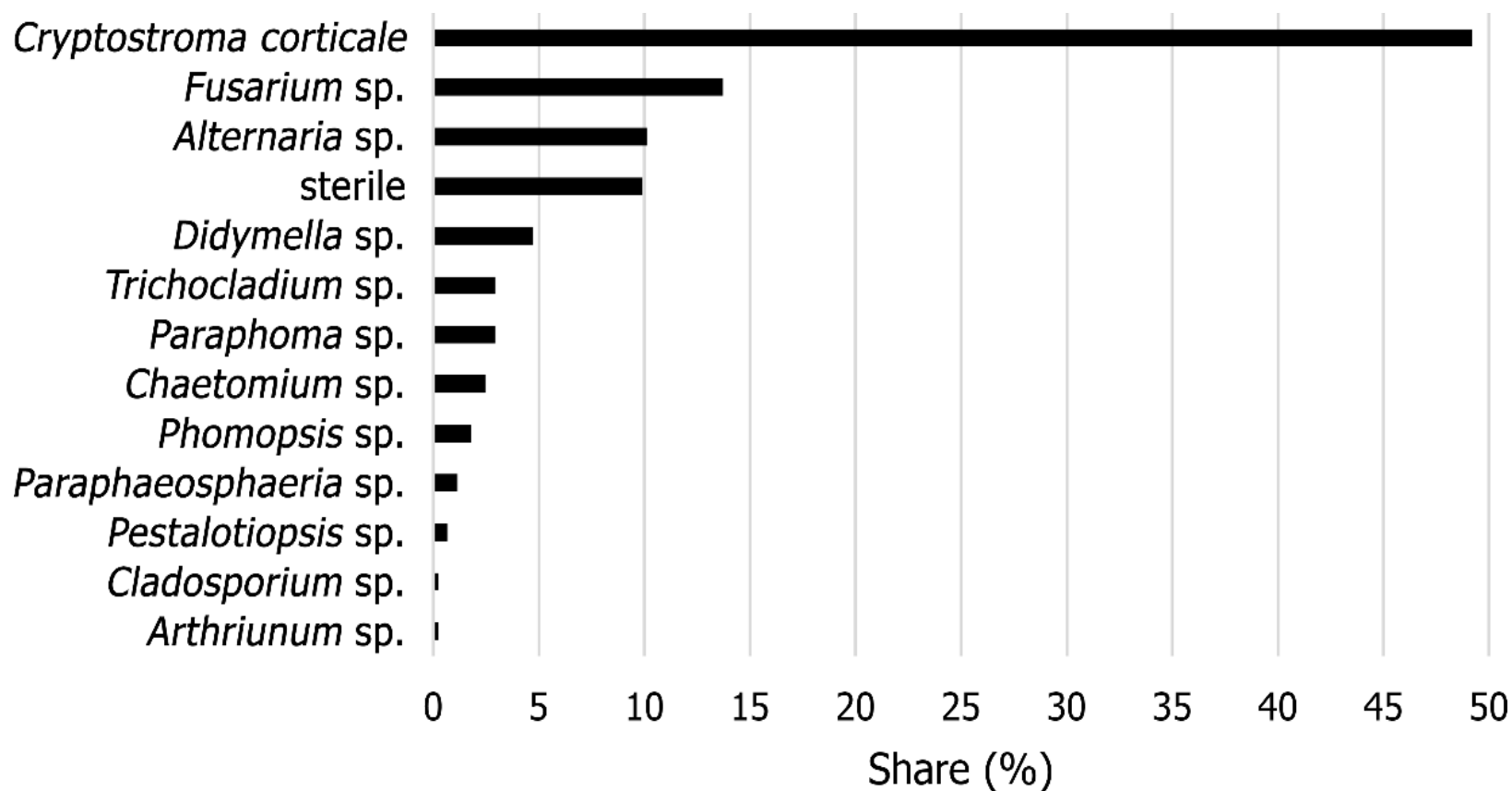


H – vlažno, D – sušno obravnavanje



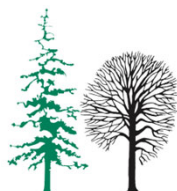
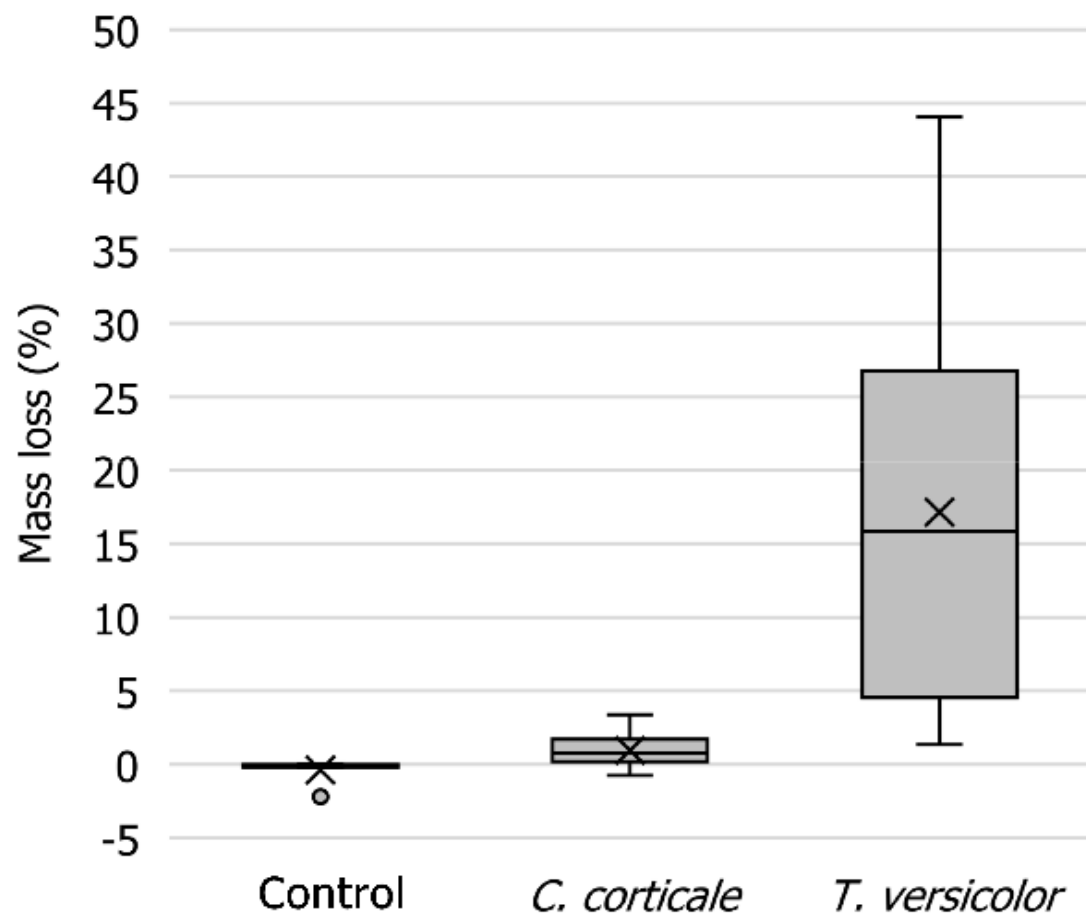
Test patogenosti

Glive izolirane iz dve leti starih sadik gorskega javorja, ki so bile inokulirane z *Cryptostroma corticale*, po 38 dneh pri 25°C (n = 445)



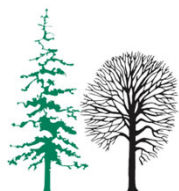
Izguba lesne mase

Graf prikazuje izgubo lesne mase (%) gorskega javorja po 10 tednih izpostavljenosti *Cryptostroma corticale* in *Trametes versicolor*



Pomen

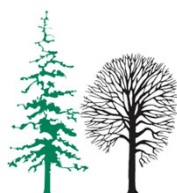
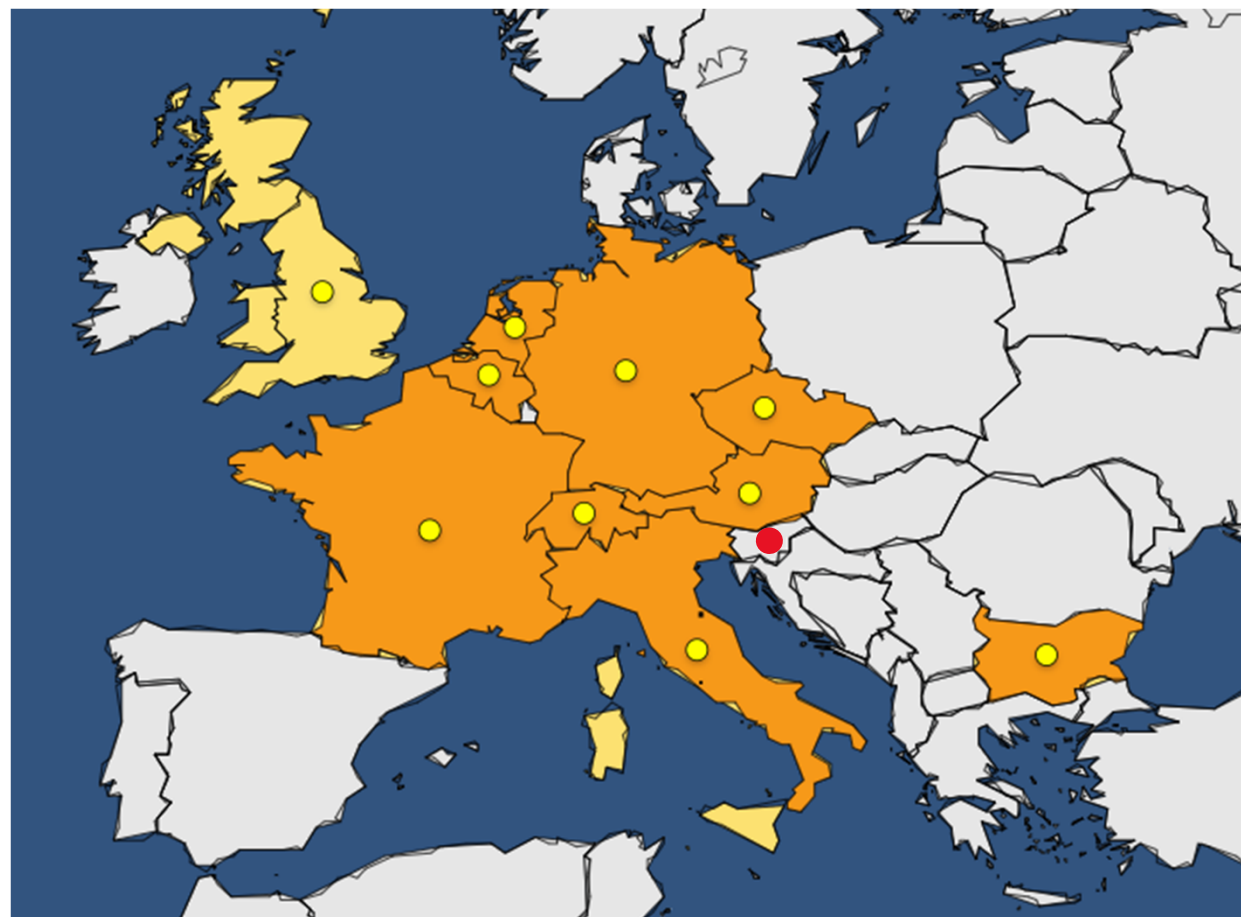
- V prihodnosti bi lahko bila bolezen pogostejša zaradi podnebnih sprememb, pod pogojem, da bo več suš in da bo topleje.
- Gliva pri ljudeh povzroča preobčutljivostni pnevmonitis ali ekstrinzični alergijski alveolitis:
 - pri ljudeh, ki delajo z okuženim deblom;
 - sekači, gozdarji, lesarji.
- Pri delu z okuženim deblom s trosišči je priporočljiva uporaba zaščitnih sredstev (mask).
- Gliva se pogosto pojavlja tudi v mestnih drevoredih (javor je najpogostejše sajeno drevo v MOL).



Razširjenost

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Article

Drought Stress Can Induce the Pathogenicity of *Cryptostroma corticale*, the Causal Agent of Sooty Bark Disease of Sycamore Maple

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Abstract: Reports of sooty bark disease of maples caused by the fungus *Cryptostroma corticale* have recently been emerging from across Europe. The aims of our study were to describe the first report of sooty bark disease in Slovenia, to determine the pathogenicity of *C. corticale*, to confirm the optimum temperature for the growth of the fungus, and to determine the mass loss of *Acer pseudoplatanus* wood inoculated by *C. corticale*. We confirmed the presence of *C. corticale* on *A. pseudoplatanus* via morphological and molecular analysis. The optimal growth of *C. corticale* was measured in vitro on potato dextrose agar and was determined to occur at 25 °C. Pathogenicity tests were performed on 30 saplings of *A. pseudoplatanus* under two treatments, humid and drought stress, and the fungus was pathogenic in both treatments. The mean length of bark lesions and wood discoloration of the drought-stressed saplings was significantly greater than that in the humid treatment. Re-isolations of *C. corticale* were successful from all inoculated saplings, and thus Koch's postulates were confirmed. The mass loss of *A. pseudoplatanus* wood was determined by mini-block test in a period of 10 weeks and was observed as minimal. Based on the results, we conclude that *C. corticale* is a weak and opportunistic pathogen that most likely expresses itself intensively under hot and dry conditions.

Keywords: pathogenicity; drought stress; optimal growth; climate change; mass loss; mini-block test; wood rot; opportunistic pathogen; saprophyte; endophyte

1. Introduction

Sooty bark disease of maples is caused by the fungus *Cryptostroma corticale* (Ellis & Everh.) P.H. Greg. & S. Waller [1]. It is distributed in North America [2] and in most countries of Western and Central Europe, i.e., Great Britain [3], France [4], the Netherlands [5], Belgium [6], Germany [7,8], the Czech Republic [9,10], Austria [11,12], Italy [13], Switzerland [14], and Bulgaria [15]. Most of the countries surrounding Slovenia have already reported the disease, but it has not been reported in Slovenia until now.

The hosts of *C. corticale* are maples (*Acer* spp.). It most frequently infects sycamore maple (*A. pseudoplatanus* L.), field maple (*A. campestre* L.), Norway maple (*A. platanoides* L.) and box elder (*A. negundo* L.) [16]. Maples are one of the most important hardwood tree species in Slovenia, and therefore the presence and spread of sooty bark disease would raise serious concerns.

Wounds serve as entry points for the fungus, which quickly invades the wood and later also the phloem [9,16,17]. *Cryptostroma corticale* is recognized as an endophyte, latent invader, saprophyte, and weak pathogen that favors hot and dry periods [9,10,13,15,17,18]. Because of its preference for hot and dry weather, some studies predict more frequent outbreaks of sooty bark disease in the future due to climate change [9,10,19].

The first suspicious case of sooty bark disease was observed in October 2019 on a chunk of *Acer pseudoplatanus* that was collected in February 2019 in the central part of Slovenia (46.13369° N, 14.77848° E) and displayed in the hallway of the Slovenian Forestry

Zahvala

Raziskava je nastala v sklopu:

- Programska skupina Gozdna biologija, ekologija in tehnologija (P4-0107, mlada raziskovalka A.B.), Javna agencija za raziskovalno dejavnost RS
- JGS-GIS, Ministrstvo za kmetijstvo, gozdarstvo in prehrano

