Controlling the spread of invasive species with innovative methods in road construction and maintenance

http://www.controlinroad.org/

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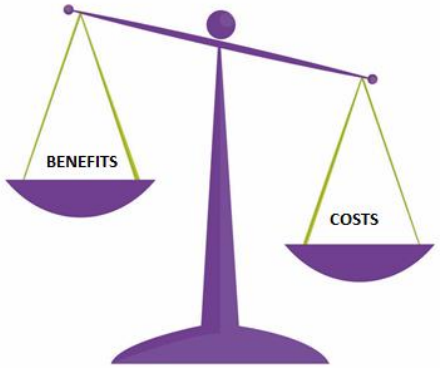
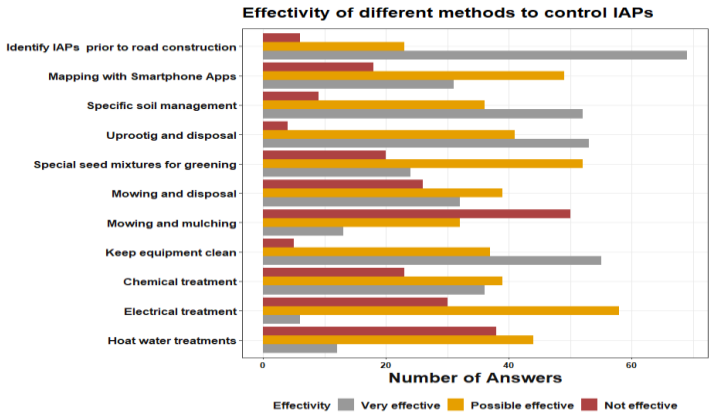
Recommendations for the management of IAPs

What is the cost/benefit of alternative control methods



Which alternative methods exist to control IAPs



What is the current knowledge on the IAPs management?

Which IAPs are related to roads?

Bad news: There is no general solution to control IAPs

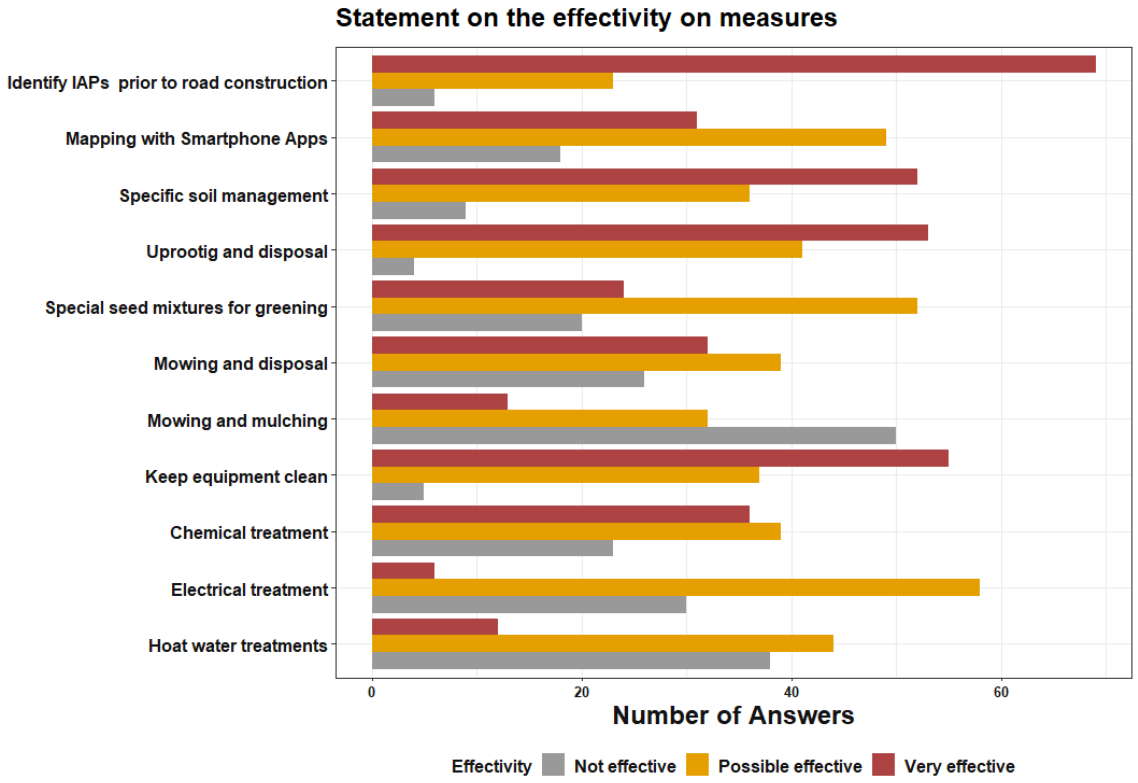
Why IAPs are still spreading

- In many countries the excavated soil containing IAPs is not properly disposed of
- Sites with infestation of IAPs are not taken out from the daily maintenance work

General recommendations:

- Legislation for the treatment of contaminated soil is needed
- Training of people to recognize IAPs
- Special treatment of IAPs sites needed
- Clear competence and budget needed
- Ranking of IAPs sites for the treatment (not all sites at the same time)

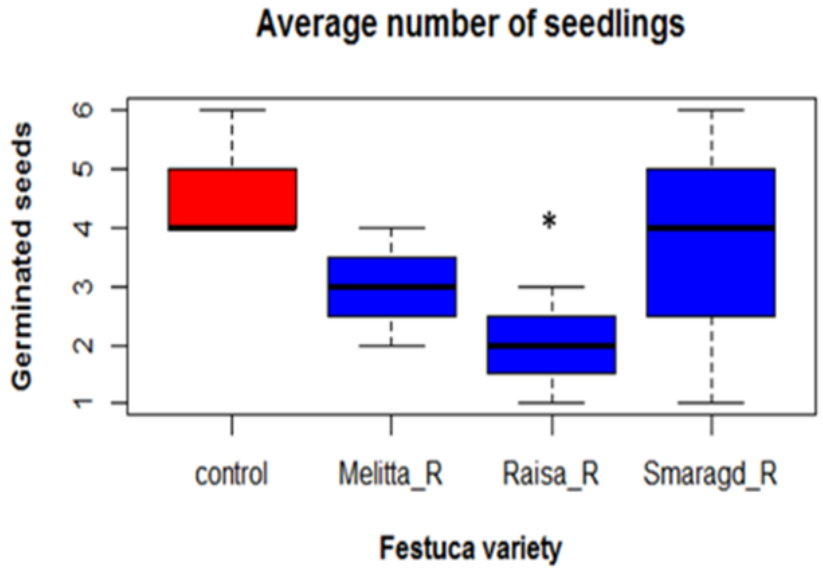
How to control IAPs without glyphosate?



Biological control IAPs:

Microorganisms (*Verticillium nonalfalfae* against Tree of Heaven)

Competence between plant species



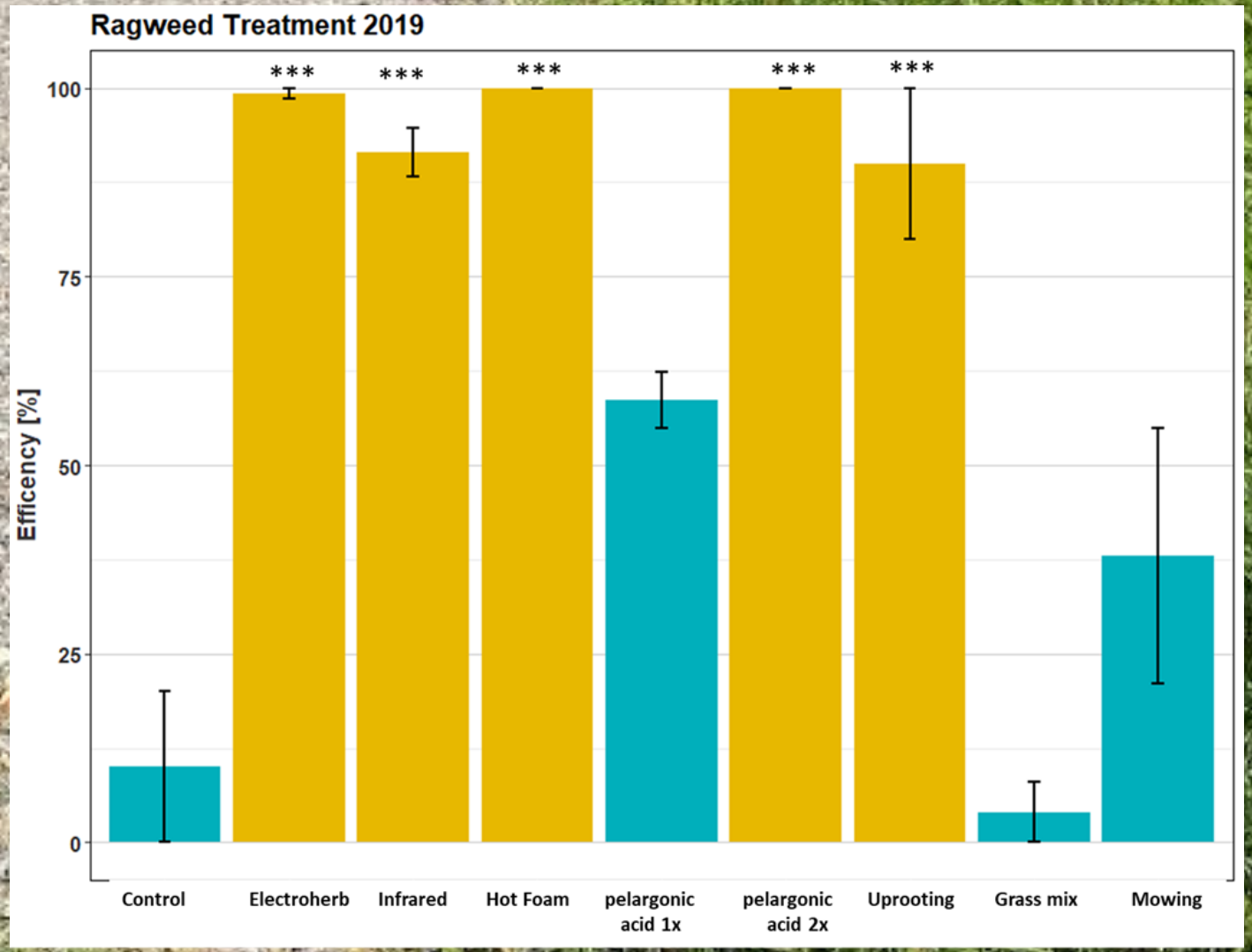
Technical development: Electricity, Hot foam, Laser, Infrared







Results - Field Trials



Field trials Ragweed

Field trials Knotweed

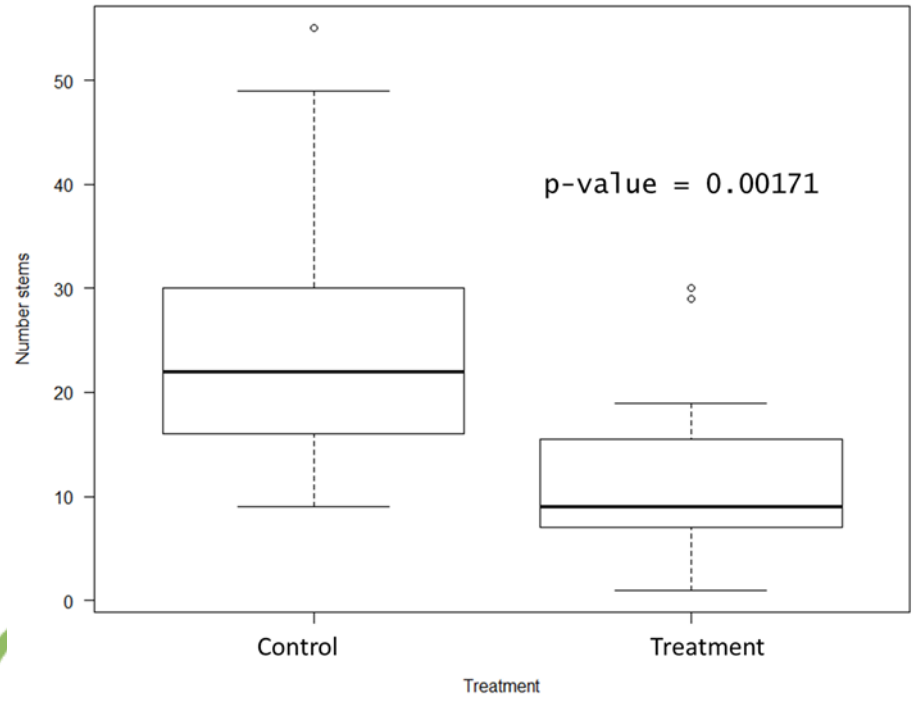
Treatment with Electroherb™

	2018				2019			
	July		September		July		September	
	Mulch	Electroherb	Mulch	Electroherb	Mulch	Electroherb	Mulch	Electroherb
Location 1	x	x	x	x	x	x	x	x
Location 2		x	x	x	x	x	x	x
Location 3			x	x	x	x	x	x

Results

No differences in the number of stems in the control and electricity treatment

Number of stems larger than 50 cm

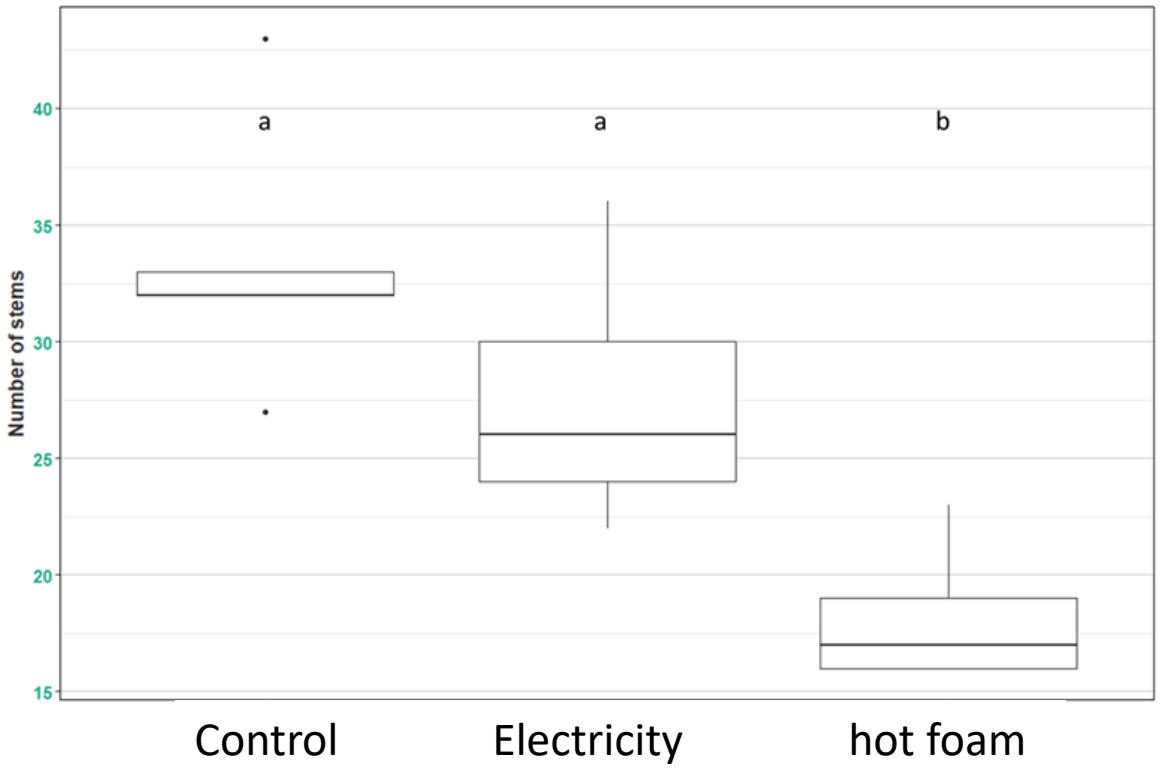


Smaller plant means less photosynthesis

Less storage of nutrients in the rhizomes

Aim is to weaken the plants

Emerging new plants in spring 2020

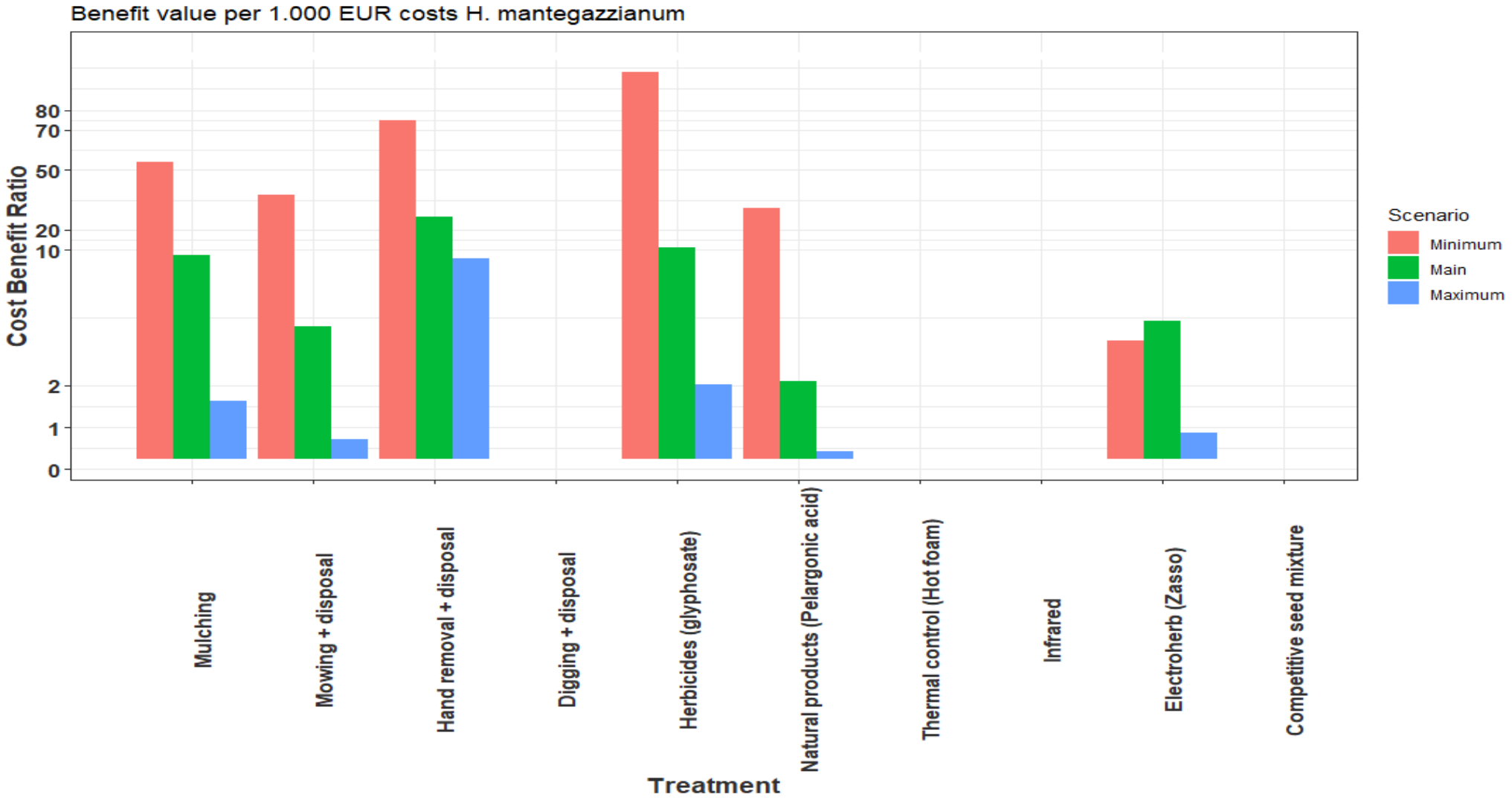


The treatment with hot foam resulted in less new plants in the following season

Recommendations for the control of knotweed

- The treatment of knotweed requires several years
- The treatments should be done at least twice a year, first after the plant has reached its full size and then before the nutrients can be stored in the rhizomes.
- Mulching and additional treatments that also damage the rhizomes are recommended.
- Hot foam also appears to damage the rhizomes and should be further tested.
- The sites must be observed for at least 10 years and single plants must be eliminated.

Evaluation of the costs and the benefits of selected control methods



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