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УДК 634.24:581.5

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**CONTROL EXPERIMENT AGAINST AN INVASIVE WEED, THE BLACK CHERRY
 (PRUNUS SEROTINA)**

**(КОНТРОЛЬНЫЙ ЭКСПЕРИМЕНТ ПРОТИВ ИНВАЗИВНОГО ВИДА ЧЕРЕМУХА ПОЗДНЯЯ
 (PRUNUS SEROTINA))**

Приводятся экспериментальные данные искоренения инвазивного вида *Prunus serotina*. На 20 опытных участках были использованы 8 видов гербицидов и их соединений. Обработка *Prunus serotina* проводилась путем полива, нанесения и опрыскивания гербицидами. Эксперимент показал более эффективное применение нанесения.

Introduction

Europe is characterized by its biological diversity. The non-native plants are aggressively spreading more and more and that means threat to the continent.

The importation of foreign plants can be conscious (introduced) or unconscious (not introduced). Many non-native plants tolerance to broad, fast ontogenesis, plenty of harvest and efficient seed dispersal, and it has vegetative reproductive capacity. These features greatly facilitate the successful colonization in new environments and massive proliferations. Allelochemicals released by the alien

plants are further great benefits to newcomer species of native vegetation conquest. One of the most dangerous invasive woody plant species in the Hungarian forestry is *Prunus serotina*.

**Introduction of the
*Prunus serotina***

The official scientific name is *Prunus serotina* EHRH. Within the Rosaceae family it belongs to the genus *Prunus*, classified within the Subgenus *Padus*. Four variety can be separated, var. *serotina*, var. *eximia*, var. *rufula*, and var. *virens*.

Comes from the eastern part of North America. Economically sig-

nificant within the territory where distributed.

The first appearance date from Hungary is 1897. Initially planted as an ornamental tree, but also experimented with economic exploitation of the forest in the first half of the 20th century. The *Robonia pseudoacacia* also from America, is one of Hungary's most important economic tree species. Large, unmixed populations are growing in the sandy lowland areas. The *Prunus serotina* was planted in to the unmixed *Robinia pseudoacacia* with the aim to create a second level of the canopy. In terms of the Economic growth they had high hopes, but the Hungarian agricultural areas

showed negative figures due to size and shape characteristics are not fulfilled. In the 1970s onward spread explosively and settled in areas where it was not planted (Fig. 1). Spread is still in progress, and the *Robinia pseudoacacia* is for the forest regeneration one of the most dangerous weeds.

Birds like its fruit, they are very significantly involved in their dissemination. One problem is that the natural stands of trees and shrubs forming regrowth the fast growing *Prunus serotina* seedlings suppressed. Foliage, shoots containing highly toxic cyanogen glycoside, so neither wild nor insects are not eating it. Species behave aggressively, soon to bear fruit, cut out the tribes around the shoots quickly appear and grow vigorously.

The *Prunus serotina* reduction from a highly infected area is a difficult task. The mechanical control can only be effective if the seedlings or saplings of several years pulled out by the roots and destroyed. Older trees, cutting down trees in itself does not work. The strong sprout more regular training intervention is required.

The use of pesticides in sprout formation is preventable, but also the shoots may emerge successfully be suppressed.

Materials and methods

I compared the results of examinations against plant weed control. Attempts have been made seed spread core tree trunks (injection and lubrication) and into sprouting in forest restoration treatment (spraying).

The area I investigated was the forestry and wood Ltd. of Nagykunság, at a closer part to Üllő, in between 18E and 18H forest installments. The main characteristics of two adjacent ar similar to each other:

- The forest is located in the steppe climate, hydrology excess water impact, independent genetic type of soil humic sand, topsoil thickness of medium depth, physical kind of sandy soil, topography and slope of the area is flat.

The trunk treatment was in 18E of forest installment. The Tree Holdings: 90% locust *Robinia pseudoacacia* in 10% Populus

x euramericana cv „I-58/57”. The age of the population is 12 years.

The treatments were made on 27. 05. 2012. and on 08. 06. 2102. In the trunk of *Prunus serotina* lubrication individuals, each has been treated with 30 cm stem length. Depending on the diameter of the trunk for each plant protection product is 0.2-0.4 litre was applied to the surface. During injection, not all individuals were treated. Specimens with a diameter of less than 5 cm remained untreated. In all plants treated with 3 holes were prepared, a 45° slope, the helically disposed strain, the diameter at breast height. These holes injected with 1-1 ml of herbicides, veterinary public extinguisher. The potential leaching, spillage, evaporation in order to inhibit the drug can not enter the environment after the introduction of the chemical silicone adhesive sealant holes were closed.

The scion of the treatments was made in 18H forest installments. The populus mixed *Robinia pseudoacacia* tree was produced before last autumn. The examination was performed during the

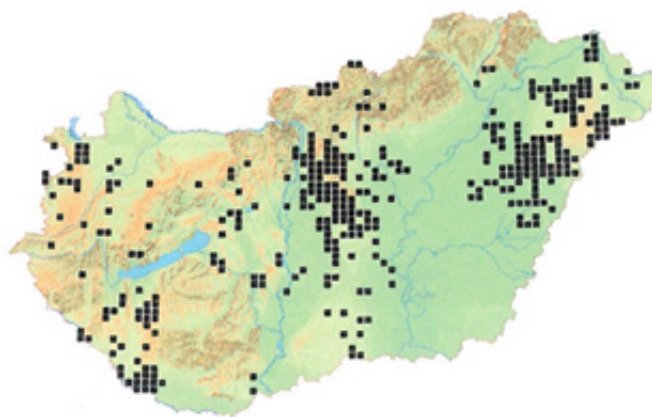


Figure 1. The *Prunus serotina* distribution territory and occurrence

forest restoration. The area, were treated with hydraulic knapsack sprayers *Prunus serotina* freshly sprouted shoots. Treatment date: 20. 05. 2012.

The two portions of total forest area, 26 samples of eight different herbicide or herbicide combination used for the injection, lubrication and spraying of *Prunus serotina*.

The effectiveness were evaluated visually. Successfully been considered those treatments in which

the treated plants withered, and were not shoots developed. Examined during the evaluation of the effects of treatments on *Robinia pseudoacacia* flocks.

Achievements

Evaluation of lubrication and injection experiments

The core areas of the sample treated with lubrication, diesel Garlan 1: 3 mixture of BFA P code-named combination of the

chemical. Areas treated with the combination could successfully defend against the *Prunus serotina* (Tab. 1 and Tab. 2).

After the experiments carried out by injection of *Prunus serotina*, observed powerful destruction and minimal germination. The Banvel-Silwet-water and Banvel-Medallon-Silwet combinations of the effect is so powerful that the nearby *Robinia pseudoacacia* symptoms can cause decay (Fig. 2).



Figure 2. One efficient and one non efficient results in the trunk treatments

Table 1

Results of lubricational experiments

No.	Treatment	Active substance	Rate	Treated amounts of plants	Phytotoxicity	Affects on <i>Prunus serotina</i>
1	Garlon 4E : fuel oil	480 g/l triklopir	1 : 3	59	-	Effective
2	Garlon Duplo : fuel oil	84 g/l triklopir + 29 g/l fluoxipir-metilheptil-ester	1 : 1	37	-	Not effective
3	BFA G	glyphosate + additive + adhesive	0,2-0,4l	17	-	Not effective
4	BFA A	glyphosate + additive + adhesive	0,2-0,4l	52	-	Not effective
5	BFA P	glyphosate + additive + adhesive	0,2-0,4l	8	-	Effective

Table 2

Results of injectional experiments

No.	Treatment	Active substance	Rate	Treated amounts of plants	Phytotoxicity	Affects on <i>Prunus serotina</i>
1	Medallon Premium Mezzo water	360 g/l glyphosate 20 % metsulphuron-methyl	75 ml 5 g 15 ml	51	-	Effective
2	BFA G	glyphosate + additive + adhesive	0,2-0,4l	48	-	Effective
3	Garlon 4E: fuel oil	480 g/l triklopir	1 : 3	55	-	Effective
4	BFA A	glyphosate + additive + adhesive	0,2-0,4l	75	-	Effective
5	BFA P	glyphosate + additive + adhesive	0,2-0,4l	11	-	Effective
6	Barvel 480 S water Silwet L-77	480 g/l dicamba + 84 % polyalkilenoxid + 16 % polypropilen isomer	50 ml 50 ml 1 ml	10	+	Effective
7	Barvel 480S Medallon Premium Silwet L-77	480 g/l dicamba + 360 g/l glyphosate + 84 % polyalkilenoxid + 16 % polypropilen isomer	50 ml 50 ml 1 ml	19	+	Effective

Evaluation of spraying methods

The majority of the different doses tested treatments effectively destroyed the intensively developing stump shoots. The Medallon-Agrol is an effective combination of technology without adding Galigan and Mezzo. Minimum of

5% and 5% of the dose formulations of experiments have achieved good results in the suppression of sprouts and shoots successfully prevented the further formation (Tab. 3, Fig. 3).

The *Prunus serotina* infected *Robinia pseudoacacia* populations protection should be made

through combined methods. Prior to the final cut to older flocks slaughter strain treatment is suggested. The 5 cm at breast height specimens for thinner body lubrication, the thicker trees should be treated by injection. This shall be done during the growing season. Upon a successful defense after



Figure 3. One efficient and one non efficient results in the scion of the treatments

Table 3

Results of spraying experiments

No.	Treatment	Active substance	Rate	Treated amounts of plants	Phytotoxicity	Affects on <i>Prunus serotina</i>
1	Medallon Premium	360 g/l glyphosate	20%	11	-	Effective
	Agrol Plus	90 % oil (paraffin)	20%			
2	Medallon Premium	360 g/l glyphosate	10%	18	-	Effective
	Agrol Plus	90 % oil (paraffin)	10%			
3	Medallon Premium	360 g/l glyphosate	5%	11	-	Effective
	Agrol Plus	90 % oil (paraffin)	5%			
4	Medallon Premium	360 g/l glyphosate	20%	19	-	Effective
	Agrol Plus	90 % oil (paraffin)	20%			
	Mezzo	20 % metsulphuron-methyl	100 g/ha			
5	Medallon Premium	360 g/l glyphosate	10%	8	-	Effective
	Agrol Plus	90 % oil (paraffin)	10%			
	Mezzo	20 % metsulphuron-methyl	100 g/ha			
6	Medallon Premium	360 g/l glyphosate	5%	13	-	Effective
	Agrol Plus	90 % oil (paraffin)	5%			
	Mezzo	20 % metsulphuron-methyl	100 g/ha			
7	Medallon Premium	360 g/l glyphosate	20%	21	+	Effective
	Agrol Plus	90 % oil (paraffin)	20%			
	Galigan 240 EC	240 g/l oxyfluorfen	3%			
8	Medallon Premium	360 g/l glyphosate	10%	13	+	Effective
	Agrol Plus	90 % oil (paraffin)	10%			
	Galigan 240 EC	240 g/l oxyfluorfen	3%			
9	Medallon Premium	360 g/l glyphosate	5%	8	-	Effective
	Agrol Plus	90 % oil (paraffin)	5%			
	Galigan 240 EC	240 g/l oxyfluorfen	3%			
10	Medallon Premium	360 g/l glyphosate	20%	11	-	Effective
	Agrol Plus	90 % oil (paraffin)	20%			
	Mezzo	20 % metsulphuron-methyl	100 g/ha			
	Galigan 240 EC	240 g/l oxyfluorfen	3%			
11	Medallon Premium	360 g/l glyphosate	10%	10	-	Effective
	Agrol Plus	90 % oil (paraffin)	10%			
	Mezzo	20 % metsulphuron-methyl	100 g/ha			
	Galigan 240 EC	240 g/l oxyfluorfen	3%			
12	Medallon Premium	360 g/l glyphosate	5%	19	-	Effective
	Agrol Plus	90 % oil (paraffin)	5%			
	Mezzo	20 % metsulphuron-methyl	100 g/ha			
	Galigan 240 EC	240 g/l oxyfluorfen	3%			
13	Tomigan 250 EC	360 g/l fluroxipir-meptil	3%	27	-	Not effective
14	Taitos 450 W/G	355 g/kg potassium aminopyralide + 150 g/kg florasulam	50 g/ha	37	-	Effective

the final cut there wont any sprout formation.

The treatment of individuals recovering from vigorous treatment may be left out and the thinner sprouts stock down after the formation of granulation production-intensive produce. It is

recommended to use knapsack sprayers against the proposed treatment shoots. The treatment should be carried out at spring time, as have not yet been very strong leaves, but sufficient leaf surface for capturing the pesticide shoots.

Efficient products are presented in the Results section, only recommended, which the *Robinia pseudoacacia* phytotoxic symptoms do not provoke. To be continued experiments is suggested and concoction tested at lower doses as well.