



# Investigations into the chemical control of *Heracleum mantegazzianum*

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### Aim

- Testing the efficacy of herbicide treatments and application methods
- Determine the long-term effect of the control measures

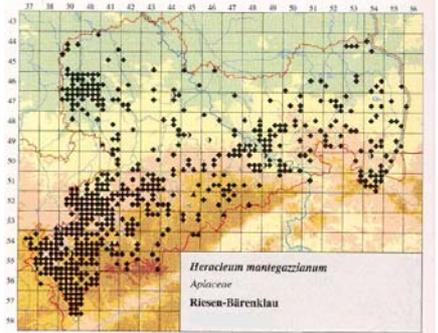
### Field trials

- Field trials were conducted on three sites Dresden, Chemnitz and Leipzig using the natural populations of *Heracleum mantegazzianum*
- Investigations concerned areas, in which the regional agricultural and nature conservation authorities are trying to find an effective form of treatment
- Field trials were designed as randomized blocks with 2-4 replicates
- Size of a plot ranged from 15 to 20 m<sup>2</sup>

### Herbicides

- In Germany, the use of triclopyr and glyphosate is authorized in the control of *H. mantegazzianum* on non-arable land
- It requires an **official permit of the local agricultural authority**
- In contrast to glyphosate-based herbicides, triclopyr has no effect on grass-species and only controls some broad-leaved species

Occurrence of *H. mantegazzianum* in Saxony  
(Source: Hardtke H.-J., Ihl A., 2000)

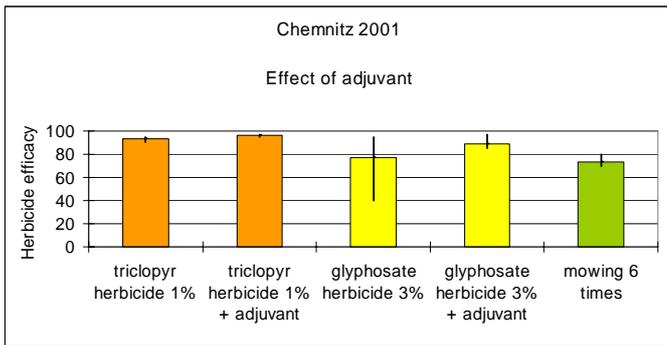


- ◇ Established alien species till 1949
- ◆ 1950 - 1989
- 1990 - 1999
- ▲ not established alien species



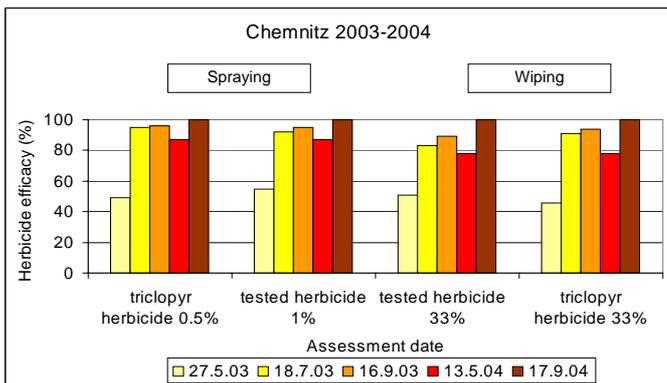
Large-area population of *H. mantegazzianum* on a slope in Döbeln district in Saxony  
The cost of treatment (herbicide and man-power) for this area of 1.9 ha amounted to 11 thousand euros in the years 2002-2004.  
(Source: Lakuwa GmbH)

Applications were carried out on single plants in the spring or summer of 2001, 2003 and 2004 on *H. mantegazzianum* at a height of 5 to 150 cm.



Herbicide	Active ingredient	Spraying*	Wiping*	
Garlon 2	Triclopyr 240 g/l	1 % **		
Garlon 4	Triclopyr 480 g/l	0.5 % **	20 % **	33 % **
Tested herbicide	Triclopyr 240 g/l + clopyralid 60 g/l	1 % **		33 % **
Roundup Ultra	Glyphosate 360 g/l	3 % **		
Adjuvant Frigate	Ethoxylated tallow amine 822 g/l	2.5 ml/l **		

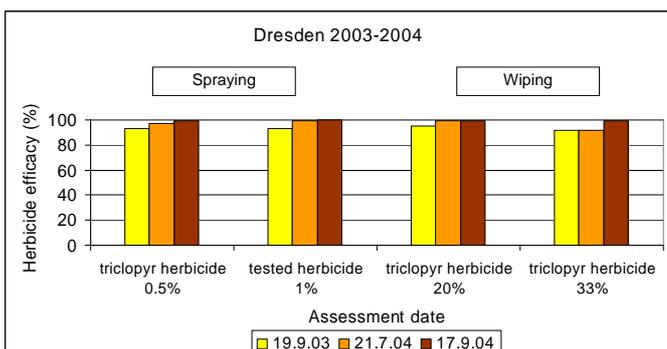
\* single plant application  
\*\* in aqueous solution + herbicide



Gradual control of *H. mantegazzianum* after triclopyr application  
Triclopyr is not phytotoxic to grass-species and to many broad-leaved species



Regeneration of *H. mantegazzianum* after mowing



### Conclusions

- Two-year treatments on the same areas demonstrated very good control
- No significant differences were noted between the spraying and wiping
- Wiping could be an alternative, especially in areas, where *H. mantegazzianum* grows in a community with sensitive non-target plants
- New seedling emergence of *H. mantegazzianum* may be very high
- Treatments over several years in the same areas are necessary in order to exhaust the seed bank