



European Weed Research Society

**Weed Mapping Working Group
Second Workshop**

Jokioinen, Finland 21-23 September 2011

**Weed Surveys in Agricultural
Fields in Latvia**

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Land Use in Latvia

	hectares thousands	
Total	6459	
		%
Agricultural area	2430	38%
Forests	2955	45%



Sown area in Latvia

	hectares thousands	
Total	1173	(48%) %
Cereals	542	46%
Rape	111	9%
Potato	30	3%
Forage crops	427	36%



Weed Flora Surveys

- 1947
- 1970 - 1980
- 1997 - 2000

Species ranked by frequency of occurrence



Changes in Latvian Agriculture

- 1950s - collectivisation
 - Large farms
 - Tractors replaced horses
 - Universal weed control
 - Blanket use of chlorphenoxy herbicides



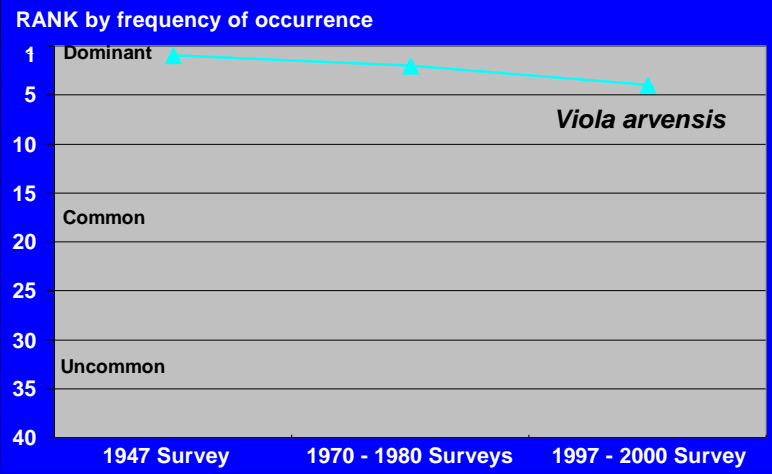
Changes in Latvian Agriculture

- 1950s - collectivisation
 - Large farms
 - Tractors replaced horses
 - Universal weed control
 - Blanket use of chlorphenoxy herbicides
- 1990s - restoration of private farms
 - Disorganised agricultural market
 - High costs of energy and inputs
 - Little use of herbicides



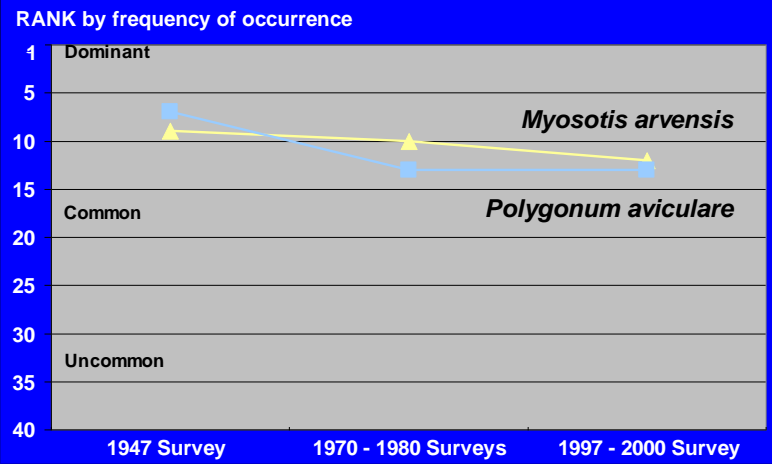
Changes in Weed Flora

Always very prevalent

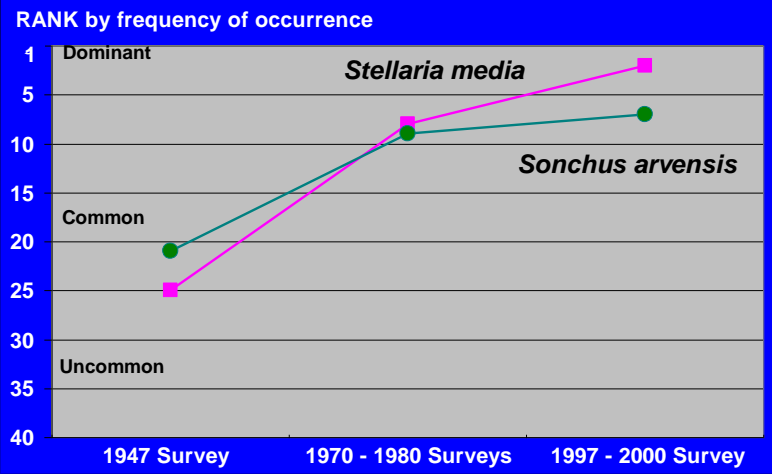


Changes in Weed Flora

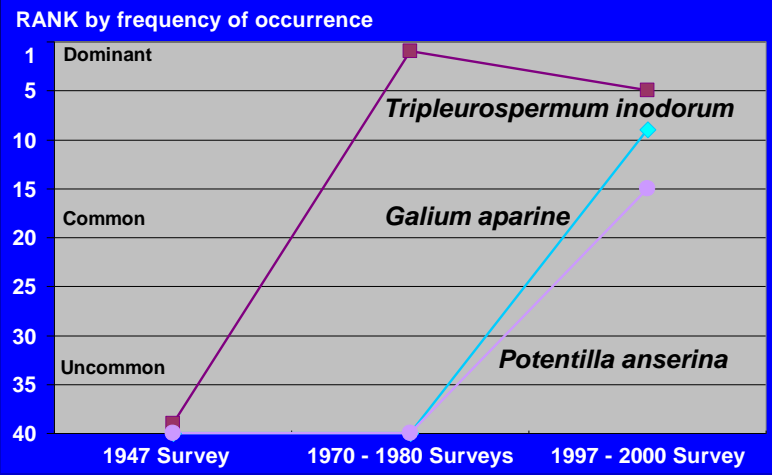
No change in frequency



Changes in Weed Flora Frequency increasing



Changes in Weed Flora Previously rare, now common



Changes in Weed Flora

Previously common, now rare

- *Achillea millefolium*
- *Agrostema githago* *
- *Bromus secalinus* *

* now extremely rare
- designated for protection in Latvia



Top weeds in Latvia today:

1. *Elymus repens*
2. *Stellaria media*
3. *Chenopodium album*
4. *Viola arvensis*
5. *Tripleurospermum inodorum*
6. *Polygonum convolvulus*
7. *Sonchus arvensis*



Weed survey in 1947



Weed survey in 1972-1979



Weed survey in 1980-1982



Weed surveys in 1994-1999



Weed survey in 1999-2002



Weed survey in 2002-2011



Observation Fields Surveyed Annually for Nine Years



Weed Assessment

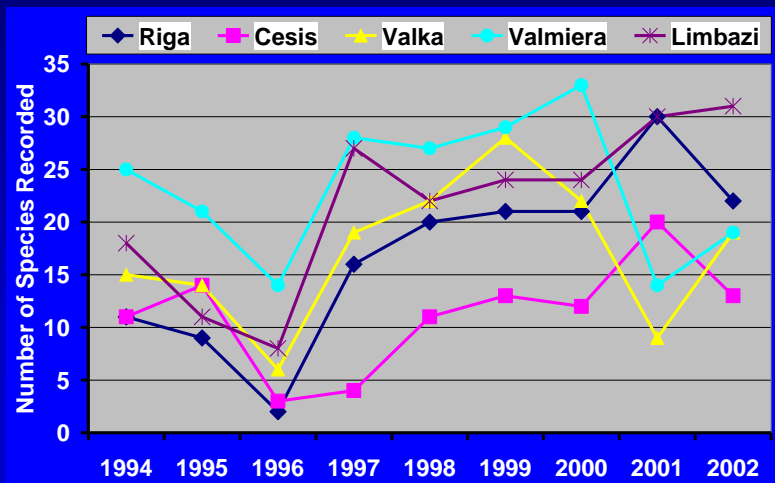


Nine-year Survey of Weeds in Five Observation Fields

Region	Total number of Species
Limbaž	42
Valmiera	51
Rīga	41
Valka	44
Cēs	30



Annual Variation of Species Number in Five Observation Fields

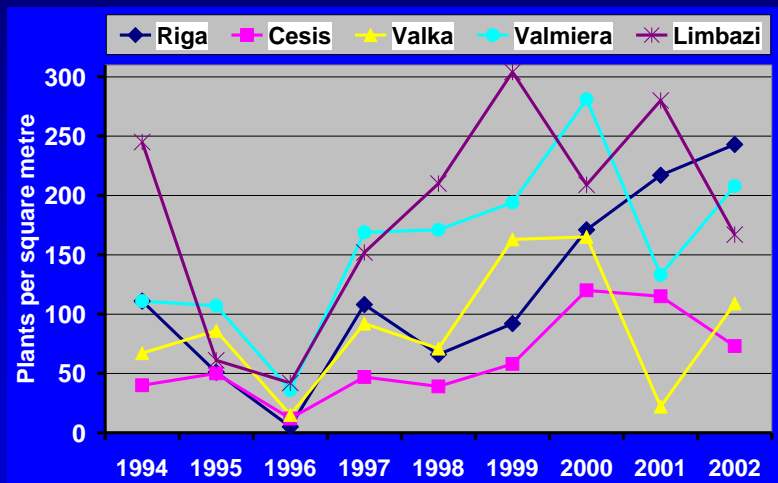


Nine-year Survey of Weeds in Five Observation Fields

Region	Total number of Species	Mean number of Weeds per sq m
Limbaž	42	188
Valmiera	51	150
Rīga	41	103
Valka	44	85
Cēs	30	60



Annual Variation of Weed Density in Five Observation Fields



Prospects for Mapping

- Data from surveys over sixty years
- Changes in space and time
- None of these data have been mapped
- Concern about finance
- Prospect
 - Better understanding of the ecology and dynamics of weeds in our agricultural crops



Latvijas Augu aizsardzības pētniecības centrs
Latvian Plant Protection Research Centre