

5-6 March, 2015 / Brassels

## Ragweed (Ambrosia artemisiifolia) invasion and management

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Brussels, 2015 March 5<sup>th</sup>

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## Index

- Diffusion and management in different European Countries: Italy, France, Germany, Hungary, Switzerland
- International Ragweed Society (I.R.S.)
- COST SMARTER (Sustainable Management of Ambrosia artemisiifolia in Europe)

# **Background** Ambrosia artemisiifolia

- The North-Western area of the Milan Province has been colonized by Ambrosia artemisiifolia since the 1940s<sup>(1)</sup>
- Clinical manifestations of ragweed allergy were frequently observed in allergy clinics located in this area only starting from the middle of the 1980s <sup>(2)</sup>



<sup>(1)</sup>Stucchi C. L'ambrosia elatior. Nuovo Giorn Bot Ital , 1942

<sup>(2)</sup> Bottero P. Pollinosi da Ambrosia artemisiifolia in provincia di Milano. Folia Allergolog Immunol Clin. 1990



## Background



North-Western Milan area:



(3) C. Déchamp, H. Mèon, S. Reznik . Ambrosia artemisiifolia an invasive weed in Europe and adjacent countries: the geographical distribuition before 2009. Ambroisie, the first international ragweed review. 2009, 26:24-46

- zone **most infested** by ragweed in **Italy**, together the nearby Southern Varese area (Lombardy Region)

-one of the zones most infested by ragweed in Europe

## First measures: Regional President's Ordinance

Bollettino Ufficiale della Regione Lombardia

Serie Ordinaria - N. 15 - 12 aprile 1999

#### B) ORDINANZA DEL PRESIDENTE DELLA REGIONE LOMBARDIA

[BUR19960118]

O.P.G.R. 29 MARZO 1999 - N. 25522 Ordinanza contingibile e urgente ai sensi dell'art. 32 della l. 23 dicembre 1978, n. 833 - Disposizioni contro la diffusione della pianta «Ambrosia» nella regione Lombardia al fine di prevenire la patologia allergica ad essa correlata

IL PRESIDENTE DELLA REGIONE LOMBARDIA

in centri urbani, e dall'incuria in cui versano i bordi delle strade, autostrade e ferrovie;

Ravvisata la necessità di acquisire la reale conoscenza dell'infestazione da «Ambrosia» su tutto il territorio regionale a fronte anche del previsto sviluppo acroportuale;

Dato atto che lo sfalcio delle aree infestate, da «Ambrosia» nei periodi antecedenti la fioritura della pianta, se esteso su un ampio territorio, è uno strumento efficace al contenimento della aerodiffusione del polline;

Ravvisata l'esigenza di dover adottare misure contingibili ed urgenti, al fine di evitare per quanto possibile l'insorgenza nei soggetti sensibili delle sintomatologie allergiche e li-

Bollettino Ufficiale della Regione Lombardia

- 2095 -

[3.2.0]

Serie Ordinaria - N. 21 - 17 maggio 2004

[3,2,0]

### D.G. Sanità

(80/20040140) D.d.g. 4 maggio 2004 - n. 7257

Approvazione delle linee guida «Prevenzione delle allergopatie da ambrosia in Lombardia» per gli anni 2004-2006

### **Functions of the Local Health Authority**

- consulting and collaboration to the Mayor
- inform and sensitize the population
- control the Ordinance application

### 3 consecutive mowings prior to blossom:

- Last ten days of June
- Last ten days of July
- •Second ten days of

August

Ultimate goal

to protect citizens' health

### ASL Mi1 Management Strategy: development and improvement

### CONTROL of the TERRITORY

 Aerobiological Monitoring

- Surveillance and monitoring of infested area

- Town planning

### INFORMATION and EDUCATION

-Public Authority -Population Ragweed management and its measuring:

primary prevention actions

ASL Mi1

(LHA Mi1)

STUDIES on METHODS to limit the ragweed spreading

- 1°: 2005-2008

-2°: 2014-2016 (COST SMARTER-UNIV. FRIBOURG**)** 

### EPIDEMIOLOGICAL STUDY

-Collaboration with Allergological Services of the Hospitals

ASSESSMENT of DIRECT HEALTH COST

# Epidemiological studies: the evidences of ragweed allergy

Results of the epidemiological regional studies						
	Prevalence %					
Place/Town	1997	2005				
Bergamo	0	0.80				
Brescia	0	0.60				
Busto Arsizio	8.75	12.27				
Castellanza	#	15.35				
Garbagnate	#	5.18				
Legnano	4.30	10.96				
Magenta – Abbiategrasso	2.37	5.23 -7.49 Mag. -2.92 Abb.				
Rho	3.60	10.16				
Pavia	#	2.30				
Somma L Gallarate	4.73	7.07				
Sondrio	0	0.40				
Vallecamonica	0	0				

Epidemiological studies	Year	Prev.%
Osp.Magenta; sample health-care population	1996	9.2
ASL Milano 1-Osp.Magenta; sample health-care population	2005	14.0
ASL Milano 1- Preliminary results; Sample: population of the Sedriano town	2012	16.4

### **Epidemiological studies: tools**

- Quantify the impact on health due to ragweed
- Necessity to adopt a management strategy preventive measures
- Monitor the efficiency of the management strategy
- Necessity to improve the management strategy

## **Epidemiological study 2012**

(population of the Sedriano town)

SYMPTOMS									
	CONJUNTIVITIS	RHINITIS	ASTHMA	CONJUNT. + RHINITIS	CONJUNT. + ASTHMA	RHINITIS + ASTHMA	CONJUNT. + RHINITIS + ASTHMA		
TOTAL	10	58	18	87	2	25	56		
MALES	5	30	9	41	1	13	25		
FEMALES	5	28	9	46	1	12	31		
TOTAL %	3.9%	22.6%	7,0%	34,0%	0,8%	9.8%	21.9%		
MALES %	50%	51,7%	50%	47,1%	50%	52%	44,6%		
FEMALES %	50%	48,3%	50%	52,9%	50%	48%	55,4%		

The **aggressive allergic behavior** of ragweed pollen was confirmed

### PATIENTS WITH ASTHMA 39.5 %;

RHINITIS 88.3%; CONJUNCTIVITIS 60.6%

## **Epidemiological study 2012** (population of the Sedriano town)

### Features of short ragweed allergy in North Western Milan Area: preliminary results <sup>(4)</sup>

- No association between sexes and ragweed allergy
- **Relations** between **ragweed allergy** and some social demographic parameters: **age**, **level** of **education**, **occupation**

	Features	Odds Ratio	Conclusion
	46-65 years	1.48	Age: risk factor
Age groups	66-80 years	0.43	Age: protective factor
	>80 years	0.069	Age: protective factor
Level of education	High school graduates and University graduates	1.67	Higher educated people show a 1.67 times the risk to allergy
	Employees	1.57	Employees present a risk 1.57 times to develop ragweed allergy
Occupation	Retired people	0.53	Retired people show 0.53 times the risk of developing ragweed allergy.

<sup>(4)</sup> Bonini M. et al. Features of short ragweed allergy in North-Western Milan area: preliminary results. 3rd International Ragweed Conference, Rho (Mi, Italy), 2013. Eur J Aer Env Med, 2, 2013

## **Epidemiological study 2012**

### ASL Mi1 and Magenta Hospital



Ragweed: main cause of pollinosis

- A study, carried out during 2008-2010 in the Allergy Service of the Magenta Hospital, located in this area, showed that 71% of the new patients suffering from pollinosis were allergic to ragweed <sup>(5)</sup>.
- Moreover, many cases of poly-sensitization were observed, mainly with winter and spring pollens, prolonging the exposure to pollen allergens, with a major risk of asthma and heavily weighing related sanitary costs

<sup>(5)</sup> Bonini M. et al. Ambrosia: principale causa di pollinosi a nord-ovest di Milano. Eur J Aer Env Med., 1, 2012

Pollinosi	Num	ero casi/	anno
TOHIIOSI	2008	2009	2010
amb	84	71	67
gram	46	37	33
bet	12	6	6
par	5	5	3
art	1	2	1
сур	2	1	0
plan	1	Þ	1
oli	1	1	2
amo-gram	66	63	66
amb-par	2	3	1
amb-art	5	3	3
amb-plan	0	0	3
amb-bet	14	13	9
amb-oli	3	1	2
amb-gram-bet	11	12	12
amb-gram-par	1	1	5
amb-gram-cyp	0	1	Ø
amb-bet-plan	0	1	1
amb-par-bet	2	1	1
amb-gram-par-oli	1	8	0
gram-bet	4	10	7
gram-par	6	5	1
gram-cyp	0	0	1
gram-oli	3	3	2
gram-bet-art	0	0	1
bet-par	1	0	1
bet-art	0	0	1
Totale	271	240	234

# **Allergy Services data**

### LHA Mi1 jurisdiction



- Data on allergic diseases in general (respiratory, food, etc)
  - not registered in a data base easily accessible
  - not mandatory to be forwarded to the Health Department (National and Local)

### Assessment of direct health cost due to ragweed

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
First examination (€)	83.013	82.810	94.019	104.398	129.123	128.639	121.920	147.206	146.483	152.939	180.599
Control examination SIT patients (€)	114.435	68.216	86.464	73.884	95.361	112.459	112.876	81.663	91.783	84.819	76.403
Allergenic extracts (€)	191.319	141.264	194.064	177.521	223.636	263.734	274.456	275.470	335.256	378.369	333.731
Precription Drugs (€)	1.251.182	1.084.631	639.527	981.656	1.145.266	1.426.646	1.143.661	1.389.622	1.115.623	1.105.310	1.216.590
Clinical admission (€)	32.065	13.496	18.709	11.278	17.498	27.282	13.671	24.321	16.748	20.849	24.128
Total costs (€)	1.672.014	1.390.417	1.032.783	1.348.737	1.610.884	1.958.760	1.666.585	1.918.283	1.705.893	1.742.285	1.831.450

An **increase** in the May vs 2006 - Study: Sept vs Aug + Sept vs Aug vs monthly May average sales for Drugs solds in 4 monthly average monthly average monthly average average vs Aug + Sept municipality (% difference) (% difference) (% difference) (% difference) (% difference) all drugs was pharmacy p=0.00679 p=0.00006 -0.00003 p=0.01 p=0.00007 recorded for May, 212 18 -21.53 % Difference 190.70 71.18 194.63 average August and The total amount of medicine sold in August and September records September a **difference of 343.48%** respect to the per month average

# Studies on methods to limit the ragweed spreading

(2005-2008; ASL Milan 1, Lombardy Region: DG Health - DG Agricolture, Province of Milan)

- Observation of the epidemiological data (2005 study): decision to carry out the following studies
- Different methods can be useful to limit ragweed spreading and pollen production :

-Mowings one or two times, grounds covered by vegetation, ground ploughing, disk harrowing, chemical control

-Mowings: good efficacy; it is possible to diminish the number of the interventions and in the same time to obtain a diminution of the inflorescences







- Objective: to reach a wide application of the containing methods
- Results at the root of the actual regional indications



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1999-2009: la prol a 10 anni dal primo pri	olematica Ambrosia ovvedimento regionale	
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## **Training and update courses**

### Target: Local Health Authority and Town Administration







Corso di aggiornamento

Controllo di Ambrosia artemisiifolia



#### 25 giugno 2008

1ª Edizione ore 9.00 - 12.30 2ª Edizione ore 14.00 - 17.30

Dipartimento di Prevenzione Medica Parabiago, Via Spagliardi 19 Aula Verde

## **Information to the Mayor**

## **Annual Guide Lines**

	*	Regione Lombardi	a
	ASL	Milano 1	
DIPARTIMENTO PREVENZIONE MEDICA UOC Sanità Pubblica UOS Ambienti di vita			
Via Spagliardi,19 – 20015 Parabiago Tel. 0331.498.501/S02476 – Fax 0331.498.535 E-mail : sisp@aalmil.mi.ti Parabiago 2 3 MAG, 2014 Prot. n. 43073 Classe 2365			
		A	I SINDACI ella ASL della Provincia di Milano 1
OGGETTO: Prevenzione dell'allergia	da pollin	e di Ambrosia.	

### Aim of annual report

- Define the situation
- •Summarize different kinds of problem solving
- Obtain uniform level of knowledge

## Annual reports



## Information-Education Target: citizens and patients













- •Historical facts on the plant spreading in the area
- Habitat
- Botanical and biological characteristics
- Way to recognize ragweed in different phenological phases
- Way to compare it with similar plants
- Methods to fight the plant spreading
- Allergy symptoms
- Behavioural recommendations for patients
- How to point out the presence of the plant to institutions



#### AMBROSIA



divertinde cause di polisioni in utilizzato percentrulle delle poglazione. Inte può arvivere a produvre 2.8 miliardi di greculi di poline in une asla gierreta, de 2000 seni che posce conscrivere la lore coscicità generatorite fine a 40 centi ve aduta di solo. le davone a dine calder-emperanti e in quaste eclentaza nutri i luggi sentegesti le dell'une, sio sa terrenti fortili che assessi o addivittura solciati e enti ini ila assenzia in uti terrume, in territo i como certoria comiliberatore atti

# Special gadgets: educative board game for children Aller-giocando



- Primary schools
- Pediatric outpatient's allergy departments

### **Objectives**

- know pollinosis
- educate to: comprehension of environmental processes and their impact on human health



## **Control of the territory** Surveillance of grow over stands



•Decline of the ragweed infested areas

•The continuous surveillance is an important tool to measure the success of our management strategy!



## **Critical points**





- non executed preventive measures
- insufficient sensibility by Local Administrations

- difficulty to adopt annual ASL indications
- Mayors can bring modifications or non transposing ASL indications



## **Control of the territory** Aerobiological Monitoring

U.O.C. Sanità Pubblica - U.O.S. Ambienti di Viti Montroaccini aerohiologico



	in nu inneur ro i	au co a aomenica :		
		Concentrazione	Tendenza	
	Betulaceae	bassa	in diminuzione	4
	Corylaceae	bassa	stabile	=
	Cannabacee	assenti	stabile	=
	Compositae	assenti	stabile	=
	di cui Ambrosia	assenti	stabile	=
	di cui Artemisia	assenti	stabile	=
	Cupressacee	media	in aumento	↑
	Fagaceae	assenti	stabile	=
	Graminee	assenti	stabile	=
	Oleaceae	assenti	stabile	=
Pinaceae		assenti	stabile	=
Plantaginacee		assenti	stabile	=
Platanacee		assenti	stabile	=
Poligonacee		assenti	stabile	=
	Salicaceae	alta	in aumento	1
	Urticacee	assenti	stabile	=
	Alternaria	assenti	stabile	=
genda Incentrazione pol	inica (pollini per mc di aria)			
Pollini/Spore	Assente	Bassa	Media	Alta
Betulaceae	0	1-15	16-50	>50
Corylaceae	0	1-15	16-50	>50
Compositae	0	1-4	5-25	>25
Ambrosia	0	1-4	5-25	>25
Artemisia	0	1-4	5-25	>25
Cannabacaee	0	1-19	20-40	>40
Cupressaceae	0-2	3-29	30-90	>90
Fagaceao	0	1-19	20-40	>40
bramineae	0	1.9	10-30	>30
Oleaceae	0	1-4	5-25	>25
Pinaceae	0	1-19	20-40	>40
mantaginaceae	0	1	2	>2
riatanaceae	0	1-19	20-40	>40
Loubmacege.	0			12
saticaceae	0	1-19	20-40	>40
nurescese.	0-1	5-13	20-70	>70



Legnano pollen station

ettimana da	i lunedì	10 marzo d	a domenic	a 16 mar.	zo 2014			
	Media	10/03/2014	11/03/2014	12/03/2014	13/03/2014	14/03/2014	15/03/2014	16/03/20
Betulaceae	9	6	6	10	20	9	6	8
Corylaceae	6	1	4	6	9	10	8	6
Cannabacee	0	0	0	0	0	0	0	0
Compositae	0	0	0	0	0	0	0	0
di cui Ambrosia	0	0	0	0	0	0	0	0
di cui Artemisia	0	0	0	0	0	0	0	0
Cupressacee	72	22	27	37	83	55	99	184
Fagaceae	0	1	0	1	0	0	0	0
di cui Fagus	0	0	0	0	0	0	0	0
Graminee	1	1	1	0	2	1	0	0
Oleaceae	0	0	0	0	0	0	0	0
di cui Fraxinus	0	0	0	0	0	ō	0	0
di cui Olea	0	0	0	0	0	0	0	0
Pinaceae	0	0	0	0	0	0	0	0
Plantaginacee	0	0	0	0	0	0	0	0
Platanacee	0	0	0	0	0	0	0	0
Poligonacee	0	0	0	0	0	0	0	0
Salicaceae	114	13	11	33	69	177	122	372
Urticacee	0	0	0	0	0	0	0	0
Alternaria	0	0	0	0	0	0	0	1

• Published on web-site: www.aslmi1.mi.it

- •Send by e-mail:
- Allergy services
- Doctors Associations
- Chemist's shops
- o Town council
- Italian and European
   Aerobiological Network
   A.I.A.- R.I.M.A<sup>®</sup>; E.A.N.-

## News 2013

### **SUMMER 2013**

- The exotic oligophagous leaf beetle **Ophraella communa** LeSage,
- 1986 (Coleoptera: Chrysomelidae) was observed feeding on
- Ambrosia artemisiifolia L (common ragweed) plants in northwest
- of the Province of Milan (NW Milan) in Northern Italy, with an









- Routine pollen-monitoring stations recorded less Ambrosia pollen in 2013 than in the previous decade
- A statistically significant negative trend in Annual Ragweed Pollen (ARP) in the North-West of the Province of Milan (average of all stations) from 2000 to 2013 (p = 0.037)
- Statistically significant trends <u>were not achieved</u> if earlier periods were considered (i.e. 2000-2011 or 2000 -2012)

## Legnano: Ambrosia pollen level





-**2013**: **impressive decrease** of ragweed airborne pollen levels detected (AAP=664)

-2014: slightly increased (AAP=782)

## **Rho: Ambrosia pollen level**





-**2013**: **impressive decrease** of ragweed airborne pollen levels detected (AAP=817)

30.9.14

<1.10.14

27.10.14

Day

Rho 2014 vs 2009-2013

9.9.14

16.9.14

- 2014

2.9.14

-2014: slightly increased (AAP=939)

## Magenta: Ambrosia pollen level



## Impact of Ophraella on health?

• The skin prick tests (SPT) and consistent diagnosis of hay-fever of the period September-December of the years 2010, 2011, 2012, and 2013 from the medical records of the Magenta allergy outpatient's clinic were critically revised.

•Diagnosis of short ragweed pollinosis was compared with the total of

diagnosis of pollinosi		inosis	Annual Ambrosia	Daily maxima	
		Year	pollen	pollen/m <sup>2</sup>	
		2010	6597	767	
		2011	6915	1001	
		2012	3647	413	
		2013	620	65	
	Year New with		New ragweed allergic patients (N°)	New ragweed allergic patient (%)	P value vs. s 2013
	2010	120	62	51.7	0.00022
	2011	133	76	57.1	0.00001
	2012	111	78	70.3	0.00000001

Reduction of new ragweed allergic patients!

## Aerobiological study COST SMARTER Team

### AIM

- Determine whether this observed decrease in airborne Ambrosia pollen concentrations can be explained by environmental factors such as meteorology
- or whether there is evidence to support the hypothesis that the decrease was related to the presence of large numbers of O.
   communa in the area

### **FUTURE WORK**

Furtherstudyofthelong-termeffectsofO.communaonconcentrationsofairborneAmbrosiapollenwill be conductedduring the nextmonths, among the

### RESULTS

•The regression analysis **support** the **hypothesis** that the **observed decrease** in airborne Ambrosia pollen maybe indeed be **related** to the **presence** of large numbers of **Ophraella communa** in the Milan area,

•as the drastic **decrease** in airborne Ambrosia pollen in 2013 **cannot** be explained by **meteorology** alone



## **Conclusions - Italy**

- Some tools we used (i.e. epidemiological studies, pollen levels, control of the mainly infested areas) have given us clear indications of the efficiency of our management strategy and when it was necessary to improve it
- Some critical points still remain, indicating that this management strategy can be perfected:
  - It's necessary to implement a mandatory system of the allergy diseases data in all of Europe, similar to the one used for the infectious diseases
  - This system should include information on the prescribed drugs

## **Conclusions - Italy**

- We have reached this management success thanks to collaboration at local and international levels
- Therefore it's important to persue this international collaboration!
- To reach the management success it's foundamental a good communication, education and awareness strategy.







Associazione Italiana di Aerobiologia

## **Ragweed in France**

Michel Thibaudon Maira Bonini Samuel Monnier Gilles Oliver





## Introduction of ragweed in France

- 1860: in a field of Allier (French department) with seeds of red clover from North America
- First World War
- Then spreading along
   roadsides and river banks
   (Rhône, Loire)



# Ragweed in France in 2014



Number of ragweed observations by 10x10 km



Main infested area: Rhone-Alpes region

http://www.sante.gouv.fr/cartographies-de-presence-de-l-ambroisie-en-france-en-



### France map of ragweed **pollens**

# Health impact of ragweed pollens

- around 1970, role of ragweed highlighted in pollinosis cases in Lyon
- nowadays, 6 to 12% of French population is allergic to ragweed, especially in Rhone-Alps

region



# Pollen index of ragweed - 2014



### Allergy risk:

- depends on allergy potency and concentration of pollens
- scale: from 0 (null) to 5 (very high)
- Allergy risk = 3 → all allergy sufferers show symptoms



## Ambrosia pollination in France

Total ambrosia pollen catch July-September in France



### Comparison pollen index 2004-2013 with 2014



## Measures adopted and future actions : National level

**National Health and Environment Plan 3 (PNSE3)** in action 11 that just came out:

➡ Regarding ambrosia, invasive species with highly allergenic pollen, it continues to expand all over the territory, resulting in a global increase in the number of allergy sufferers.

The **regional agency Rhône-Alpes Health** estimated that in **2013**, **nearly 200 000 people** have **used care related to ragweed allergy** in Rhône-Alpes, corresponding to **health costs approximately 15 million Euros.** 

**Control actions** against ragweed are **coordinated** by the **Observatory of ragweed**.

## Measures adopted and future actions : Regional level

### PRSE 2 Rhône-Alpes: Fighting against pollen allergies

Action 10: Organize the fight against ragweed

Measure 22: Find the commitment of government departments and agencies in each department

Measure 23: Establish ambrosia referent and organize their training and inform them

Measure 24: Establish steering committees in each department and a regional steering committee

### **Creation of a new regional platform Reporting-Ambrosia**



With 4 differents ways to reports and inform :



# An integrated tool to fight against ragweed



### http://www.pollenflug-nord.de/

Pollen Deutschland 14

Dr. R. Wachter

www.pollenflug-nord.de

11



http://www.pollenflug-nord.de/



## **Control measures: Germany**

Habitat	Herbicide	Herbicide types	Cutting/mowi ng	Pulling out	Other (e.g. crop rotation, sowing competitive vegetation):
Crop fields	sometimes	crop selective and ragweed effective herbicides	sometimes	No/hardly	
Road sides	rarely	?	often	sometimes	
Natural areas	No		often	often	
River banks	no		sometimes	often	
Private persons	no		often	often	

## Legislation and control: Germany

- No special legislation with regard to ragweed
- Interdisciplinary Working Group Ambrosia recommends control, monitoring, prevention of spread and import (WG consists in experts from botany, ecology, plant protection, allergology, aerobiology etc. It is organised on the national level with some participation from neighbouring germanspeaking countries, e.g., Switzerland, Luxemburg, Austria, Netherlands)
- Public **awareness** campaigns (started in 2005 but were most active around 2006 and 2007)
- Regional and local authorities have **different policies**, some (e.g. Bavaria, Berlin) have active control programs ongoing

## Hungary Pollen levels and impact on health



Average pollen data from all the 19 monitoring stations of the Hungarian Aerobiological Network:

**2014**: **increase** of ragweed airborne pollen levels detected both vs 2013 and ten previous years



**Impact on health** (i.e. data on new ragweed sensitization, or prevalence of ragweed allergy in the population): there is **no uniform country** wide data collection in Hungary.

## Hungary

## Measures adopted against ragweed (1)

Report on Short- and Medium Range Control Action Plan Against Ragweed" Government Decision **1230/2012 (VII.6.):** 

In order to reduce exposure of the population against ragweed and ragweed pollen

- 1) to develop simpler and more efficient **procedures** for **localization** of **areas** covered by ragweed and **sanctions**
- 2) to embed **remote sensing** into detecting infected **areas**
- 3) to incorporate remote sensing procedures into official detection system
- 4) suggestion for **cooperation** between **Hungary** and **Croatia** regarding crossborder ragweed and ragweed pollen information system;
- 5) more reliable assessment of country-wide pollen distribution;

## Hungary

## Measures adopted against ragweed (2)

Report on Short- and Medium Range Control Action Plan Against Ragweed" Government Decision **1230/2012 (VII.6.):** 

In order to reduce exposure of the population against ragweed and ragweed pollen

- 6) More efficient operation of alarm system
- 7) Further development of the system in order to make it possible using for international purposes;
- 8) Organizing continuous ragweed control under the auspices of local authorities;
- 9) **Training** on crop production, technological, ragweed **control** and prevention knowledge for **farmers**;
- 10) Ragweed control along railways, roads, highways and expressways;

## Switzerland



### 2014 vs 2004-2013





## **Switzerland**

Common ragweed is listed in the Ordinance of Plant Protection as dangerous weed and is under the obligation to strict control (eradication)
the control is in the responsibility of the cantons.



Problems to control on roadsides
the number of small foci in house gardens declined by 80-90% over the past few years
and the number of announcements to town services and individuals declined in parallel.

Map of Switzerland indicating the cantons with their abbreviations (Report compiled by Christian Bohren and Heinz Müller-Schärer, Jan 2013)

•Ambrosia abundance apparently remains stable in Switzerland. Exceptions are observed in the Cantons VD and GE.

•The **situation** in army exercise fields and other highly **disturbed areas** remains **worrying**.

## Switzerland Legislation

- National law (ordinance of plant protection) introduced by the federal office for agriculture (Systematische Rechtssammlung: SR 916.20 "Verordnung über Pflanzenschutz" (PSV), "Ordonnance sur la protection des végétaux", "Ordinanza sulla protezione dei vegetali (OPV)), since 2006
- Aim of the law: controlling existing Ambrosia populations and preventing spread
- **Summary** of the law: the keeping/growing, multiplication and distribution of A. artemisiifolia is **not allowed**. There is a general obligation to report locations where Ambrosia plants occur (foci) to the cantonal authorities and to control Ambrosia at these sites
- Information on the law: webiste and obligatory meetings for farmers

## Switzerland Control measures

Habitat	Herbicide	Herbicide types	Cutting/mowing	Pulling out	Other (e.g. crop rotation, sowing competitive vegetation):
Crop fields	often	Crop selective and ragweed effective herbicides	sometimes	sometimes	Competitive vegetation is sown within the crop rotation: cash crop, cover crop
Road sides	sometimes	Lontrel (Clopyralid)	often	sometimes	
Natural areas	sometimes	Non-selective herbicides (glyphosate)	often	often	
River banks	sometimes	Non-selective herbicides (glyphosate)	sometimes	often	
Private persons			often	often	
Military training ground	sometimes		often	often	



## **International Ragweed Society**

### http://www.internationalragweedsociety.org

- The idea of creating an international association for ragweed was discussed in 2008 by the founders after the First International Ragweed Conference in Budapest and after the Colloque européen "Ambroisie: de la connaissance à l'action" in Aix-les-Bains
- **Funded** in Nyon (Switzerland), October 2<sup>nd</sup> **2009**:
  - Christian BOHREN, Bernard CLOT, Levente KISS, Tamas KOMIVES, Michel THIBAUDON
- First President: Tamas KOMIVES (2009-2014)
- Second President: Maira BONINI (2014-2018)



### Aims

- promote the knowledge concerning ragweed (Ambrosia L.)
- facilitate collaboration, research, education, information, technical development, practical applications and laws concerning ragweed and its direct and indirect impacts, as well as fight against that plant;
- create a platform for the persons, associations, societies and institutions with an interest in ragweed;
- elect the bodies responsible for organizing the International Ragweed Conferences;
- encourage collaboration with other areas related to environmental and health issues.



The Association shall be entitled to carry out any activity in accordance with these aims, such as organizing courses or developing educational programmes, coordinating or supporting projects, suggesting quality standards and quality controls, encouraging young researchers, developing fighting actions, managing data bases, etc.

Recently, the **Quality Control Program in Aerobiology**, organized by the EAS in the frame of the COST ACTION SMARTER, was strengthened



### **International Ragweed Society**

## International Ragweed Conferences

- Second International Ragweed Conference, Lyon, France – March 28-29, 2012
- Third International Ragweed Conference, Rho (Milan), Italy, April 3-4,2014













## Sustainable management of Ambrosia artemisiifolia in Europe (SMARTER)

FA1203

Start date: 19/11/2012

End date: 18/11/2016

Heinz Müller-Schärer (Chair)

University of Fribourg / Switzerland

## The potential distribution of *A. artemisiifolia* under current and future (2100) climate



In Europe: Great potential to further expand north and east

## SMARTER

Sustainable management of Ambrosia artemisiifolia in Europe 2013-2017 Food and Agriculture - COST Action FA1203

### the problem



What we do

How we work

is central to SMARTER.

We aim to provide training

knowledge and technology

transfer and policy support.

The synergy between biological,

physical and chemical control mea-

sures and vegetation management

#### **Common ragweed** (Ambrosia artemisiifolia)

Originally from North America, ragweed is one of the most prominent invasive alien species in Europe with a range that is likely to increase under climate change. It is also an important agricultural weed and its pollen carries noxious allergens that may cause allergy in sensitisized people. Therefore, long-term, sustainable and widely applicable management of is required.

#### Who we are An interdisciplinary network of

agricultural modellers.

Plan long-term management and monitoring options experts currently involved in the Develop new innovative 0 control of ragweed, health care promanagement solutions fessionals, aerobiologists, ecologists, Assess the cost-effectiveness economists, and atmospheric and in mitigating the effects of invasive alien species

### new solutions

smarter@unifr.ch

www.ragweed.eu



Vice-Chair: Dr Carsten Skjøth

University of Worcester, UK

Department of Biology

Unit Ecology & Evolution

Switzerland

ECIENCE AND TECHNO www.cost.eu

Ambrosia control in Europe Objectives

> reduce (i) human exposure to the highly allergenic pollen, (ii) crop and (iii) biodiversity losses caused by ragweed

### serve as a template for trans-national and transsectoral cooperation in establishing and implementing control measures against IAS

### **Present participation**

> 200 researchers from 33 COST/NN countries, plus China, Iran (AUS, USA, Japan, CAN)

Start: Nov. 2012 for 4 yrs



### **SMARTER**

Sustainable management of Ambrosia artemisiifolia in Europe

### http://www.ragweed.eu/

ABOUT NEWS ACTIVITIES ORGANISATIONAL AMBROSIA LINKS CONTACT



Featured post



### SMARTER Meeting January 2015

The next SMARTER Core Group and Management Committee meetings as well as Stakeholder Workshops will take place at the COST Office in Brussels, 20-22 January 2015. The final program has now been published and includes:

- 20-21 January: Internal SMARTER Meetings
- 21-22 January: Conference & Workshops: SMARTER and stakeholders exchange on "Invasive plants management success & regulation"

Program & Outline Brussels\_Invasive plants management success & regulation





## Acknoledgments

## IRS board members, IRS members and COST chair who contributed to this presentation

## Thanks for your attention!

