

# PYRETHRUM PRODUCTION IN FRANCE

Experience, status and perspectives



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# The main reasons to cultivate PYRETHRUM in France

- Permanent alternation between shortage and overproduction of PYRETHRUM in the world
  - Big fluctuation of pyrethrin price
  - Insecticide formulators lost confidence
  - Abandon of many uses of natural pyrethrins during shortage 1990-1996 in favour of synthetic insecticides

- Only two main PYRETHRUM producers in the world:

Kenya: PBK (70%) and Australia: BRA (30%)

- PBK has shown in the past considerable fluctuations in PYRETHRUM production due to political difficulties and to bad climatic conditions
- BRA produces PYRETHRUM in south hemisphere

Agri Plantes hopes to become a complementary and helpfull partner for them and so to contribute to regulate the PYRETHRUM world supply

# Advantage of France

- Various soils and temperate climate
  - No difficulty to find several favourable areas in France
- No problem to develop large areas if new pyrethrum market turns up
- High level in agricultural mechanisation
  - Possibility to decrease price of pyrethrins
- New and very interesting harvesting process (drying in alfalfa ovens) specific to France
  - Perfect control of harvest always under optimal conditions, regulation of production and increasing of potential yield per hectare

# History

16 years of experience  
in France

# 1990 to 1999

- 1990 and 1992: Collect of wild plants in ex Yugoslavia. (New collect in Croatia in 2003 in cooperation with Faculty of Agriculture in OSIJEK)
- 1996 to 1998: European Fair Programme  
[www.biomatnet.org/secure/Fair/S337.htm](http://www.biomatnet.org/secure/Fair/S337.htm) (EC Contribution: 1,200,000 €)  
Research in plant breeding, in agricultural technique, on the best location for cultivation, in extraction and purification process (hexane and supercritical CO<sub>2</sub>)
- 1999: Obtainment of the first improved French Pyrethrum cultivar.

# 2000 to 2006

- 2001: First direct sowing on large scale. Finalisation of weed control programme
- 2002: First harvest and obtainment of first French refined PYRETHRUM extract
- 2003 to 2006: Developing of new production on several hundred hectares in different regions
- 2005: Creation of Agri Plantes and strategic decision to develop or access European dossiers for plant protection and biocide uses



# Some succinct data on Pyrethrum

- *Tanacetum (syn Chrysanthemum) cinerariaefolium* belongs to the family of Compositae. The insecticidal proprieties are well known since Antiquity. The active components, called pyrethrins, are widely used as insecticide since the end of the 19<sup>th</sup> century.
- Easily degraded by oxygen, light and temperature, they are user friendly, environmentally friendly and compatible with organic farming.

- Natural pyrethrins enter into the composition of a large number of insecticides traditionally used in domestic hygiene and in amateur gardens.
- Studies are carried out on new formulations in order to expand their use to organic farming, to "thoughtful" farming and may be to treatment of stored grain.

# Plant breeding programme

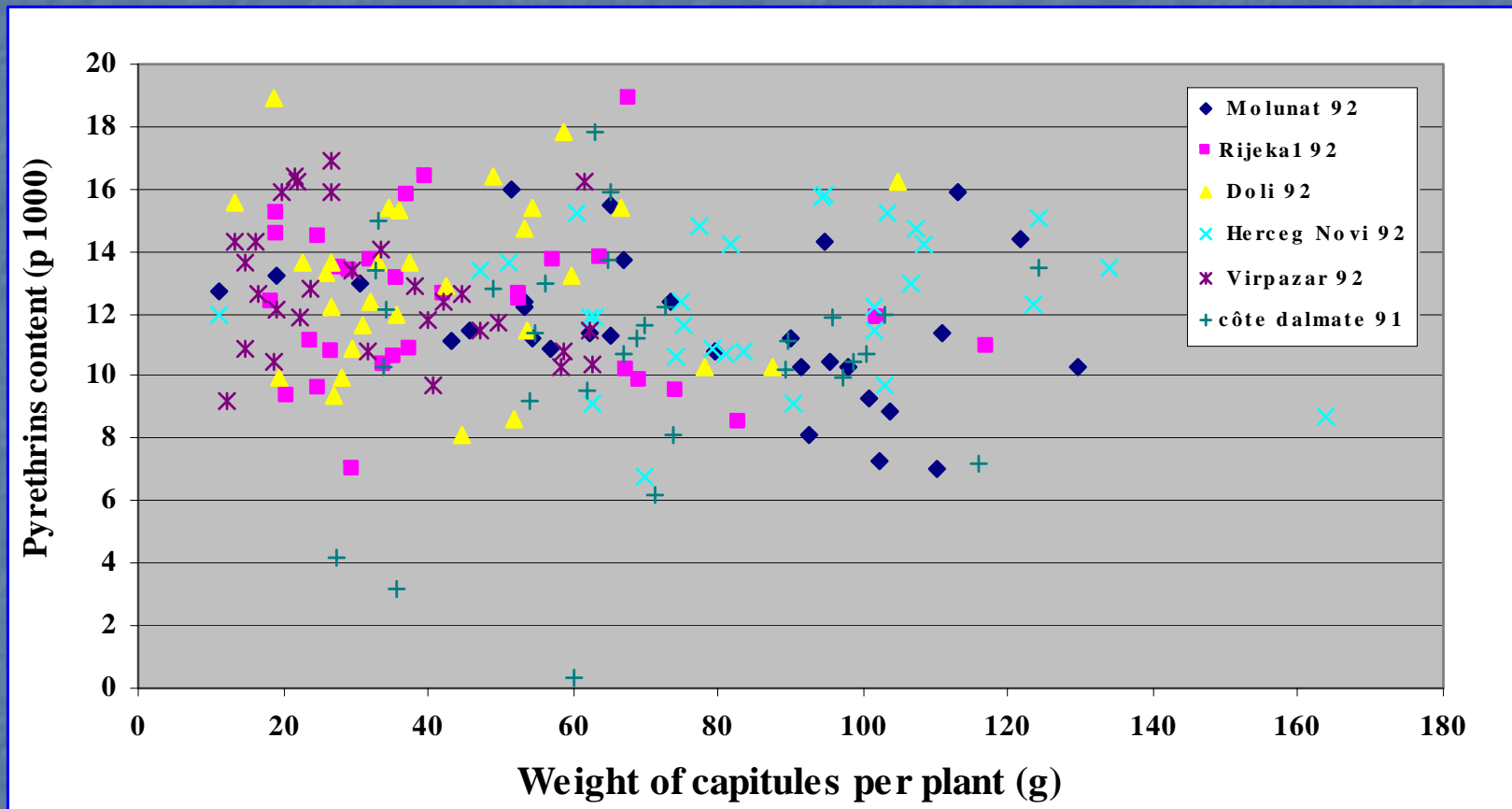
- A collection of ecotypes, coming from the areas of Split, Makarska and Dubrovnik as well as from the islands of Solta, Brac and Hvar in Croatia, and from the areas of Kotor and Podgorica in Serbia-Montenegro, was constituted in 1990, 1992 and 2003 (Convention with Faculty of Agriculture in OSIJEK: September 24<sup>th</sup> 2003)
- The objective was to create varieties in order to develop industrial cultivation of PYRETHRUM in Europe in particular in France where climate, quality of soils and agricultural techniques seem to be well adapted



# Biokovo – CROATIA



# Variability observed in wild populations collected in Croatia, Bosnia Herrzegovina and Montenegro in 1990 and 1992



# Hybridization of clones 95-17 x 95-86 near Angers in 2003



# September 2002 in Ardennes

(direct sowing: April 2002)





# 10<sup>th</sup> February 2004 in Ardennes

(Direct sowing: April 2003)



# 26<sup>th</sup> April 2004 in Eure & Loir

Direct sowing: April 2003



8<sup>th</sup> June 2004 in Ardennes



24<sup>th</sup> June 2004 in Ardennes  
(Full flowering)



# The best stage for pyrethrum harvest (The two first weeks of July in Champagne)



# 10<sup>th</sup> July 2004 in Ardennes

Harvest with a combine 10 days after windrowing



# 13<sup>th</sup> July 2004

## Harvest just after Pyrethrum windrowing in Ardennes

Harvest with a forage harvester  
just after windrowing



# Perspectives

*AGri Plantes* is thereafter ready to develop a substantial French PYRETHRUM production.

## Our ambition:

- To contribute to regulate the world PYRETHRUM market
- To promote new uses for PYRETHRUM for a clean and non polluting agriculture
- To become a major world actor in PYRETHRUM production



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