

Yearly report for project funded by Ekhagastiftelsen – 2007

Application number:	2007-9
Project title:	Farm Seed Opportunities - Opportunities for farm seed conservation, breeding and production
Receiver of grant (name, address):	Louis Bolk Institute, Hoofdstraat 24, NL-3972 LA Driebergen, The Netherlands
Contact / project manager:	Edith Lammerts van Bueren
Project start (yyyy-mm-dd): *	January 1, 2007
Project end (yyyy-mm-dd): *	December 31, 2009
By Ekhagastiftelsen granted sum:	SEK 850.000,- for the three years

Report 2007 – Louis Bolk Institute

In this EU project Farm Seed Opportunities (FSO) two researchers of Louis Bolk Institute (LBI) participate: Edith Lammerts van Bueren and Aart Osman. Edith Lammerts van Bueren (ELvB) is member of the Steering Committee and Workpackage leader of WP 1 Determination of Stakeholder expectations, Aart Osman is leader of Task WP 2.1. The whole FSO project is coordinated by INRA-France.

This EU project Farm Seed Opportunities (FSO) started with all EU-partners (France, Italy, Switzerland, Spain, The Netherlands) with a two day kick-off meeting in France on 5-6 February, 2007. Both LBI-researchers were present to discuss the strategies and working programme.

On April 25 2007 a delegation of the FSO Steering Committee had a full day meeting in Brussels with several representatives of the European Commission (from DG Research, DG Agri, DG Sanco). ELvB was one of the participants. The aim was to have an open discussion on the scientific approach of the FSO project and to attune with the needs of the EU policy makers, the needs of the farm seed market and the implementation of the current regulations and scenario propositions for further regulations. The meeting was very fruitful! The policy makers want to stay closely involved. A report has been written by ELvB and published on the website www.farmseed.net.

The task for LBI in 2007 were three activities:

- Start with WP 1 developing formats for interviews for determinations of stakeholders to be finalised in year 2008.
- WP 2.2. Start and conducting of the 3-year field trails with winterwheat, beans and spinach, see more information below.
- Delivery of report on WP 2.1 end of December 2007 including the description of the main features of existing breeding initiatives of seeds of landraces, conservation varieties and special amateur varieties, through 4-5 case studies.
- WP4. Dissemination. A short leaflet has been made, see attachment. The project was presented at the international COST-SUSVAR meeting in Hungary in May 2007 by ELvB. A field excursion was organised during the summer 2007 (2 June) to enable farmers and consumers to see the winterwheat trials in NL. In September ELvB was

involved in a documentary film (Eternal Mash) on conservation varieties and one of the farms in the bean trails was included.

Ad WP 2.2. Identification of bottlenecks and challenges for maintenance and breeding.

The setting up of the field trials had to be organised together with the partners of France and Italy in order to:

- Compare homogeneous vs heterogeneous varieties regarding their stability across environments in organic and low-input conditions
- Assessment of the evolution/adaptation through the time (3 years) of these varieties
- Assessment of the consequences of moving varieties from one environment (country/region) to the other.

In NL three crops were involved:

- Winter wheat: 8 old local varieties (2xNL, 2xItaly and 4xFrance) + 2 modern standard varieties were sown on two farms. One farmer will also use the flour for comparison in bread baking quality. The second location had severe drought stress in the extreme dry spring 2007 and therefore too much weed problems, and was finally, unfortunately had to be ploughed.
- Spinach: 21 old local varieties from France and NL were received from the genebanks and were sown at one farm in NL and 4 locations in France.
- Beans: 8 old regional varieties (from NL, F and I) were sown on two farms in NL, two farms in Italy and 4 farms in France.

A France researcher travelled through the three involved countries to compare the development of the three crops, see attached report on the spinach trial 2007 and the protocol for spinach as an example.

Aims and plans for 2008

In 2008 LBI will be involved in:

1. WP 1 concerning three tasks and will deliver reports by the end of 2008 on:

WP 1.1 define the variability of the definitions on landraces, conservation varieties, amateur varieties applied in several European countries, and the notion on the concept of local adaptation, and the notion of species threatened by (different levels of loss) genetic erosion in relation to their interpretation of the regulation.

WP 1.2. Characterisation of stakeholder expectations related to the topic, and bringing biodiversity to the market and including stakeholders points of view on ethical aspects of breeding methods (hybrids versus open pollinated varieties, etc).

WP 1.3. Constraints of policy maker requirements, by analysing the so-called DUS criteria, the different positions from one country to another, and on the (mis)match of outcomes from 1.1 and 1.2 to the (draft) regulation texts of the Directive.

2. Continuation of the experimental field trails of WP 2.2. in 2008 and 2009

3. Dissemination WP 4 including

- presentation of the FSO project at the global festival and congress of Diversity 12-16 May 2008 in Bonn, parallel to the Convention on Biological Diversity and its Protocol on Biosafety in Bonn, Germany
- presentation on the IFOAM conference in Moderna (Italy)

FSO Protocol for spinach experimentation

in the framework of EU FarmSeedOpportunities

Introduction

Spinach experimentation will be performed in only two countries: France and The Netherlands. Spinach is not a traditional production in Italy and there is no landraces in this country. Moreover, the agronomical conditions will not be suitable. Nevertheless, spinach is a good model for studying the evolution of an allogamous species for vegetable production. For the necessities of the EU project, we need to experiment spring spinach in order to be able to observe the plant quality, to select plants and to produce seeds on the same trial. The aim is to achieve three breeding generations during the project.

Plant and cultivation

- *Spinacia oleracea*

1000 seed weight: 8 – 16 grams

- Sowing : from February to May
- Number of plants/m² : 9-10 for breeding/seed production
 - 0,3 m between row
 - 0,3 m between plants on the row

For breeding, ideally a plot of 10m² will be necessary to make a selection on about 100 plants.

- In NL we will sow according practise to assess the varieties
 - 0,2 m between row, each variety on one row of approx.6 m
- and replant the selected variety later in the season after selection for seed production
 - 0,3 m between row
 - 0,3 m between plants on the row

Location

France:

- Maine et Loire : Germinance – Les Rétifs – 49150 Saint Martin d’Arcé
Responsable: François Delmond
- Loire Atlantique:
JM Potiron
- Aude: Coumeillou, 11230 TREZIERES
Jean-Jacques Mathieu

The experiments will be also followed by Cécile Parent-Morvan, Bio Loire Océan (BLO).

The Netherlands:

- De Horsterhof, Anna van Oostwaard, Horsterstraat 1, NL-6921 AM Duiven

Varieties, see attached list

Experimentation Spinach

Taking into account the allogamous nature of the species, only one variety will be multiplied by each farmer. Nevertheless all will be evaluated in each location each year.

2007:

The landraces are not known any more for their quality. It will be better to experiment several varieties in order to choose one variety which will be bred (selection and seed production) for three years.





















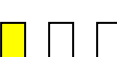
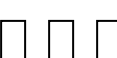
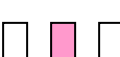
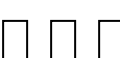
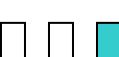
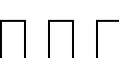
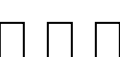
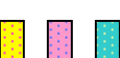








After observation of the crop, only one plot will be kept for seed production in each farm, except in one of them where the pollination pollution could be evaluated (for example, in Jean-Jacques Mathieu farm). If we maintain the idea to have one location with all the varieties, we will only keep 3 varieties, Jean-Jacques Mathieu will not have his own variety, but all of them. Thus, each variety will be multiplied in two locations: (1) in isolation in a farm and (2) with poor isolation in Jean-Jacques's farm.

2008:

Experimentation and observation of all of three varieties in two versions (isolate production and poor-isolate production). Each farmer will go on selection in his own variety in isolate production, except Jean-Jacques who will keep his 3 varieties in poor isolation.

2009:

Experimentation and observation of all of three varieties in three versions (initial seed batch, isolate production and poor-isolate production).

		Farm 1	Farm 2	Farm 3	Farm 4
2007	Observation Choice of the varieties	Trials with 20-25 varieties on 10 m ² for each varieties			
	seed production on the chosen varieties				
	one field or row/variety	 	 	 	 
2008	Observation				
	Seed produced on farm 1, 2, 3 sown in 2 plots/variety				
	and seed production (each farmer will go on breeding his own 1 variety)	 	 	 	 
2009	Observation and analyse of the evolution by comparison with the initial seed batches	 	 	 	 
	Seed produced on farm 1, 2, 3 sown in 3 plots/variety	