The status of national collection, Finland

In SESTO database there are

**Pisum sativum:**
79 accessions
(of which 2 are rejected and 1 temporarily preserved)

**Vicia faba:**
32 accessions
(of which 3 rejected and 3 temporarily preserved)

All these seed samples are preserved in the NordGen Genetic Resources Center, Alnarp, Sweden as seed in freezers and cold rooms.

Three old vicia faba seed samples were obtained last year from a single farmer.
- Germinability was low, only 1 of them germinated so far.
- Will be evaluated and sent to genebank.
Project in 2009-2012:

**Improving self-sufficiency in nitrogen and protein by efficient utilization of legumes**

Aim: Enhancing the competitiveness and self-sufficiency of Finnish agriculture by searching for more effective ways to utilize the potential of the biological N fixation by improved farming practices and new legume species.

Some results:
Best crop to prevent lodging of pea is oats. It degreased the amount and severity of lodging, and made it to begin later.
-Dwarf oats and barley were not as good as oats, but better than wheat.

Direct drilling of peas is more demanding than direct drilling of spring cereals.
-At least on clay soils the amount of seeds need to be increased.
-Rainy spring seasons are especially difficult (lack of oxygen).
-Diseases may become more evident compared to ploughed soil.
More results:
-The most potential narrow-leafed lupin variety in Finland for seed production seems to be ‘Haags Blaue’, which has the shortest growing time.
-The best faba bean variety is Finnish ‘Kontu’ although there are several other varieties which are promising for the future.
-Four possible lentil varieties: Redbow, Rosetown, Milestone and Redberry.
-Faba beans and white lupins with long growing time are very well suitable for whole crop silage with spring wheat.

Economy:
-Faba bean and pea were most profitable in 2009 and 2010, when the prices of cereals were low and fertilizers high.
-The yield of faba bean and pea could have been 1 000 kg/ha lower than of cereals and the profit margin would have been the same as for spring cereals.

Other projects in MTT:
-Studies for quality of faba bean as food and feed.

Cultivars of Boreal:
-Faba bean: Kontu
-Field pea: Hulda, Jermu and Rocket
A 3-year co-operation project between MTT and FCRI (Egypt)
- Started in this year. Project is lead by Oiva Niemeläinen.
- Breeding and seed production aspects in dry and salid areas are studied
  - Faba bean (and alfalfa).

- Includes e.g.:
  DNA marker sets (retrotransposon-based markers) and
  GBS (=genotyping by sequencing) markers are developed for faba bean,
  in order to look closer the existing genetic diversity (which is known to be low).

There is a plan to find resources to apply these markers also for our own
Finnish faba bean genotypes existing in the collection.