

Report year 1 for the project
Locally adapted cereal cultivars in organic farming; for quality in production and product

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Summary

The aim of the present project is to increase the option for sustainable cultivation of locally adopted cereals through organic cultivation. During the first year, locally adapted cereal cultivars have been selected for the four selected localities using the normally used crop rotation systems at each farm. The four farms used were; Alnarp in Skåne, Ekhaga and Krusenberg in Uppland, and Lövsta on Gotland.

The weather during the season 2011 have been wet in Skåne and on Gotland, while dry in Uppland. Temperatures during the summer growing period were above normal in all four places. A total of 25 cereal spring cultivars have been grown in each of the selected localities. Further, 25 cereal winter cultivars have been sown on each locality, although not being harvested yet. Some of the selected cultivars were the same in all localities being measuring cultivars to be able to compare results between localities. The rest of the cultivars were locally adopted ones.

Cultivars included are the following: Spring emmer (old variety from Gotland); spring spelt (selected from land races from Gotland); spring rye – Jusso; wheat landraces from Gotland, Öland, Halland and Dalarna; naked barley (2 row and 6 row); naked oats; land races of oats; summer oats Gotland; Ur Gotland landrace oats; landrace barley – Gotland barley; 2 row barley – Svanhals, Domen, Gullkorn, Rika, Balder, Ingrid, Freja, Lina, Alva; 6 row barley – Kajsa; back oats – Klock, Osmo, Stormogul, Engelbrekt, Orion, Extra Klock, Argus; white oats – Selma, Seger, Palu, Virma, Sol, Sisu, Bambu, Blenda; wheat – Ella, Diamant, Atson, Atle, Algot, Dragon, Walter, Dacke, Kärn, Prins; winter rye (populations of old cultivars); T. monococcum einkorn wheat from Gotland; black emmer from Gotland; spelt wheat – Oberkulmer, Albihn; Spelt wheat Gotland; Triticum turgidum – Rauweizen; landraces - borstvete Gotland, Jacoby, LV Gotland, Lv Halland, Lv Uppsala, Sammetsvete, Olympia; Swedish winter wheat – Robur, Holger, Aros, Walde, Svale, Odin, Eroica, Sol, Starke, Banco, Ertus; foreign winter wheat – Erbe, Red prolific, Aura, Vakka, Ure, Russisk vete, Krachi, Vama.

The plant material has been evaluated as related to adaptation and performance on each of the localities. Further, the quality of the cultivars has been evaluated using falling number, protein content, thousand kernel weight, volume weight and essential minerals. Nutritional value of some organically grown locally adapted cultivars was evaluated by analyses of minerals, heavy metals and tocochromanols.

The most promising genotypes as related to these nutritionally relevant compounds were; 6356 spelt, *Triticum monococcum*, Ölands 17 borst Spelt, Lv Dal 16 brun borst and Fylgia.

Publications

Hussain A, Larsson H, Kuktaite R, Johansson E (2012) Healthy food from organic wheat: choice of genotypes for production and breeding. Revised manuscript re-submitted.