



FiBL Switzerland is testing mixtures of 33 pea varieties and 8 barley varieties on 286 plots in the ReMIX field trials.

Food security through mixed cropping

We need new growing methods to provide us with food security. This is where intercropping comes in, because it delivers environmental and economic benefits. In the Europe-wide ReMIX project, FiBL is optimising mixed cropping through breeding and cultivation techniques.

Mixed cropping is a key element in feeding the growing world population sustainably, as mixed crops increase productivity, conserve resources and are more resilient to fluctuations in climate, weeds, pests and diseases. However, to date very little mixed cropping has been practised in Europe, mainly owing to a lack of suitable varieties, knowledge about cultivation and processing facilities.

That is why FiBL has been successfully promoting mixed planting of grains and legumes for years and is stepping up its efforts in the context of the EU ReMIX project. Demonstration plots are planted and regular working group meetings held with farmers, farm machinery manufacturers and feed mills. FiBL is also looking at various strategies for breeding and selecting particularly efficient crop combinations.

The pea variety determines overall yield

It is important in mixed crops that, as far as possible, the partners use different resources, in order to avoid too much competition. To this end FiBL Switzerland is testing different combinations of 33 pea varieties with 8 barley varieties as well as monocultures of each at several sites over several years. A particular cause for excitement is the effect of intercropping on yield stability and on plant and soil health, which is why FiBL is also looking at soil microorganisms. Initial results suggest that the yield potential of the pea variety used

significantly determines the yield of the overall mix. However, characteristics such as the leaf surface of a specific pea variety also seem to affect its yield in a crop association with barley.

Better options for weed control

Interesting observations have already been made in terms of weeds: in the field trials there was between 14 and 18 per cent less late weed growth than in the corresponding monocultures of peas or barley. That is because barley and peas sown alone do not develop fully at all sites, which can result in more weed growth. Mixtures withstand this effect, since they increase the probability that there is a crop variety in the field that is well suited to the specific soil and the prevailing weather conditions, and which can put on dense growth and provide good ground cover.

Pierre Hohmann and Benedikt Haug, FiBL Plant Breeding

EU promotes mixed cropping in the ReMIX project

Contact: pierre.hohmann@fibl.org

Website: www.remix-intercrops.eu

Twitter: @RemixIntercrops, @FiBLBreeding

Facebook: @RemixIntercrops

Funding 2017 to 2021: European Union, Swiss State Secretariat for Education, Research and Innovation SBF

Coordination: INRA Toulouse, France

Partners: 23 partners in 11 EU countries, Switzerland and China. Research institutions, extension services, farming cooperatives, breeders, farm machinery manufacturers and small and medium-sized businesses