



Yield stability under extreme weather conditions

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Climate change does not only result in higher temperatures in summer but also in more frequent extreme weather conditions like heavy rainfalls, storm, hail and late frost events or extended drought periods. Growing mixed cultures can help stabilizing the yield under unforeseen weather conditions. In DIVERSify, we tested various plant teams under different pedoclimatic conditions.

One example to 'insure' for different precipitation scenarios is growing faba bean in a mixture with grass pea. In hot and dry seasons, grass pea develops well and ensures protein yield, whereas in cooler and wet seasons faba bean is the crop which provides protein for food or feed production. Another example is growing strips of *Phaseolus* beans with corn as a supporting crop, alternated with strips of pumpkin. As canopy closure is rather late in the bean-corn mixed culture and soil is in great part exposed, pumpkin plants can regulate weed and moisture content of the soil (at least at the border regions) and thus also support an enhanced yield stability of bean plants.

Nevertheless, if two crops are mixed together within a row or field, choosing the correct sowing density of each partner in the mixture, as well as a similar maturity dates, is very important. For example, oat and grass pea can be added in lower proportions to faba bean (e.g. at 30% of the sowing density of oat or grass pea in monoculture and at 70% of the sowing density of faba bean) and wheat can be added in higher proportions (e.g. at 50% of the sowing density of the monoculture) to yield the best results.

The desired end use as well as the competitiveness of the components must be considered when choosing a plant team for resilience. Cultivar choice can provide further fine tuning. Unfortunately the weather is harder to predict!

> Find out more, including references, at: plant-teams.org