

EVALUATION of Soybean varieties for low Input and Organic productionN under stressed conditions (EVASION) 2021–2024

Developing methods to identify weed competitive and drought tolerant soybean varieties in field trials.

Weed competitiveness of soybean varieties is a desirable trait for organic, but also for non-organic production, as the use of herbicides is increasingly limited. Soybean cultivation will have to cope more often with drought in the future.

The project strives to

- improve the evaluation of soybean varieties that are tolerant to drought stress and are more competitive against weeds,
- develop new methodologies to assess variety performance in a large range of growing conditions,
- Provide dissemination for stakeholders about soybean cultivation, new traits and varieties.

Methods

- Identify traits linked to improved productivity in weed infested plots and under drought conditions by testing 5 contrasting cultivars in the field, with and without a mixture of artificial weeds, with and without irrigation (1 location, 3 years)
- Evaluation of the role of specific traits (growth dynamic, total produced biomass) regarding the tolerance to weed, drought and their interaction.
- Evaluation of non destructive measurements systems to assess water deficit and plant response (probes, canopy temperature, chlorophyll content, growth dynamic)
- Variety evaluation in a mixed cultivation network: organic (2 sites) and conventional (4 sites) and a site with controlled water regime, 25-29 cultivars. In addition to usual variety evaluation parameters, canopycover of soybean. is determined
- Strip trials under organic conditions on 6 locations in cooperation with cantonal agricultural extension service, field visits for stakeholders, dissemination activities.



Fig. 1: Field trial at irrigation experimental site at LTZ Forchheim close to Karlsruhe, 29 cultivars, 2-3 repetitions, 150 plots, irrigated (blue) and non irrigated

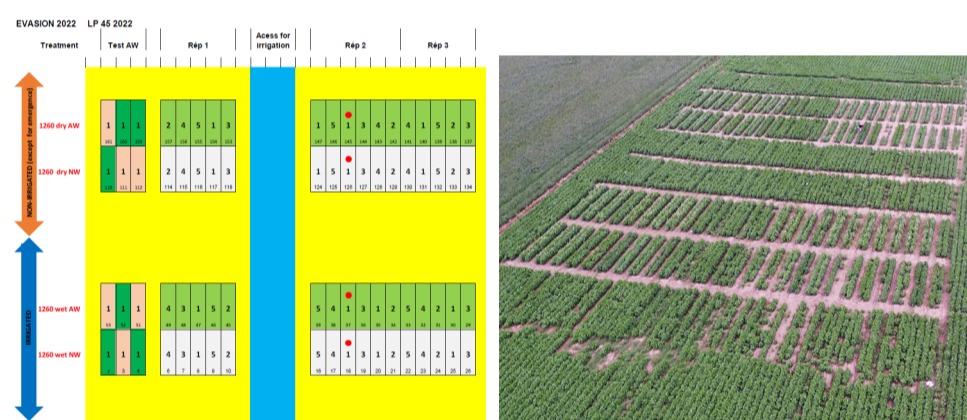


Fig. 2: Experimental site at Agroscope Changins, Soybean varieties with and without artificial weeds, irrigated and non-irrigated



Fig. 3: Strip trial in cooperation with cantonal extension service at BBZ Arenenberg, TG



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