Genotype and environment interaction on field pea cultivars in organic cropping system

Livija Zarina & Ilona Alekse
Institute of Agricultural Resources and Economics, Latvia

Implications

Species diversity and the selection of appropriate cultivars are important factors for the stability of agricultural systems, especially in organic farming. When growing legumes as the field pea in mixture with cereals, choosing the appropriate pea genotype can enhance stable yields through environment changes.

Background and objectives

This work was done in the frame of EU FP7 project EUROLEUMGE (Enhancing of legumes growing in Europe through sustainable protein supply for food and feed). The objective of this study was to contribute to improvement of sustainability of field pea crops in terms of yield parameters through efficient cultivation systems. As sub-objective was to introduce the new genotypes in local cropping systems.

How work was carried out?

Cv ‘Bruno’ and cv ‘Kirke’ were sown alone and in mixtures with oat ‘Laima’, spring barley ‘Rubiola’ and spring wheat ‘Uffo’. Pea crops were evaluated on plant morphology (beginning of emergence, flowering initiation, duration of growing period, plant height at biological maturity, pods per plant at biological maturity, and harvesting date), grain yield potential (seed yield, number and weight of pods and grains per m²), resistance to local diseases and pests.

Key results and discussion

For both genotypes cv ‘Kirke’ and cv ‘Bruno’ mean yields were higher in pure sowings compared to the yield levels in mixtures with cereals oat, barley or wheat. However, among the mixtures highest yield was obtained when the field pea was sown with wheat. About pea-cereal mixtures advantage over cereal sole crop informing also other authors (1), however, regarding species compatibility results differs.

References:


1 Institute of Agricultural Resources and Economics (AREI), Zemessresursu kaites, Prekule, Latvia
Contact: livija.zarina@arei.lv
www.arei.lv

*The EUROLEUMGE Project is funded by FP7-AGRI-2013-761375