Popular scientific project description for project funded by Ekhagastiftelsen

Popular scientific project description is to be submitted within 2 months of project grant.

Application number:	2015-65
Project title:	Healthy plants from healthy soils: Resilience and stability of organic cropping systems
Receiver of grant (name, address):	Prof. Thomas Döring Agroecology and Organic Farming Group University of Bonn Auf dem Hügel 6 53121 Bonn Germany
Contact / project manager:	Prof. Thomas Döring
Project start: *	2016-02-01
Project end: *	2017-05-31
By Ekhagastiftelsen granted sum:	SEK 1.120.000

Project description: (max 150 words)

An important criterion of health in agriculture is resilience, i.e. the ability to recover after stress. Using a set of long-term experiments from three countries we studied the resilience of the soil's ability to suppress plant diseases. This ability suffered when soils were subjected to combined heat and drought stress. Stress tolerance and resilience of suppressiveness differed among soils. High stress tolerance was associated with low resilience. Surprisingly, soil carbon content as an indicator of high soil fertility was associated with weak stress tolerance of suppressivness. In a second experiment, two legume species, alsike clover and black medic, were sown as sole crops or in a species mixture and were subjected to transient drought. Resilience to drought was higher in alsike clover than in black medic and never stronger in the mixture than in the best sole crop. Further, we developed the quantification of compensation in plant mixtures.

* Dates for project start and end should be the dates for which the grant is received (Not dates for total project if longer than period for which grant is received)