BRAVÖ
*Improving Soil Fertility without Animals*

# Improving soil fertility on biodynamic and organic farms with low stocking densities or no animal husbandry?

M. Oltmanns[1], S. Zikeli[2], A-M. Rieps[2], M. Müller-Lindenlauf[3], B. Engler[2], J. Ell-Schnurr[4], U. Hampl[5]

**1.**

**Evaluation of existing practices to maintain soil fertility**

Innovations from „inventors“

**2.**

**Field trial on the assessment of clover grass based fertilizers**

**3.**

**On-farm trials for a better understanding of innovations applied by the “inventors”**

**4.**

**Knowledge transfer between the “inventors” and test farms.**

The project includes an intensive networking **(P2P learning)**

## 10 + 10 FARMS

## 10 “inventor” farms

(6 Demeter and 4 Bioland farms)

- Use of clover grass based fertilizers
- Methods of composting of organic matter from the farm
- Combination of new green manures (including the application of fermented plant materials)
- Modified soil tillage systems
- Selected innovations should be highly sustainable
- The purchase of organic and nitrogenous fertilizers is limited

They present their practices for maintaining soil fertility in field days to other farmers.

## 10 test farms

- They are interested in the adoption of these innovations
- The test farms will be supported during the introduction of the innovations by advisors and the “inventors”

The ten test farms have the possibility to **try out one or more** of these innovations on their farms **from the second year onwards**.

## Sustainability Analysis

**life cycle assesment, humus balance and economic evaluation**

- A sustainability analysis of the “inventor“ farms will be carried out
- Based on that, recommodations for the farms will be given by advisors and researchers.
- A sustainability analysis in the 3rd year will monitor the success of the farm development.

## On-farm trials

**Focus: fertilization with compost, use of green manures**

E.g. high density seeding of field beans (Vicia faba) in vegetable production and the use of fermented plant materials after tillage of the green manures.

## Field trial

**Clover grass based-fertilizers produced on farm or on neighboring farms**

- Resulting in higher N-fixation
- Can serve as transfer fertilizers for crops with high nutrient demand (e.g. field vegetables or maize)

**Assessed in potatoes:**

1. **Clover grass silage with two different application times**
2. **Biogas residues from clover grass**
3. **Clover grass pallets**
4. **Fresh cut-and-carry clover grass biomass**
5. **Composted manure**
6. **Horn grit**
7. **Unfertilized control**

The applied **N** for the different fertilizers is 100 kg $ha^{-1}$. In addition, the carry-over effect of the fertilizers to the following crop is assessed in summer wheat.

Europäischer Landwirtschaftsfonds für die Entwicklung des Ländlichen Raums (ELER)

Hier investiert Europa in die Ländlichen Gebiete mitfinanziert durch das Land Baden-Württemberg

Baden-Württemberg
MINISTERIUM FÜR LÄNDLICHEN RAUM UND VERBRAUCHERSCHUTZ

PARTICIPATING IN eip-agri AGRICULTURE & INNOVATION funded by European Commission

[1] Forschungsring e.V., **Contact:** oltmanns@forschungsring.de
[2] Universität Hohenheim
[3] Hochschule für Wirtschaft und Umwelt Nürtingen-Geislingen
[4] Demeter Beratung e.V.
[5] Beratungsdienst Ökologischer Landbau Ulm e.V.