

Organic fertilizers in fruit orchards

Problem

Fertilization of organic fruit orchards strongly relies on authorized external commercial fertilizers leading to nutrient flows from conventional into organic farming systems.

Solution

The use of alternative fertilizers including legume-based materials and non-contentious external commercial fertilizers, should be based on locally available resources. An integrated approach is recommended.

Benefits

Alternating and integrating different fertilizers, depending on the nutrient budget and the soil status of plant available nutrients, can lead to a more balanced nutrient input.

Practical recommendation

When planning to use organic fertilizers consider:

Alternative recommended fertilizers (Picture 1):

- Clover-grass pellets or silage, from on-farm sources (preferred) or external sources
- Waste materials (e.g., biogas digestate, residues from yeast production, household wastes)
- External fertilizers locally available (e.g., composts or extracts)

New fertilization strategies must be developed:

- The mineralization rate of the products: liquid fertilizers, stillage, biogas digestate - mineralize rapidly and thus when applied in spring N supply matches well with fruit tree N demand, while compost materials have a very low N availability (< 10%) in the year of application
- Site specific features (e.g., cropping system, management practices, soil type, climate)

When searching for alternative fertilizers:

- Compatibility with existing farm machinery
- Production costs, including labor and machinery costs (e.g., for clover-grass silage produced by the farmer)
- Acceptance by certification bodies or additional quality schemes (e.g., from retailers) and potential contaminations (in case of waste derived fertilizers)

Applicability box

Theme

Crop production, farm management

Keywords

Crop management, horticulture, nutrient management

Context

Any farm

Application time

Growing season

Required time

Similar to other tillage or fertilisation practices

Period of impact

In the year of application and following seasons

Equipment

Common farm equipment

Best if

All practices should be alternated to assure better nutrients (particularly N) dynamic and availability to plants



Picture. 1. Different kinds of alternative fertilizers. On the Top it is shown horn grit (left), stillage from yeast production (middle), biogas digestate (right). On the bottom it is shown compost (left), silage (middle), clover grass pellets (right). (Photos: B. Lepp)

Further information

Further reading

- Möller, K., Schultheiß, U. 2014. Organische Handelsdüngemittel im ökologischen Landbau. Kuratorium für Technik und Bauen in der Landwirtschaft (KTBL). Darmstadt. Germany. p. 392.

Weblinks

- [Website of the Core Organic project Domino](#)
- Check the [Organic Farm Knowledge platform](#) for more practical recommendations

About this practice abstract

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