

Developing a fertilisation strategy in organic pome fruit

Problem

In organic fruit growing, correct fertilisation is crucial. It should be done annually to achieve the plant's vegetative-productive balance.

Solution

A regular supply of organic soil conditioners, according to the soil type, allows for the proper nutritional management of the plants (picture A).

Benefits

Mineralisation and soil fertility are increased by using organic fertilisers. As a result, soil fatigue is prevented, and environmental sustainability is increased (picture B).

Practical recommendation

It is recommended to take the following steps to determine the soil structure and chemical/physical properties:

- Developing a fertilisation strategy requires soil analysis (every five years). Through this method, deficiencies, imbalances, or excesses of nutrients can be detected (Picture C and E). To learn more about this topic, check the 'further reading' section at the end of this document.
 - Foliar analysis reveals the actual nutrient status of the crop, both qualitatively (optimal ratio of different nutrients) and quantitatively (the percentage of nutrients that the plant has managed to absorb).
 - The 'spade test' allows us to examine soil fertility, soil texture and the effectiveness of tillage (Picture D-E).
 - Visual observation allows the grower to empirically understand the current state of the orchard (e.g., plant vigour, leaf colour).
- It is advisable to carry out a comparison with the previous analyses of the main micro- and macronutrients and soil pH. The nutrient balance will enable you to develop a fertilisation strategy.
- It is advisable to leave the soil free of weeds under the row when fertilising. This practice avoids competition for nutrients between the weeds and the main crop.
- To avoid nitrogen depletion in the soil, it is advisable to sow legumes (fodder and grain legumes) in the orchard in rotation (Picture G).
- For proper nutrient supply, it is advised to evaluate the nutritional content of each commercial fertiliser product chosen to establish the actual availability of each major nutrient (N, P, K).

Applicability box

Theme

Crop production, temperate fruits

Keywords

Fertilisation, organic amendments, mineralisation, soil fertility, foliar and soil analysis, macro-and micronutrients.

Context

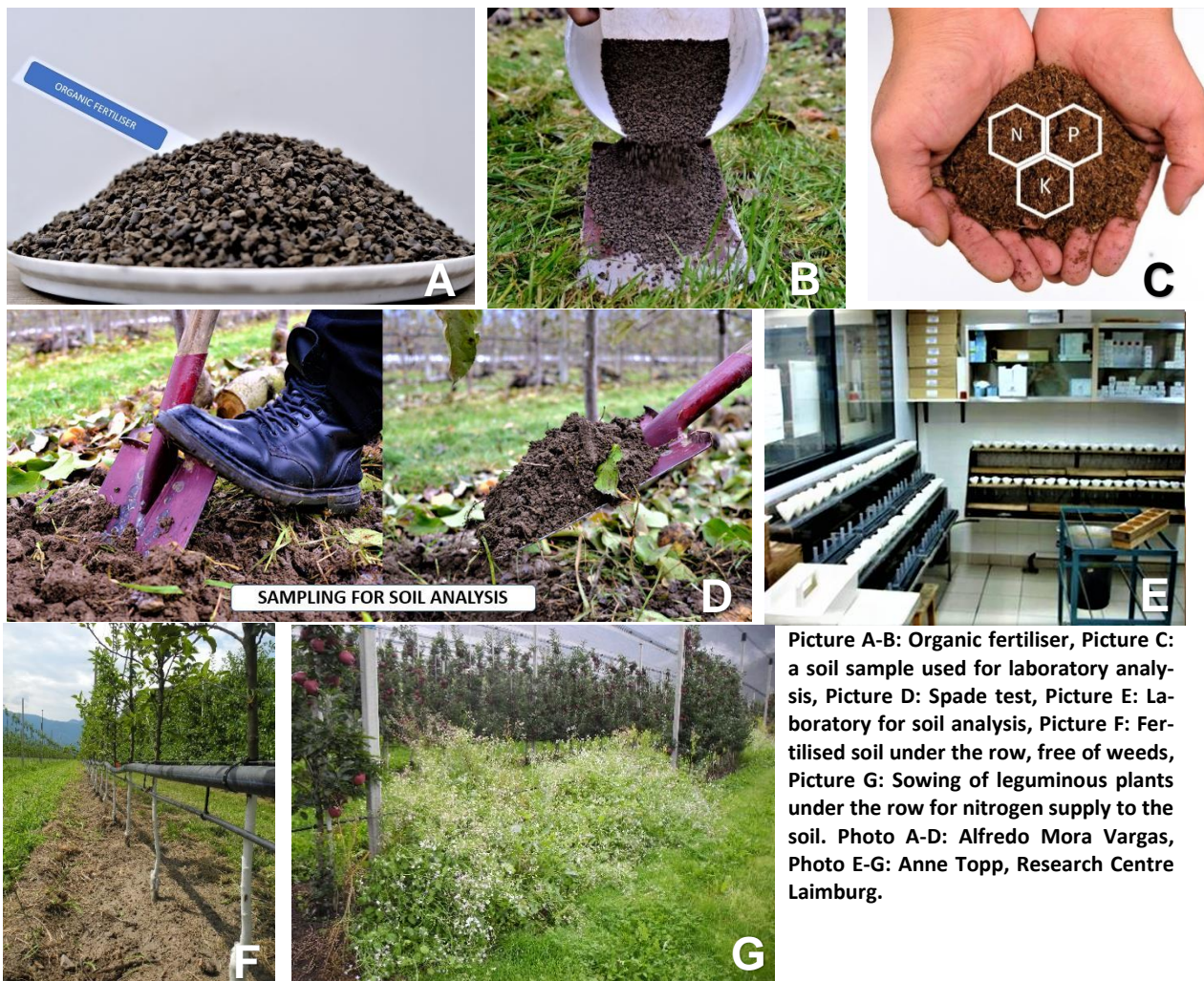
Northern and Central Europe

Application time

Soil analysis: end of vegetative cycle

Foliar analysis: during flowering

Fertilisation: spring/summer period



Picture A-B: Organic fertiliser, Picture C: a soil sample used for laboratory analysis, Picture D: Spade test, Picture E: Laboratory for soil analysis, Picture F: Fertilised soil under the row, free of weeds, Picture G: Sowing of leguminous plants under the row for nitrogen supply to the soil. Photo A-D: Alfredo Mora Vargas, Photo E-G: Anne Topp, Research Centre Laimburg.

Further information

Further reading

- Kelderer, M., Thalheimer, M., Andreus, O., Topp, A., Burger, R., Schiatti, P. 2008. The mineralization of commercial organic fertilizers at 8°C temperature.
- Schunk, I., Topp, A., Kelderer, M., Blankenburg, D. 2022. The influence of organic fertilizers on nutrient balance, yield, soil nutrient and organic matter - results of a 10-year field study.
- Niggli, J., Gelencsér, T., Dierauer, H., Mäder, P. 2021. Merkblatt FiBL. Bodenuntersuchungen für Biobetriebe- Dank ausgeglichenem Nährstoffzustand die Ertragssituation verbessern. (German)

About this practice abstract

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Laimburg 6, 39040 Post Auer (Bz), Italy
+39 0471 969500, Laimburg@provincia.bz.it,
www.laimburg.it

Author: Alfredo Mora Vargas, Markus Kelderer

Contact: alfredo.moravargas@laimburg.it, markus.kelderer@laimburg.it

Review: Ilsa Phillips (IFOAM Organics Europe), Lauren Dietemann (FiBL)



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