



ECOMETHOD[®]
BY BMS MICRO-NUTRIENTS

ECOMETHOD

Fertilise with a reduced carbon footprint

Context

The speed of consumption of natural resources and the environmental pressure generated by human activity is creating a continuously increasing treat on the environment in which we live. The increase in greenhouse gas **(GHG) emissions** in the atmosphere and the climate change as a result of it, are the most important challenges that humanity will face in the coming decades, and will require significant changes in the use of natural resources, production and all other economic activities.

The farming sector is involved in two ways. On the one hand agriculture is responsible for around 9 % of the total emissions of greenhouse gases into the atmosphere. As the world population continuous to grow and demand of farm products increases, the impact will continue to raise. On the other hand agriculture is one of the sectors most exposed to the new, more extreme climate conditions, which causes a higher variability in the production and risks for the crops.

Consumers are increasingly putting pressure on industries and politicians! They want more and more products that are produced in a more sustainable way, with more respect for the environment. Furthermore they expect from the politicians to put legislation in place that obliges the industries to produce in a more sustainable way, with a smaller impact on our planet. Also farming must follow this evolution! The Common Agricultural Policy (CAP) and other legislation will force the sector (with possibly financial stimuli and/or penalisations) to produce with a reduced impact on the environment.



The „Carbon Footprint“

To measure the impact on the environment (in particular on climate change caused by GHGs) of any human activity, the “carbon footprint” is the worlds standard. It expresses in a synthetic (with 1 single figure it describes a complex reality), clear (understandable for everyone) and sharp (simple and immediate) way the environmental impact of any human activity.

Agricultural production also has a carbon footprint. The production of, for example, a ton of potatoes has a global carbon footprint, which is the sum of the footprint of the preparation of the field, the sowing, the irrigation, the treatments, the harvest, the transport, ... and also the fertilisation!

The fertilisation footprint can be reduced considerably by using the BMS Micro-Nutrients foliar fertilisation programmes.

This is ECOMETHOD !!!!!
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To avoid greenwashing (*) and to give the project more credibility, BMS Micro-Nutrients took contact with the 2AGroup, a consultant specialised in environmental studies, to realise a comparative study of the carbon footprint of different fertilisation methods. To quantify each method, each method was modelled in a calculation software (Software SimaPro Analyst) that uses recognized and certified databases (Ecoinvent, Defra, LCA Food DK, ...).

On the next page you will find the results of these first comparisons certified by this company (attention: the company did not certify a specific product but a fertilisation method: traditional soil fertilisation, a complete foliar programme or possibly an intermediate method that combines reduced soil fertilisation with a foliar programme).

The energetic advantages of ECOMETHO

ECOMETHOD:

1. Foliar application of nutrients at the appropriate development stage of the plant
2. The applied nutrients are absorbed with a high efficiency (up to 95 %)
3. The nutrients can be applied in combination with other applications of for example pesticides.

Soil fertilisation:

1. The nutrients are applied before the absorbtion period by the crop, before the growing season
2. Big quantities are applied to compensate the variable availability and efficiency of the soil fertilisation.
3. The soil applications have to be done with specific field entries.

(*) greenwashing = marketing products or services as eco-friendly in a misleading or deceiving way to promote the perception that they are more sustainable or eco-friendly then they are in reality, just for commercial reasons.

ECOMETHOD

Efficient • Economical • Ecological

In the first place, the A2Group company studied 3 concrete and real cases, to get a first idea of the impact the ECOMETHOD fertilisation method has, on the carbon footprint. In each case they made a comparison between a traditional soil fertilisation with, a 100 % foliar fertilisation programme. The products used (of BMS MN and traditional soil fertilisers) were modelled based on their chemical components with the calculation software (Software SimaPro Analyst 8.3) that uses recognized and certified databases (Ecoinvent 3.4 and Agrifoodprint 4.0). The information regarding the quantities of the different products applied (foliar and soil) in the corresponding cases were provided by BMS MN and its agronomists and compared to the official fertiliser recommendations indicated in the regional manuals for integrated production (DPI for Italy).

The results are really spectacular!!!!

With ECOMETHOD an important reduction of the carbon footprint was obtained. On top of that, there was a reduction in the amount of field entries, a reduction in labour time and also a reduction in the storage and handling costs of fertilisers.

The 3 studied cases:

1. Apple production: Empresa Fondazione Edmund Mach - Italy 2018
2. Hazelnut production: Empresa: Loacker - Italy - 2018
3. Vineyard: Italy - 2018



	Carbon footprint	field entry	fuel	time	logistics
Apple	-95 % CO ₂ eq	- 2 entries	-2 L/ha	48 min	-92 % stored volume
Hazelnut	-98,5 % CO ₂ eq	- 2 entries	-2 L/ha	40 min	-99 % stored volume
Vineyard	-98,9 % CO ₂ eq	- 2 entries	-6 L/ha	38 min	-94 % stored volume

In practice an example of a client!



In Italy, a producer of plums, Az. Agr. Donati Giuliano in Faenza (RA) Italy, started in 2016 with the foliar programmes of BMS Micro-Nutrients, on the variety Yummi. At that moment there were important problems with iron deficiency and consequently productivity. The complete foliar programme (with as well macro- as micro-nutrients including products necessary to control the iron chlorosis) was combined with a considerable reduction of the soil fertilisation.

Applied programmes (seasons 2016-2017-2018)

Traditional fertilisation of the field:

N: 88 units; P₂O₅: 64 units; K₂O: 143 units + common products containing micro-nutrients

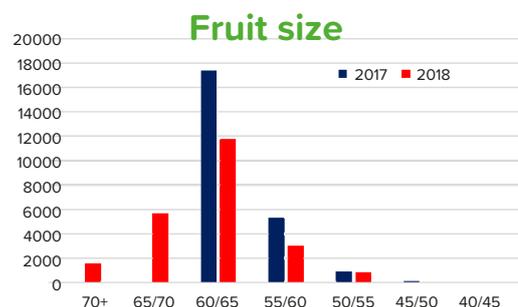
Foliar programme of BMS Micro-Nutrients:

N: 20 units; P₂O₅: 5 units; K₂O: 47 units + complete foliar programme of BMS MN



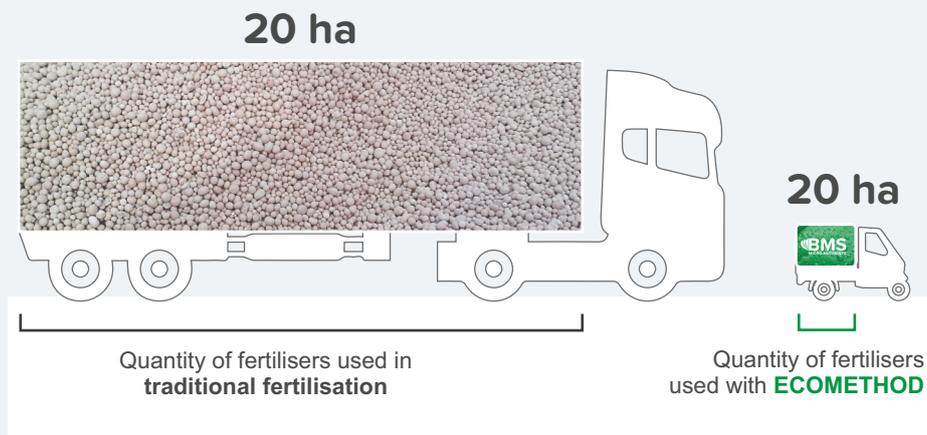
Results:

- Reduction of the carbon footprint: **-69,97%**
(288,53 CO₂ eq with BMS MN compared to 900,69 kg CO₂ eq per ha)
- The year 2016 was a year in which the orchard needed to recover from the iron chlorosis.
The productivity in 2017 and 2018 were respectively:
27080 kg/ha (with 86 % of first quality fruits)
and **28078 kg/ha** (with 80 % of first quality fruits)



Conclusions

Comparison of the quantity of fertilisers used



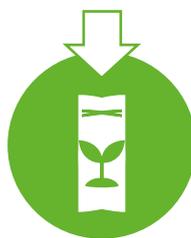
ECOMETHOD
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...is a very efficient and ecological way to nourish your plants:

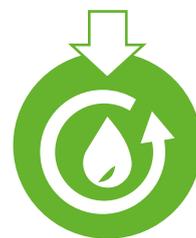
ECOMETHOD is a technique that uses primarily foliar nutrition to nourish the plant. The leaves of the plant absorb high quantities of nutrients, thanks to their high CEC (Cation Exchange Capacity). Applying nutrients directly to the leaf, will allow you to use smaller quantities of fertilisers, up to 90% less, while maintaining your yield at a high level with a good quality.



Lower carbon footprint
(reduced CO₂ emissions)



Smaller amounts of fertilisers used and handled



No contamination of ground water and soil