



## Almond: ECOMETHOD in young orchard

### Aim of the trial

This report shows the results of 2 years of trials (2019-2020) in which only foliar fertilizers (NTF) were applied to a young almond tree orchard.

### General information

#### Conditions of the trial:

Trial location: Italy – Lazio  
Age of the trees: Third leaf in 2019  
Soil type: Clayey loam, slightly acidic - neutral, OM = 2.10% (medium - high)  
In cooperation with: Università degli Studi della Toscana

Plant density: 666 trees/ha, 5 m x 3 m  
Variety: Tuono grafted on GF677

### Treatments

#### 2 modalities (fields of 2.5 ha):

⇒ T0: Control (only soil fertilization, identical program for the 2 years)

	Product	Quantity	Date
1	12-12-17	400 kg/ha	Early March
2	Ammonium nitrate (34)	200 kg/ha	Early April
3	Potassium nitrate (13-46)	300 kg/ha	End of June
4	Ammonium nitrate (34)	100 kg/ha	End of September

⇒ T1: BMS MN applications (without soil fertilization, identical program for the 2 years). Volume of water: 1000 L/ha

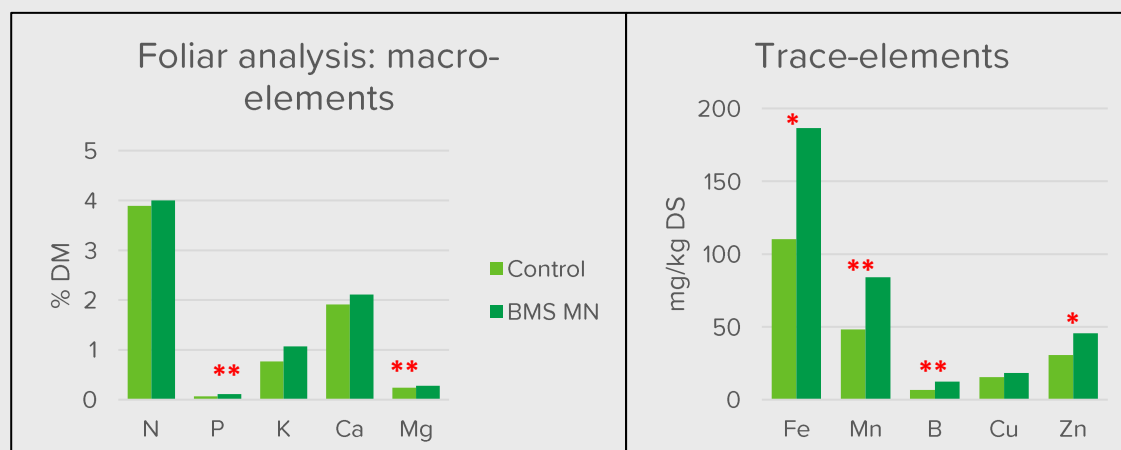
	Product	Quantity	Date
1	Kappa M	5 kg/ha	Medio May
2	Fructol NF	2.5 kg/ha	Early June
3	Fructol NF	2.5 kg/ha	Early July
4	Fructol NF	3 kg/ha	Early August



### Results

For each modality, 10 plants (randomized) were selected for measurements. Leaf measurements were performed on the first two mature leaves for all plants of the different modalities.

#### Foliar analysis (data from 2020 - averages of the 2 sampling moments: June and July)



⇒ Contents of P, Mg, Fe, Mn, B and Zn are significantly higher in the modality BMS MN (\* = p < 0.05 ; \*\* = p < 0.01).



**Chlorophyll (Chl), flavonols (Flav), anthocyanins (Anth) and NBI index (nitrogen balance index) measured with the DUALEX PLUS device – data from 2020**

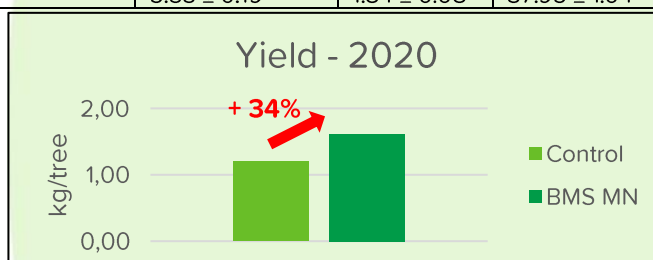
	Modality	Chl	Flav	Anth	NBI
June	Control	41.47 ± 2.95	2.11 ± 0.09 b	0.03 ± 0.02	19.69 ± 1.73
	BMS MN	42.46 ± 2.98	2.16 ± 0.08 a	0.04 ± 0.02	19.53 ± 2.09
July	Control	41.43 ± 2.40	2.14 ± 0.13 ab	0.03 ± 0.02	19.25 ± 2.26
	BMS MN	41.13 ± 2.83	2.14 ± 0.12 ab	0.03 ± 0.02	19.34 ± 2.09
Mean	Control	41.45 ± 2.68	2.12 ± 0.11 B	0.03 ± 0.02	19.47 ± 2.02
	BMS MN	41.81 ± 2.97	2.15 ± 0.10 A	0.03 ± 0.02	19.43 ± 1.94

⇒ Significantly higher flavonol content in the BMS MN thesis (p < 0.05).

**Yield and diameter of the trunk – data from 2020**



Modality	Yield (kg/tree)	AST - calculation of the diameter of the trunk at 30 cm height (cm <sup>2</sup> )	Weight whole nut (g)	Seed weight (g)	Weight seed /whole nut (%)
Control	1.20 ± 0.22 b	56.74 ± 3.85 b	4.87 ± 0.26	1.78 ± 0.06	36.98 ± 1.17
BMS MN	1.61 ± 0.56 a	71.09 ± 7.79 a	5.33 ± 0.19	1.84 ± 0.08	37.95 ± 1.04

⇒ The yield determined for BMS MN was significantly higher than in the control trees, as was the vigor.



**Calculation of the carbon footprint of Ecomethod**

Calculation for 1 ha and for 1 year.

Quantity CO <sub>2</sub> eq. ECOMETHOD 	Quantity CO <sub>2</sub> eq. TRADITIONAL FERTILIZATION (Control) 
31.8 kg/ha	1266 kg/ha



<del>CO<sub>2</sub></del>	1234.2	The reduction of CO <sub>2</sub> eq. expressed in kg/ha
<del>% CO<sub>2</sub></del>	97.5%	The saving percentage of CO <sub>2</sub> eq.