Table S1. Raw material used in the fertilzers formulation.

Raw Material	Units	Control	PKA	PA	PD	ST
NH_3	mL	1,19	1.95	1.94	1.94	2.59
$(NH_4)2SO_4$	g	9,52	14.29	14.29	14.29	11.90
H3PO4	mL	2,40	2.40	1.20	1.20	1.80
$(NH_4)_2(HPO_4)$ in solid state	g	13,04	8.70	4.35	4.35	4.35
KCl	g	25,00	18.33	23.70	25.00	25.00
Clay	g	38,96	8.00	14.69	14.16	22.82
Bio-based raw material	g	0	33.33	18.18	21.45	17.28
H_2SO_4	mL	5.00	5.00	5.00	5.00	5.00
$(NH_4)_2(HPO_4)$ PR*	g	15,22	10.87	15.22	15.22	14.13
NH_3 PR*	mL	14,73	10.52	14.73	14.73	13.68
H_3PO_4 PR*	mL	8,41	6.01	8.41	8.41	7.81

* PR: Pipe Reactor. (NH4)2(HPO4) RT means DAP slurry produced in the pipe reactor (which is different from DAP granulate produced in solid state). So, NH3 PR and H3PO4 PR are the ammonium and the phosphoric acid involved in the reaction of DAP production in the PR.

Table S2. Results of soil analysis used in microcosms assay.

Parameter	**Value**
Textures (USDA)	Sand 58%
	Silt 22%
	Clay 20%
Soil Texture Class (USDA)	Sandy-loam
pH (measured in water)	7.93
Carbonates (% limestone)	7.15
Organic matter (%)	1.87
Total nitrogen (%)	0.13
C/N ratio	8.38
Phosphorus (Olsen) (ppm)	13.51
Calcium (cmol (+) kg^{-1})	20.69
Magnesium (cmol (+) kg^{-1})	0.80
Potassium (cmol (+) kg^{-1})	1.27
Sodium (cmol (+) kg^{-1})	0.02
Ca/Mg ratio	25.84
K/Mg ratio	1.58
C.E.C (Cation exchange capacity (cmol (+) kg^{-1})	12.46
Manganesium (ppm)	7.19
Iron (ppm)	12.96
Copper (ppm)	1.19
Zinc (ppm)	0.84
Boron (ppm)	3.30
Conductivity (dS/m)	0.13