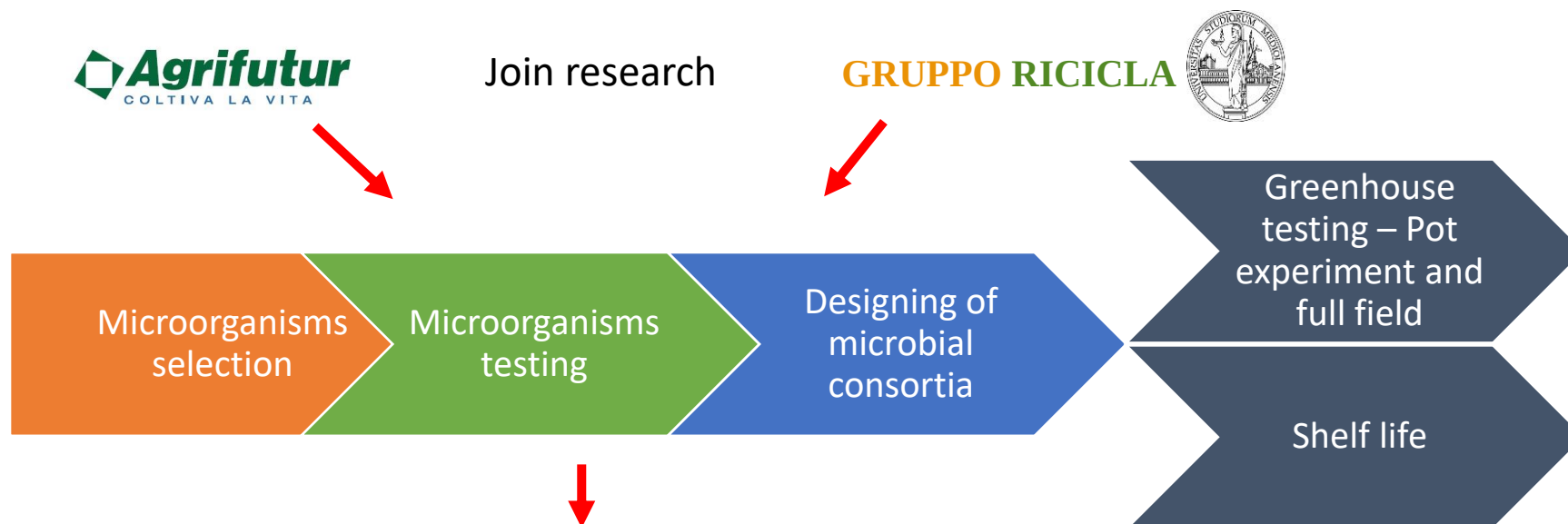


AIM: Improve **organic amendments recovered** (e.g. compost, biochar, biodried manure) by activating them biologically with **mixed micro-organism cultures** with biostimulants properties (Fertimanure - H2020-CE-RUR-08-2019)



Activated substrate from Pilot Plant recovering nutrient from manure (Fertimanure - H2020-CE-RUR-08-2019)

BBF1

Biodried solid fraction (ES) + Microbial consortium 1
Dosed as organic fertilizer for N requirements of tomato

BBF2

Soil conditioner (NL) + Microbial consortium 2
Dosed as organic fertilizer for N requirements of tomato

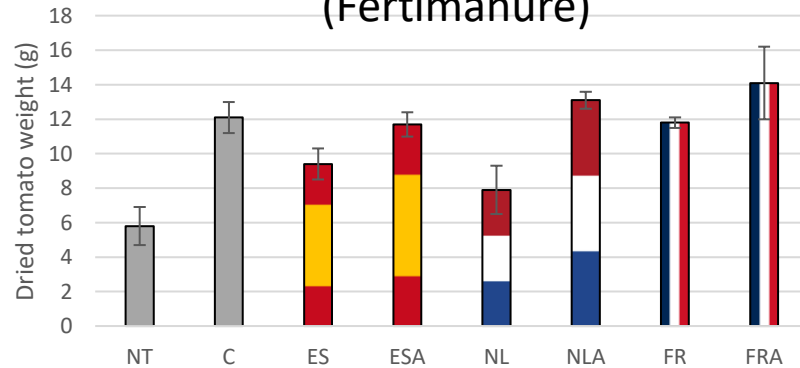
BBF3

Biochar (FR) + Microbial consortium 3
Dosed as organic amendment (20 ton/ha)



Testing activate biofertilizers on tomato: greenhouse and full field: result

Greenhouse experiment (Fertimanure)



A = bioactivated; C = chemical; NT = control

Result from full field trials with industrial tomato (Circoval project, GAL - PSR - Regione Lombardia)

	Control	Digestate	Activated digestate	Chemical
1	6.500	7.160	10.580	9.120
2	7.380	7.260	9.380	6.160
3	6.460	5.840	12.360	10.080
Total	*6.780±520	6.753±792	10.773±1.499	8.453±2.043
*kg/parcel	48.9 t/ha	48.7 t/ha	78 t/ha	61 t/ha

The effect is not only on the production but, also, on the quality.

	NC	CF	BBF1	ABBF1	BBF2	ABBF2	BBF3	ABBF3
Total solids (%)	12.6 ± 1.3	10.1 ± 1.2	9.2 ± 0.3	10.6 ± 0.5	9.5 ± 0.8	10.2 ± 0.3	10.4 ± 0.8	12.4 ± 1
Total soluble sugars (°Brix)	6.3 ± 0d	7.1 ± 0b	6.7 ± 0.1c	6.8 ± 0c	6.7 ± 0.1c	6.9 ± 0.1c	7.3 ± 0.1a	7.2 ± 0.1ab
Titrate acidity (% Citric Acid)	0.56 ± 0.01	0.52 ± 0.04	0.55 ± 0.02	0.55 ± 0.02	0.61 ± 0.06	0.57 ± 0.03	0.67 ± 0.01	0.62 ± 0
Sugar:Acid ratio	11.2 ± 0.3d	13.8 ± 1.2a	12.2 ± 0.4b	12.3 ± 0.4b	11 ± 0.1d	12 ± 0.1b	11 ± 0.1d	11.7 ± 0.1c
pH (pH unit)	4.13 ± 0.05	4.12 ± 0.02	4.18 ± 0.02	4.16 ± 0.01	4.12 ± 0.03	4.1 ± 0.05	4.1 ± 0.01	4.05 ± 0.02
Taste Index	1.12 ± 0c	1.21 ± 0.02a	1.16 ± 0b	1.16 ± 0b	1.16 ± 0b	1.17 ± 0.01b	1.22 ± 0a	1.2 ± 0a
Protein (%)	3.26 ± 0.23d	4.07 ± 0.08	4.25 ± 0.18a	3.98 ± 0.12b	4.44 ± 0.1a	4.4 ± 0.21a	4 ± 0.07b	3.64 ± 0.1c
Carotenoids (µg g ⁻¹)	32.8 ± 2.9d	60.2 ± 5.7c	63.6 ± 11.9c	97.5 ± 7.7b	55.9 ± 12.0c	82.7 ± 7.2c	99.9 ± 4.9b	129.4 ± 7.4a
Lycopene (µg g ⁻¹)	25.6 ± 2.3d	46.9 ± 4.4c	49.6 ± 9.3c	76 ± 6b	50.3 ± 4.1c	64.5 ± 7.2c	78 ± 4.9b	101 ± 7.3a

Activated biofertilizers allow nulling the use of chemical fertilizers increasing yield and product quality

