Figure S1. Overview of aggregate samples from Chivasso at family level, taxa > 0.6% are shown.

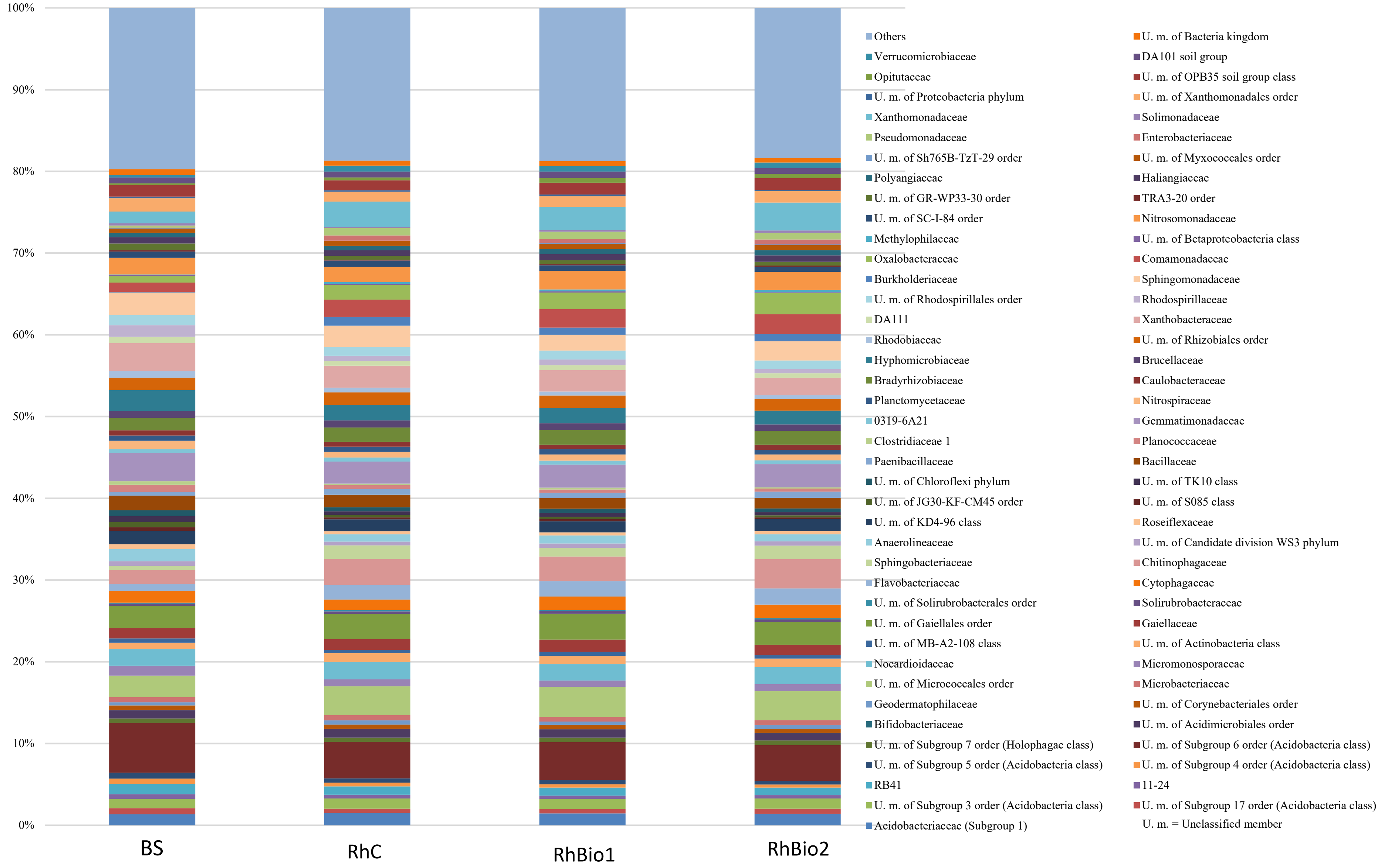

Figure S2. Overview of aggregate samples from Carignano at family level, taxa > 0.6% are shown.

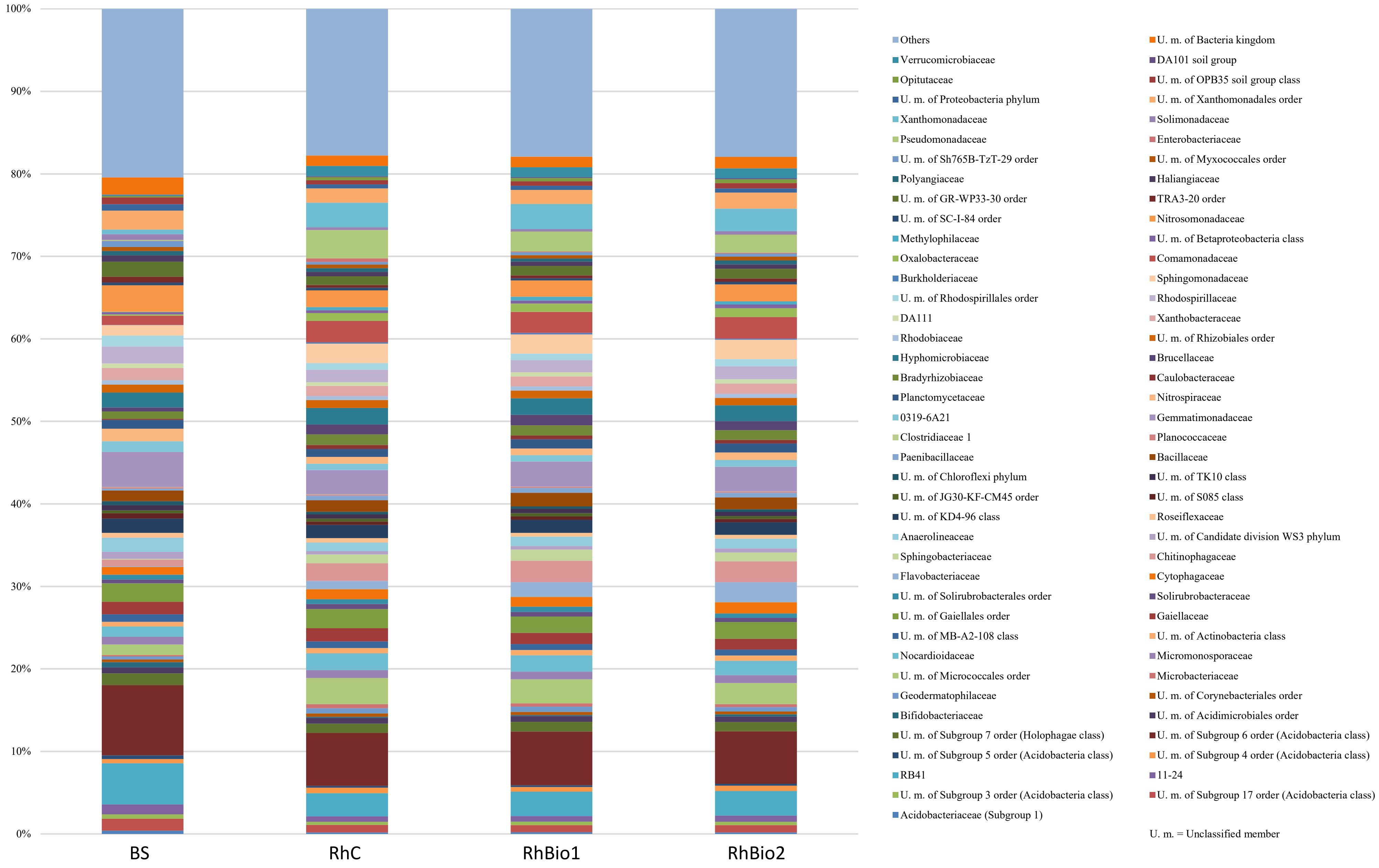

Figure S3. Overview of aggregate samples from Carignano at genus level, taxa>0.6% are shown.

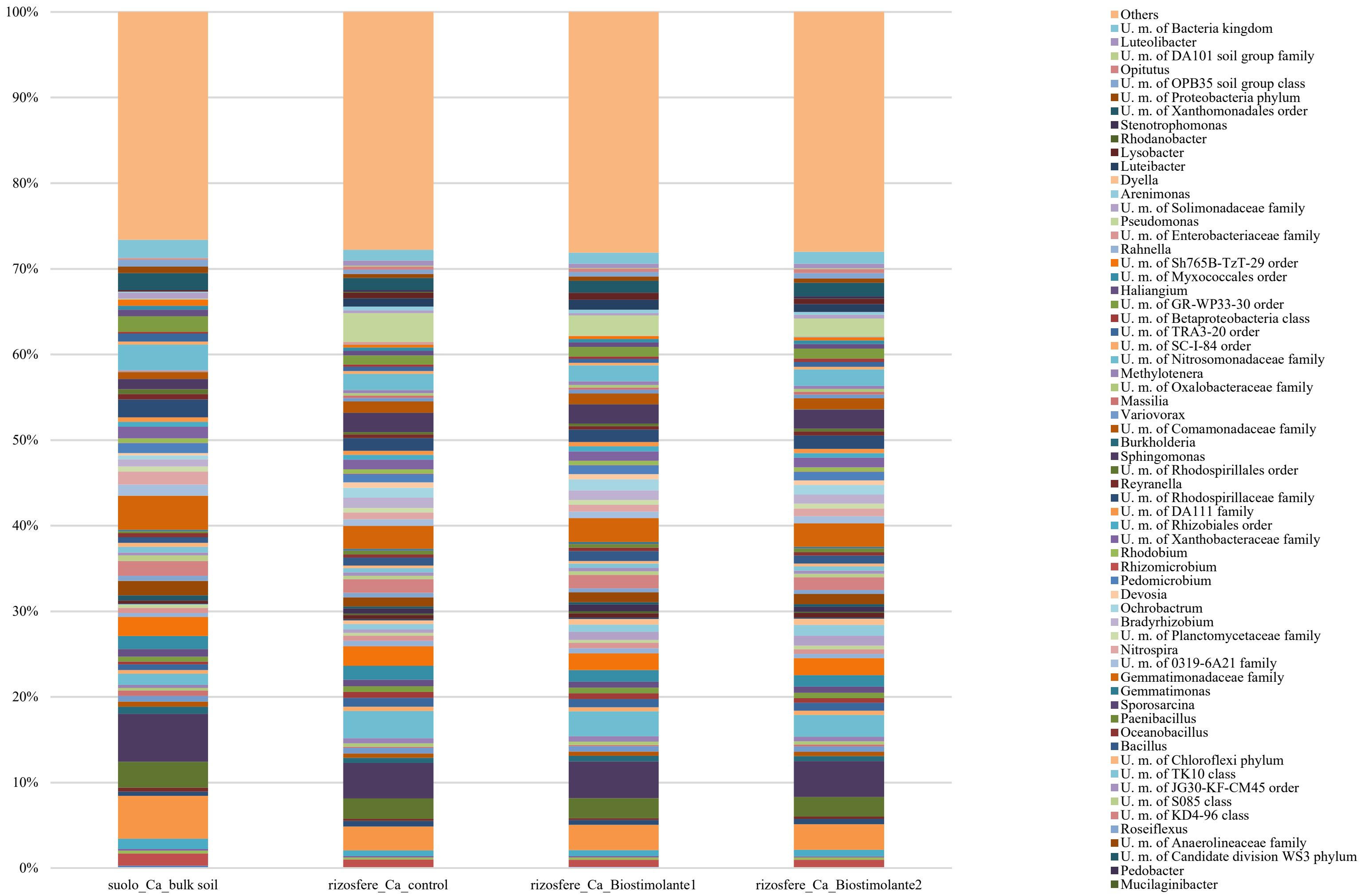

Figure S4. Overview of aggregate samples from Chivasso at genus level, taxa>0.6% are shown.

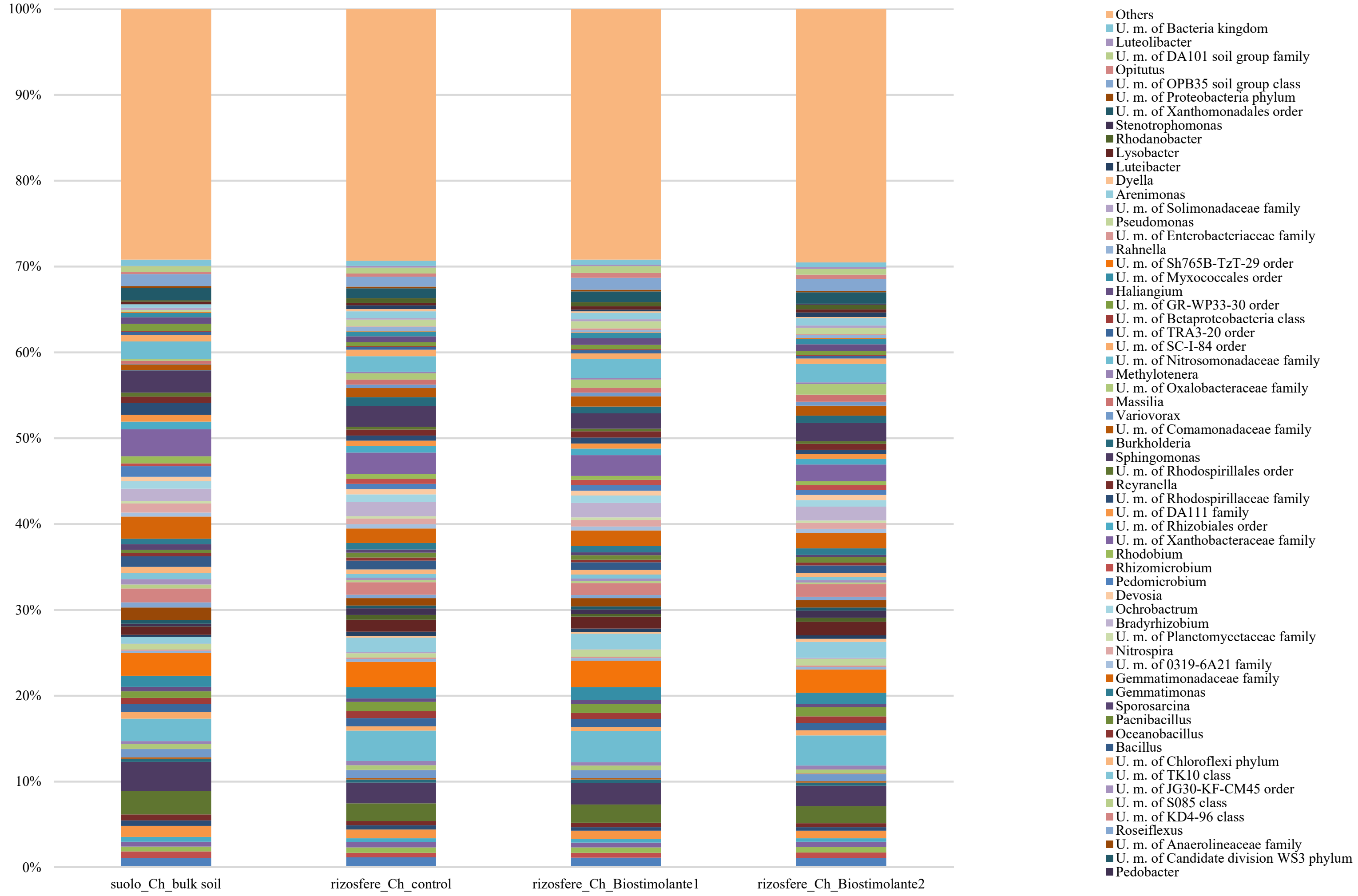

Table S1: Data filtering report of single sample runs. BS= bulk soil; Rh= rhizosphere; Ch=Chivasso site; Ca= Carignano site. Bio1=Biostimulant 1; Bio2= Biostimulant 2. Four biological samples were analysed for each treatment (named 1,2,3,4).

Sample	Number of sequenced pe reads	Number of pe reads with mean quality > 20	Number of merged pe reads	Human sequences	Length outside bounds of 100 and 400	Ambiguous bases	Homopolymers > 7	Mismatch in primers >1	Reverse primer not found	Final Read Number
BSCh1	75285	71888	68837	89	0	0	42	1607	66	67033
BSCh2	72336	71687	68856	13	0	0	39	2268	40	66496
BSCh3	66712	66052	64378	49	0	0	51	1998	52	62228
BSCh4	71673	70036	67176	66	0	0	48	3051	57	63954
RhCh1	61155	59316	57760	288	0	0	18	2292	51	55111
RhCh2	72638	70648	67787	1064	0	0	19	1705	53	64946
RhCh3	67095	65028	62731	398	0	0	18	1518	43	60754
RhCh4	66256	63213	60119	457	0	0	35	2245	45	57337
RhChBio1	68889	66372	64080	1595	0	0	31	1593	47	60814
RhChBio1	62286	60762	58872	477	0	0	20	2471	30	55874
RhChBio1	60056	58018	56758	161	0	0	33	1675	45	54844
RhChBio1	67764	64841	62504	196	0	0	37	2874	44	59351
RhChBio2	85535	81384	79529	1671	0	0	36	3145	58	74618
RhChBio2	63430	61830	59686	914	0	0	31	1652	43	57046
RhChBio2	58036	57224	55568	666	0	0	14	1441	37	53410
RhChBio2	41970	41631	39152	157	0	0	14	3555	99	35327
BSCa1	65185	62840	60210	46	0	0	89	1568	57	58450
BSCa2	57969	54958	52978	33	0	0	82	2229	34	50600
BSCa3	62278	59565	57743	65	0	0	90	1889	61	55638
BSCa4	59343	56737	54447	30	0	0	70	2924	51	51372
RhCa1	60645	59074	57398	393	0	0	85	2400	76	54443
RhCa2	60684	57910	55674	1468	0	0	72	1544	50	52540
RhCa3	58986	56407	54322	444	0	0	47	1453	71	52307
RhCa4	58374	56179	53672	243	0	0	46	2226	38	51119
RhCaBio1	65959	63107	60687	901	0	0	69	1512	38	58167
RhCaBio1	66246	64156	61822	595	0	0	71	2403	33	58720
RhCaBio1	65039	62675	61074	1024	0	0	82	1806	40	58122
RhCaBio1	76430	73249	70431	1341	0	0	98	3102	50	65840
RhCaBio2	70735	68722	66978	827	0	0	56	2633	45	63417
RhCaBio2	60817	59449	57041	392	0	0	50	1564	44	54991
RhCaBio2	65632	63467	61367	501	0	0	62	1490	42	59271
RhCaBio2	51349	50539	48135	385	0	0	55	2292	29	45374

Table S2. List of significant abundant taxa at least with one Biostimulant in Chivasso and Carignano sites, and microorganisms characteristics.

CHIVASSO SITE

Taxa identified	**Characteristics**	**Refences**
Opitutus genus	N-cycling	Van Passel et al., 2011
Nannocystis genus	Antimicrobial activity and siderophore production	Taylor et al 2001
U.m. PHOS-HE51 family	N-cycling	Dabert et al., 2001
Cytophagaceae family	N cycling	McBride et al., 2014
Chryseolinea genus	N-cycling	Kim et al., 2013
Niastella genus	IAA production, P solubilisation	Chen et al., 2016
Terrimonas genus	N cycling	Jin et al.,2103
Solimonadaceae family	Antimicrobial activity	Zhou et al.,2014
Rhodovastum	N cycling	Okamura et al., 2009

CARIGNANO SITE

Taxa identified	**Characteristics**	**References**
Anaeromyxobacter dehalogenans	N cycling	Sanford et al., 2002
Deltaproteobacteria	Sulfur-reducing bacteria. Plant growth promoting bacteria	Spain et al., 2009
Planctomycete LX80	N cycling	Uniprot

Actinoallomurus	PGPR, Phytohormon production	Tang et al., 2013
***Chitinophagaceae* family**	PGPR, IAA ACCdeamynase activity, P solubilisers	Rosenberg, 2014
Chloroflexia	PGPR, Phytohormon production	Pepe-Rnney et al., 2016
Anaerobacillus	Diazotrophic N cycling	Borsodi et al., 2015
Cohnella	Endophyte, N cycling	Garcìa-Fraile et al., 2008
Isosphaera	Phytohormon production	Wang et al., 2002
Nannocystis	Antimicrobial activity	Taylor et al 2001
Quadrisphaera	Antimicrobial activity	Maszenan et al., 2005
Ohtaekwangia	Antimicrobial activity	Correa-Galeote et al., 2016
***Anaerolinaceae* family**	Antimicrobial activity	Nguyen et al., 2016
***Thermoactinomicetaceae* family**	Antimicrobial activity	
Labrys	PGPR. Phytohormon production	Carvalho et al., 2008
Thermomonas	N cycling	Wang et al., 2014
Turneriella	Antimicrobial activity	O’Mahony et al., 2015
Pseudoduganella	N-cycling	Madhaiyan et al., 2013

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