Comparison of analysis of keystone OTUs of rhizosphere of *Solanum lycopersicum*: All samples, samples chosen by metadata, and samples chosen randomly.

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## 1 Introduction

For assesing the non-randomness of the results presented in "" here they are contrasted with new analysis. Since there more of them the samples of rhizosphere of *Solanum lycopersicum* were chosen for this task. Firstly they were diveded according to metadata. These samples were classified as "Desarrollo", "Llenado de fruto", "Por transplantar" and "Llenado de fruto". More than a half of them were classified as "Desarrollo". Hence they were divided by "Desarrollo" and all the others. There were also 10 random subsets of half (11) of the samples.

In each one of the cases a new correlation network was created and the analysis of script was done in the respective network. In this report are present the results of all 12 analysis and contrasted with the original one.

## 2 All samples, "Desarrollo" and Other

The analysis of samples labeled as "Desarrollo" gave more candidate to keystone OTUs than the original analysis. Meanwhile the analysis of the complement of samples gave less of them. As can be seen in Figures 9 and 10 both partial analyses gave OTUs whose relative abundance tends to be between the median and the mean relative abundance of all other OTUs across samples. This ressembles the distribution of keystone OTUs of the samples of Capsicum and Zea mays and contrasts that of the first analysis of the samples of Solanum lycopersicum.

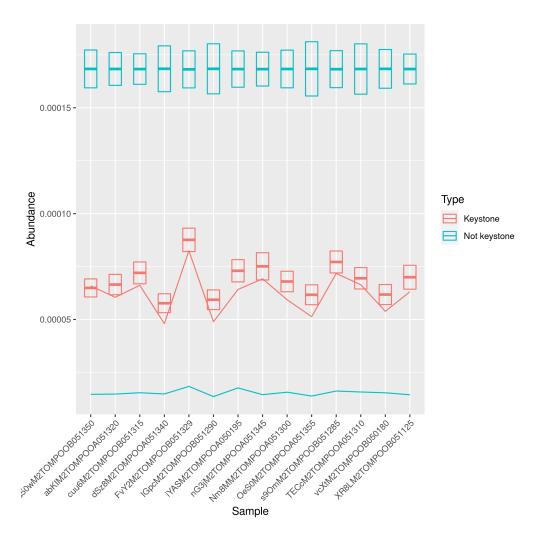


Figure 1: Boxes represent mean and standard error in the distribution of corresponding samples.

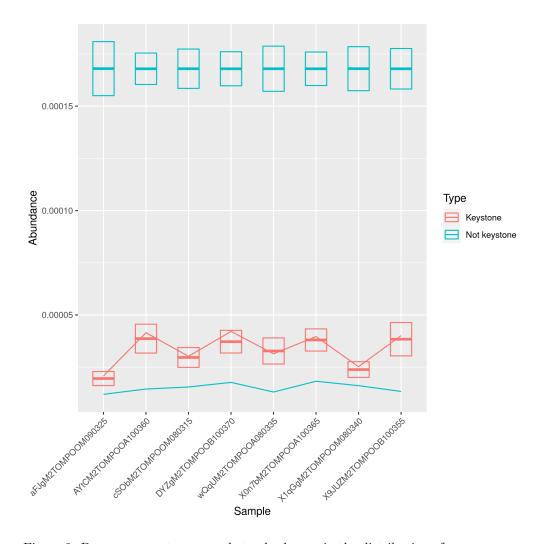


Figure 2: Boxes represent mean and standard error in the distribution of corresponding samples. Lines represent the corresponding medians. In these samples of rhizosphere of tomate no desarrollo.csv  $\,$ 

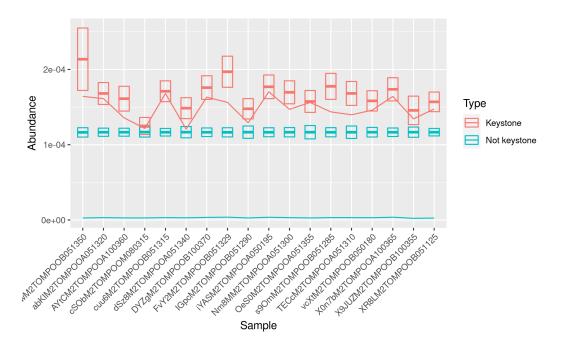


Figure 3: Boxes represent mean and standard error in the distribution of corresponding samples. Lines represent the corresponding medians. In these samples of rhizosphere of *Solanum lycopersicum* relative abundance keystone OTUs tend to be higher than the median and the mean of the relative abundance of all other OTUs.

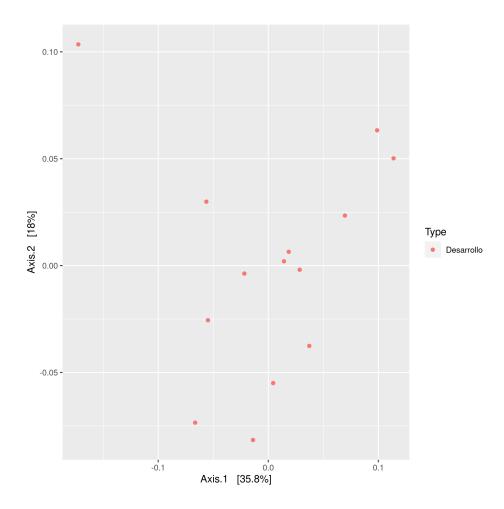


Figure 4: PCoA analysis with Bray-Curtis distance of rhizosphere samples

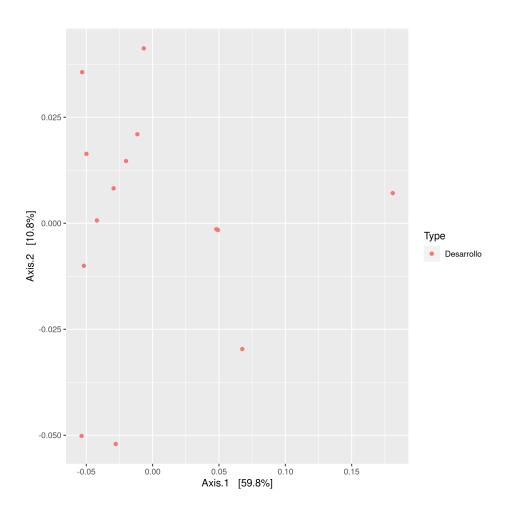


Figure 5: PCoA analysis with Bray-Curtis distance of rhizosphere samples

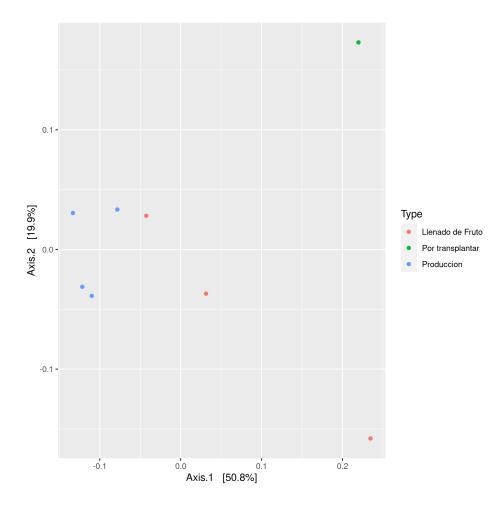


Figure 6: PCoA analysis with Bray-Curtis distance of rhizosphere samples of tomate no desarrollo.csv.  $\,$ 

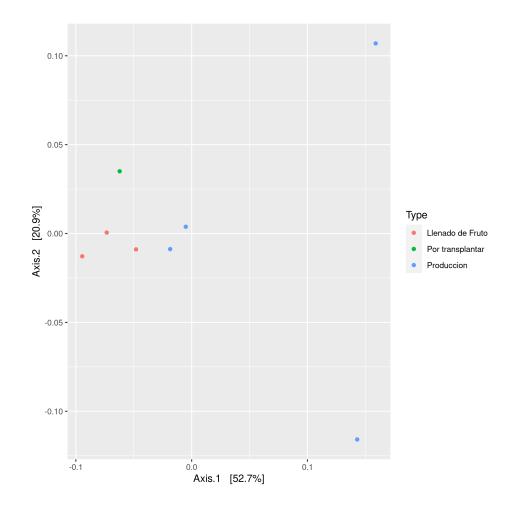


Figure 7: PCoA analysis with Bray-Curtis distance of rhizosphere samples of tomate no desarrollo.csv, restricted to keystone OTUs.

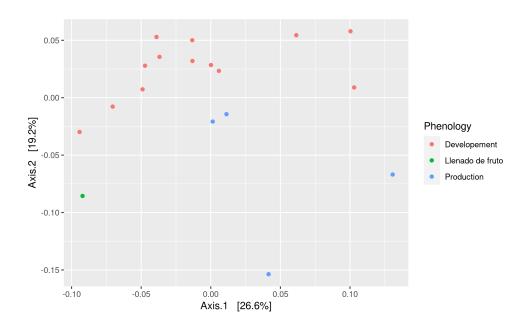


Figure 8: PCoA analysis with Bray-Curtis distance of rhizosphere samples of  $Solanum\ lycopersicum.$ 

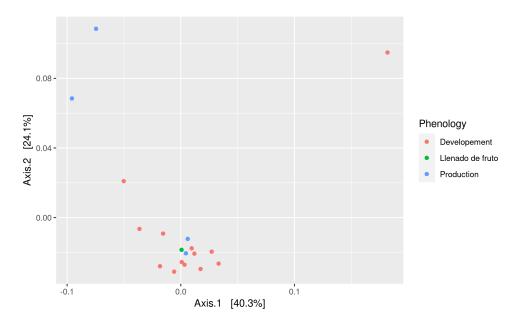


Figure 9: PCoA analysis with Bray-Curtis distance of rhizosphere samples of  $Solanum\ lycopersicum$ , restricted to keystone OTUs.

OTU   MeanRA   MedianRA   SI
299262
1858609
1658672         Ottowia sp. oral taxon 89         0.00013825         0.00013775         0.0000037           2202141         Chromobacterium phragmiti         0.00011981         0.00011471         0.0000033           658630         Pseudomonas sp. CMR5         0.00008174         0.00006956         0.0000075           1881017         Pseudomonas sp. S98         0.00004755         0.00004597         0.0000030           2054919         Pseudomonas sp. ADP         0.00005952         0.00004766         0.0000068           2219057         Pseudomonas sp. LGIE         0.0000361         0.00002501         0.000018           1898684         Pseudomonas sp. LPH         0.00004548         0.00002501         0.0000120           2590776         Pseudomonas sp. IzPS5         0.00002884         0.00002700         0.0000120           270450         Pseudomonas triviali         0.0000780         0.0000755         0.000013           183795         Pseudomonas delterrane         0.0006965         0.0000755         0.000013           29442         Pseudomonas silbanensi         0.0000454         0.0000457         0.000013           1691904         Pseudomonas silesiensi         0.0000516         0.0000457         0.000013           1691904         Pseudomonas silesiensi<
2202141         Chromobacterium phragmiti         0.00011981         0.00011471         0.0000033           658630         Pseudomonas sp. CMR5         0.00008522         0.00007885         0.0000075           1881017         Pseudomonas sp. S09G         35         0.00004755         0.00004597         0.0000036           2054919         Pseudomonas sp. ADP         0.00004755         0.00004597         0.00000683           2219057         Pseudomonas sp. LG1E         0.0000361         0.0000250         0.0000180           2590776         Pseudomonas sp. LPH         0.00004548         0.0000250         0.0000180           2774459         Pseudomonas sp. LPS5         0.00002328         0.00002083         0.0000019           2774459         Pseudomonas riviali         0.0000770         0.0000755         0.0000483           183795         Pseudomonas triviali         0.00007870         0.00005698         0.000004175           1691904         Pseudomonas ilbanensi         0.00002926         0.00001980         0.00000180           1691904         Pseudomonas sedimini         0.00007117         0.00004577         0.0000138           183130         Pseudomonas silesiensi         0.00005960         0.00005114         0.00000112           2666185
658630         Pseudomonas sp. ČMR5         0.00008522         0.00007885         0.0000675           1881017         Pseudomonas sp. SPR         0.00004755         0.00004597         0.0000075           2054919         Pseudomonas sp. ADP         0.00005952         0.00004786         0.00000685           2774873         Pseudomonas sp. LGIE         0.00003061         0.00002850         0.0000018           1898684         Pseudomonas sp. LPH         0.00002328         0.0000283         0.0000120           2590776         Pseudomonas sp. ISPS5         0.00002884         0.0000270         0.0000127           2774459         Pseudomonas sp. ISPS5         0.00002884         0.000077535         0.0000018           183795         Pseudomonas mediterrane         0.00007870         0.00007535         0.0000018           183795         Pseudomonas ibianensi         0.0000296         0.00001980         0.0000018           1691904         Pseudomonas silesiensi         0.0000211         0.00004877         0.00004877         0.00003482           163130         Pseudomonas silesiensi         0.00005116         0.00004823         0.000018           163194         Halopseudomonas salegen         0.00005116         0.00004823         0.000018           163185
1881017         Pseudomonas sp. 7SR         0.00008174         0.00006956         0.0000075           2054919         Pseudomonas sp. S09G 35         0.00004755         0.00004597         0.0000038           2774873         Pseudomonas sp. LG1E         0.0000361         0.00002850         0.0000018           2219057         Pseudomonas sp. LPH         0.0000448         0.00002501         0.0000120           2590776         Pseudomonas sp. LPPS         0.00002328         0.00002033         0.000019           2774459         Pseudomonas sp. LPS5         0.0000284         0.00002700         0.0000222           200450         Pseudomonas triviali         0.00007870         0.00005698         0.00000085           183795         Pseudomonas mediterrane         0.00006965         0.00005698         0.0000018           29442         Pseudomonas selisiani         0.0000296         0.00001980         0.000018           1691904         Pseudomonas selisiensi         0.00005116         0.00004577         0.000013           1853130         Pseudomonas salegen         0.00005960         0.00005114         0.000013           1853130         Pseudomonas selemini         0.00005116         0.00004823         0.000013           1853130         Pseudomonas selemini
2054919         Pseudomonas sp. S09G 35         0.00004755         0.00004597         0.00003030-00004786           2774873         Pseudomonas sp. ADP         0.00003652         0.00004786         0.00000688           2219057         Pseudomonas sp. LG1E         0.00004548         0.00002501         0.00001203           1898684         Pseudomonas sp. NIBRBAC00050277         0.00002328         0.00002083         0.00000194           2774459         Pseudomonas sp. LZPS5         0.00002884         0.00002700         0.00000223           200450         Pseudomonas triviali         0.00007870         0.00007535         0.00000483           183795         Pseudomonas tolaasi         0.00004854         0.00004475         0.00000483           29442         Pseudomonas tolaasi         0.00004854         0.00004475         0.000030           1691904         Pseudomonas sedimini         0.00007117         0.00004577         0.0000139           1853130         Pseudomonas silesiensi         0.00005116         0.00004475         0.000013           166152         Halopseudomonas salegen         0.00005960         0.00005114         0.000069           1073999         Cronobacter condimenti         0.0000434         0.0000411         0.0000611           2661612
2774873         Pseudomonas sp. ADP         0.00005952         0.00004786         0.0000068           2219057         Pseudomonas sp. LGIE         0.0003061         0.00002850         0.0000018           1898684         Pseudomonas sp. LPH         0.00002328         0.00002501         0.000012           2590776         Pseudomonas sp. NIBRBAC00050277         0.00002328         0.00002083         0.0000019           2774459         Pseudomonas pp. LPS5         0.0000284         0.00002700         0.0000025           200450         Pseudomonas triviali         0.00007870         0.00007535         0.0000048           183795         Pseudomonas mediterrane         0.00004854         0.00004475         0.0000085           29442         Pseudomonas iblanensi         0.00002296         0.00001980         0.00001980           1691904         Pseudomonas sedimini         0.00002110         0.000044577         0.000031           1853130         Pseudomonas silesiensi         0.00005116         0.000044577         0.000031           1666185         Spiribacter sp. 243         0.0001615         0.0000431         0.0000431           26661612         Pseudodesulfovibrio         0.0004334         0.00004365         0.00004365           1894         Kitasatospora a
2219057         Pseudomonas sp. LG1E         0.00003061         0.00002850         0.0000180           1898684         Pseudomonas sp. LPH         0.00004548         0.00002501         0.0000120           2590776         Pseudomonas sp. NIBRBAC00050277         0.00002328         0.00002700         0.00000702           2774459         Pseudomonas sp. LZPS5         0.00007870         0.00007535         0.0000022           200450         Pseudomonas triviali         0.00007870         0.00007555         0.0000085           183795         Pseudomonas mediterrane         0.00006965         0.00004598         0.0000085           29442         Pseudomonas tolaasi         0.00004854         0.00004475         0.0000030           75588         Pseudomonas sedimini         0.00007117         0.00004577         0.0000138           1853130         Pseudomonas salegen         0.00005116         0.00004823         0.00000131           1434072         Halopseudomonas salegen         0.00005960         0.00005114         0.00006511           1666185         Spiribacter sp. 243         0.00011615         0.00004365         0.0000118           26661612         Pseudodesulfovibrio         0.0000434         0.00004365         0.0000018           1894         Kitasatospo
1898684         Pseudomonas sp. LPH         0.00004548         0.00002501         0.00001203           2590776         Pseudomonas sp. NIBRBAC00050277         0.00002328         0.00002083         0.0000190           2774459         Pseudomonas sp. IzPS5         0.00002884         0.00002700         0.00000281           200450         Pseudomonas triviali         0.00007870         0.00007355         0.00000485           183795         Pseudomonas mediterrane         0.00006965         0.00004755         0.0000085           29442         Pseudomonas tolaasi         0.00004854         0.00004475         0.0000035           75588         Pseudomonas libanensi         0.00007117         0.00004577         0.0000138           1691904         Pseudomonas selissiensi         0.00005116         0.00004823         0.0000138           1853130         Pseudomonas salegen         0.0000516         0.00004823         0.0000031           1853130         Pseudomonas salegen         0.00005960         0.00005114         0.0000062           1073999         Cronobacter condimenti         0.00002925         0.00002816         0.00000116           2661612         Pseudodesulfovibrio         0.0000416         0.000016         0.000016           1894         Kitasatospor
2590776         Pseudomonas sp. NIBRBAC00050277         0.00002328         0.00002083         0.00000190           2774459         Pseudomonas sp. IzPS5         0.00002884         0.00002700         0.00000223           200450         Pseudomonas triviali         0.00007870         0.00007535         0.00000487           183795         Pseudomonas mediterrane         0.00004854         0.00004875         0.0000030           29442         Pseudomonas tolaasi         0.00004854         0.0000487         0.000030           75588         Pseudomonas sedimini         0.0000296         0.00001980         0.0000188           1691904         Pseudomonas sedimini         0.00007117         0.00004823         0.0000139           1853130         Pseudomonas silesiensi         0.00005116         0.00004823         0.0000031           1434072         Halopseudomonas salegen         0.00005960         0.00002816         0.0000011621           2661612         Pseudodesulfovibrio         0.0000434         0.00004365         0.0000011621           2661612         Pseudodesulfovibrio         0.0000434         0.00004365         0.000001621           300019         Microbacterium paludicol         0.0000434         0.00009293         0.0000023           256701
2774459         Pseudomonas sp. IzPS5         0.00002884         0.00002700         0.00000222           200450         Pseudomonas triviali         0.00007870         0.00007535         0.00000487           183795         Pseudomonas mediterrane         0.00006965         0.00005698         0.0000085           29442         Pseudomonas libanensi         0.00002296         0.00001980         0.0000018           1691904         Pseudomonas sedimini         0.00007117         0.0000477         0.0000139           1853130         Pseudomonas silesiensi         0.00005116         0.00004823         0.000034           1434072         Halopseudomonas salegen         0.00005960         0.00002816         0.000018           1073999         Cronobacter condimenti         0.00002925         0.00002816         0.0000112           2666185         Spiribacter sp. 243         0.0011615         0.0001621         0.000033           2661612         Pseudodesulfovibrio         0.00007564         0.00007907         0.0000052           300019         Microbacterium paludicol         0.00007564         0.00007907         0.0000023           256701         Glutamicibacter arilaitensi         0.0000716         0.00007167         0.000003           33262         Mycobacteri
200450         Pseudomonas triviali         0.00007870         0.00007535         0.00000485           183795         Pseudomonas mediterrane         0.00006965         0.00005698         0.0000085           29442         Pseudomonas tolaasi         0.0000296         0.00001475         0.000030           75588         Pseudomonas libanensi         0.00002296         0.00001980         0.0000018           1691904         Pseudomonas sedimini         0.0000717         0.00004823         0.000034           1853130         Pseudomonas silesiensi         0.000516         0.00004823         0.000034           1434072         Halopseudomonas salegen         0.0000596         0.00005114         0.0000062           1073999         Cronobacter condimenti         0.00002925         0.00002816         0.0000011           2666185         Spiribacter sp. 243         0.0011615         0.00011621         0.0000039           2661612         Pseudodesulfovibrio         0.0004334         0.00004365         0.000018           1894         Kitasatospora aureofacien         0.00007564         0.00007907         0.0000023           256701         Glutamicibacter arilaitensi         0.00004186         0.0000434         0.00000434           1630135         Dermabacter vagina
183795         Pseudomonas mediterrane         0.00006965         0.00005698         0.0000085           29442         Pseudomonas tolaasi         0.00004854         0.00004475         0.0000300           75588         Pseudomonas libanensi         0.00002296         0.00001980         0.0000180           1691904         Pseudomonas sedimini         0.00007117         0.00004577         0.0000139           1853130         Pseudomonas silesiensi         0.00005116         0.00004823         0.0000034           1434072         Halopseudomonas salegen         0.00005960         0.00005114         0.0000021           266185         Spiribacter sp. 243         0.00011615         0.00001621         0.0000033           2661612         Pseudodesulfovibrio         0.0004334         0.00011621         0.0000033           1894         Kitasatospora aureofacien         0.0004334         0.00004365         0.0000018           30019         Microbacterium paludicol         0.0003330         0.00002934         0.0000029           256701         Glutamicibacter arilaitensi         0.00004168         0.00004316         0.0000031           83262         Mycobacterium timonens         0.00007167         0.0000031           43771         Corynebacterium striatu
29442         Pseudomonas tolaasi         0.00004854         0.00004475         0.00000300           75588         Pseudomonas libanensi         0.00002296         0.00001980         0.00000180           1691904         Pseudomonas sedimini         0.00007117         0.00004577         0.00001393           1853130         Pseudomonas silesiensi         0.00005116         0.00004823         0.0000034           1434072         Halopseudomonas salegen         0.00005960         0.00005114         0.00000623           1073999         Cronobacter condimenti         0.00002925         0.00002816         0.00000112           2666185         Spiribacter sp. 243         0.00011615         0.00011621         0.0000033           2661612         Pseudodesulfovibrio         0.00004334         0.00004365         0.0000183           1894         Kitasatospora aureofacien         0.00007564         0.00007907         0.00000293           256701         Glutamicibacter arilaitensi         0.00004168         0.00004316         0.0000033           1630135         Dermabacter vaginali         0.00007216         0.00007416         0.00000733           83262         Mycobacterium timonens         0.00007216         0.0000733         0.0000033           43771         Coryn
75588         Pseudomonas libanensi         0.00002296         0.00001980         0.00000180           1691904         Pseudomonas sedimini         0.00007117         0.00004577         0.00001393           1853130         Pseudomonas silesiensi         0.00005116         0.0000423         0.00000343           1434072         Halopseudomonas salegen         0.00005960         0.00005114         0.0000062           1073999         Cronobacter condimenti         0.00002925         0.00002816         0.00000112           2666185         Spiribacter sp. 243         0.00011615         0.0001621         0.0000039           2661612         Pseudodesulfovibrio         0.0000434         0.00004365         0.0000018           1894         Kitasatospora aureofacien         0.00007564         0.00007907         0.0000052           300019         Microbacterium paludicol         0.0000333         0.00002934         0.0000029           256701         Glutamicibacter arilaitensi         0.00004168         0.0000416         0.00007167         0.0000031           83262         Mycobacteriodes immunogenu         0.00007216         0.00007167         0.0000033         0.00000434         0.00000493           43771         Corynebacterium triatu         0.00006312         0.00006273
1691904         Pseudomonas sedimini         0.00007117         0.00004577         0.00001393           1853130         Pseudomonas silesiensi         0.00005116         0.00004823         0.00000343           1434072         Halopseudomonas salegen         0.00005960         0.00005114         0.0000062           1073999         Cronobacter condimenti         0.00002925         0.00002816         0.0000039           2666185         Spiribacter sp. 243         0.00011615         0.00011621         0.0000039           2661612         Pseudodesulfovibrio         0.00004334         0.00007907         0.0000052           300019         Microbacterium paludicol         0.00003330         0.00002934         0.00000293           256701         Glutamicibacter arilaitensi         0.00004168         0.00004316         0.0000031           1630135         Dermabacter vaginali         0.00007216         0.00007167         0.0000031           83262         Mycobacterium timonens         0.00007216         0.00007167         0.0000034           43771         Corynebacterium striatu         0.00006312         0.00006273         0.0000024           43770         Corynebacterium striatu         0.00004302         0.00004224         0.0000023           2609299 <td< td=""></td<>
1853130         Pseudomonas silesiensi         0.00005116         0.00004823         0.0000034           1434072         Halopseudomonas salegen         0.00005960         0.00005114         0.0000062           1073999         Cronobacter condimenti         0.00002925         0.00002816         0.0000011           2666185         Spiribacter sp. 243         0.00011615         0.00011621         0.000039           2661612         Pseudodesulfovibrio         0.00004334         0.00004365         0.0000018           1894         Kitasatospora aureofacien         0.00007564         0.00007907         0.0000052           300019         Microbacterium paludicol         0.00003330         0.00002934         0.00000293           256701         Glutamicibacter arilaitensi         0.00004168         0.00004316         0.000031           1630135         Dermabacter vaginali         0.00007216         0.00007167         0.000031           83262         Mycobacteroides immunogenu         0.00011016         0.00010334         0.00000493           43771         Corynebacterium timonens         0.00009727         0.00000273         0.0000024           43770         Corynebacterium striatu         0.00004302         0.00004224         0.0000023           2609299
1434072         Halopseudomonas salegen         0.00005960         0.00005114         0.0000062           1073999         Cronobacter condimenti         0.00002925         0.00002816         0.00000118           2666185         Spiribacter sp. 243         0.00011615         0.00011621         0.0000039           2661612         Pseudodesulfovibrio         0.00004334         0.00004365         0.0000018           1894         Kitasatospora aureofacien         0.00007564         0.00007907         0.00000520           300019         Microbacterium paludicol         0.00003330         0.00002934         0.00000293           256701         Glutamicibacter arilaitensi         0.00004168         0.00004316         0.0000031           1630135         Dermabacter vaginali         0.00007216         0.00007167         0.0000031           83262         Mycobacteroides immunogenu         0.00011016         0.00010334         0.0000049           441500         Corynebacterium timonens         0.00009727         0.00009133         0.00000364           43771         Corynebacterium striatu         0.00006312         0.00006273         0.0000023           2609299         Actinobaculum         0.00004311         0.00003577         0.00000186           2609299 <t< td=""></t<>
1073999         Cronobacter condimenti         0.00002925         0.00002816         0.00000112           2666185         Spiribacter sp. 243         0.00011615         0.00011621         0.0000039           2661612         Pseudodesulfovibrio         0.00004334         0.00004365         0.0000018           1894         Kitasatospora aureofacien         0.00007564         0.00007907         0.00000293           300019         Microbacterium paludicol         0.00003330         0.00002934         0.00000293           256701         Glutamicibacter arilaitensi         0.00004168         0.00004316         0.00000315           1630135         Dermabacter vaginali         0.00007216         0.00007167         0.00000315           83262         Mycobacteroides immunogenu         0.00011016         0.00010334         0.00000493           441500         Corynebacterium timonens         0.00009727         0.00009133         0.00000364           43771         Corynebacterium striatu         0.00006312         0.00006273         0.00000244           43770         Corynebacterium striatu         0.00004302         0.00004224         0.0000023           2609299         Actinobaculum         0.00004557         0.00004722         0.00000472           35760 <t< td=""></t<>
2666185         Spiribacter sp. 243         0.00011615         0.00011621         0.00000399           2661612         Pseudodesulfovibrio         0.00004334         0.00004365         0.00000183           1894         Kitasatospora aureofacien         0.00007564         0.00007907         0.00000520           300019         Microbacterium paludicol         0.00003330         0.00002934         0.00000293           256701         Glutamicibacter arilaitensi         0.00004168         0.00004316         0.0000031           1630135         Dermabacter vaginali         0.00007216         0.00007167         0.0000031           83262         Mycobacterides immunogenu         0.00011016         0.00010334         0.0000049           441500         Corynebacterium timonens         0.00009727         0.00009133         0.00000364           43771         Corynebacterium urealyticu         0.00006312         0.00006273         0.0000024           43770         Corynebacterium striatu         0.00004302         0.00004224         0.0000023           2609299         Actinobaculum         0.00004557         0.00004722         0.0000025           35760         Bifidobacterium choerinu         0.00011989         0.00012381         0.00000473           604330 <t< td=""></t<>
2661612         Pseudodesulfovibrio         0.00004334         0.00004365         0.00000183           1894         Kitasatospora aureofacien         0.00007564         0.00007907         0.00000520           300019         Microbacterium paludicol         0.00003330         0.00002934         0.00000293           256701         Glutamicibacter arilaitensi         0.00004168         0.00004316         0.00000313           1630135         Dermabacter vaginali         0.00007216         0.00007167         0.0000031           83262         Mycobacteroides immunogenu         0.00011016         0.00010334         0.00000493           441500         Corynebacterium timonens         0.00009727         0.00009133         0.00000364           43771         Corynebacterium striatu         0.00004302         0.00006273         0.0000023           203263         Corynebacterium aquila         0.00004302         0.00004224         0.0000023           2609299         Actinobaculum         0.00004557         0.00004722         0.0000025           35760         Bifidobacterium choerinu         0.00011989         0.00012381         0.00000473           1335613         Gordonibacter urolithinfacien         0.00007758         0.00007744         0.00000474           604330
1894         Kitasatospora aureofacien         0.00007564         0.00007907         0.00000520           300019         Microbacterium paludicol         0.00003330         0.00002934         0.00000293           256701         Glutamicibacter arilaitensi         0.00004168         0.00004316         0.00000313           1630135         Dermabacter vaginali         0.00007216         0.00007167         0.0000031           83262         Mycobacteroides immunogenu         0.00011016         0.00010334         0.00000493           441500         Corynebacterium timonens         0.00009727         0.00009133         0.00000364           43771         Corynebacterium striatu         0.00006273         0.0000024           43770         Corynebacterium striatu         0.00004302         0.00004224         0.0000023           2609299         Actinobaculum         0.00003411         0.00003577         0.0000018           2609299         Actinobaculum         0.00011989         0.00012381         0.0000047           1335613         Gordonibacter urolithinfacien         0.00009591         0.00009744         0.0000047           604330         Parafannyhessea umbonat         0.0000758         0.00007810         0.0000023           365617         Paenibacillus sabina
300019         Microbacterium paludicol         0.00003330         0.00002934         0.00000293           256701         Glutamicibacter arilaitensi         0.00004168         0.00004316         0.00000313           1630135         Dermabacter vaginali         0.00007216         0.00007167         0.00000313           83262         Mycobacteroides immunogenu         0.00011016         0.00010334         0.00000493           441500         Corynebacterium timonens         0.00009727         0.00009133         0.00000364           43771         Corynebacterium urealyticu         0.00006312         0.00006273         0.0000024           43770         Corynebacterium striatu         0.00004302         0.00004224         0.0000023           2609299         Actinobaculum         0.00004557         0.00004722         0.0000025           35760         Bifidobacterium choerinu         0.00011989         0.00012381         0.00000473           1335613         Gordonibacter urolithinfacien         0.00009591         0.00009744         0.00000474           604330         Parafannyhessea umbonat         0.00007758         0.00007810         0.0000023           365617         Paenibacillus sabina         0.000044839         0.000004828         0.0000024           2610894<
256701         Glutamicibacter arilaitensi         0.00004168         0.00004316         0.00000318           1630135         Dermabacter vaginali         0.00007216         0.00007167         0.00000318           83262         Mycobacteroides immunogenu         0.00011016         0.00010334         0.00000493           441500         Corynebacterium timonens         0.00009727         0.00009133         0.00000364           43771         Corynebacterium urealyticu         0.00006312         0.00006273         0.00000243           43770         Corynebacterium striatu         0.00004302         0.00004224         0.0000023           2609299         Actinobaculum         0.00004557         0.00004722         0.0000025           35760         Bifidobacterium choerinu         0.00011989         0.00012381         0.0000047           1335613         Gordonibacter urolithinfacien         0.00009591         0.00009744         0.0000018           604330         Parafannyhessea umbonat         0.00011704         0.00011906         0.00000404           1871022         Parolsenella massiliensi         0.00004839         0.00004879         0.00000176           2610894         Flintibacter         0.00004748         0.00004828         0.00000024
1630135         Dermabacter vaginali         0.00007216         0.00007167         0.00000313           83262         Mycobacteroides immunogenu         0.00011016         0.00010334         0.00000493           441500         Corynebacterium timonens         0.00009727         0.00009133         0.00000364           43771         Corynebacterium urealyticu         0.00006312         0.00006273         0.00000245           43770         Corynebacterium striatu         0.00004302         0.00004224         0.0000023           203263         Corynebacterium aquila         0.00003411         0.00003577         0.0000018           2609299         Actinobaculum         0.00004557         0.00004722         0.0000025           35760         Bifidobacterium choerinu         0.00011989         0.00012381         0.00000473           1335613         Gordonibacter urolithinfacien         0.00009591         0.00009744         0.00000474           604330         Parafannyhessea umbonat         0.00011704         0.00011906         0.00000404           1871022         Parolsenella massiliensi         0.00004839         0.00004879         0.00000176           2610894         Flintibacter         0.00004748         0.00004828         0.0000024
83262       Mycobacteroides immunogenu       0.00011016       0.00010334       0.00000493         441500       Corynebacterium timonens       0.00009727       0.00009133       0.00000364         43771       Corynebacterium urealyticu       0.00006312       0.00006273       0.0000024         43770       Corynebacterium striatu       0.00004302       0.00004224       0.0000023         203263       Corynebacterium aquila       0.00003411       0.00003577       0.0000018         2609299       Actinobaculum       0.00004557       0.00004722       0.0000025         35760       Bifidobacterium choerinu       0.00011989       0.00012381       0.0000047         1335613       Gordonibacter urolithinfacien       0.00009591       0.00009744       0.0000018         604330       Parafannyhessea umbonat       0.00011704       0.00011906       0.00000404         1871022       Parolsenella massiliensi       0.00007758       0.00007810       0.0000023         365617       Paenibacillus sabina       0.00004438       0.00004828       0.0000024         2610894       Flintibacter       0.00004748       0.00004828       0.0000024
441500       Corynebacterium timonens       0.00009727       0.00009133       0.00000364         43771       Corynebacterium urealyticu       0.00006312       0.00006273       0.00000245         43770       Corynebacterium striatu       0.00004302       0.00004224       0.0000023         203263       Corynebacterium aquila       0.00003411       0.00003577       0.0000018         2609299       Actinobaculum       0.00004557       0.00004722       0.0000025         35760       Bifidobacterium choerinu       0.00011989       0.00012381       0.00000473         1335613       Gordonibacter urolithinfacien       0.00009591       0.00009744       0.0000018         604330       Parafannyhessea umbonat       0.00011704       0.00011906       0.0000040         1871022       Parolsenella massiliensi       0.00007758       0.00007810       0.0000023         365617       Paenibacillus sabina       0.00004438       0.00004828       0.0000024         2610894       Flintibacter       0.00004748       0.00004828       0.0000024
43771       Corynebacterium urealyticu       0.00006312       0.00006273       0.00000248         43770       Corynebacterium striatu       0.00004302       0.00004224       0.0000023         203263       Corynebacterium aquila       0.00003411       0.00003577       0.00000180         2609299       Actinobaculum       0.00004557       0.00004722       0.0000025         35760       Bifidobacterium choerinu       0.00011989       0.00012381       0.00000473         1335613       Gordonibacter urolithinfacien       0.00009591       0.00009744       0.00000183         604330       Parafannyhessea umbonat       0.00011704       0.00011906       0.00000404         1871022       Parolsenella massiliensi       0.00007758       0.00007810       0.0000023         365617       Paenibacillus sabina       0.000044839       0.00004828       0.0000024         2610894       Flintibacter       0.00004748       0.00004828       0.0000024
43770       Corynebacterium striatu       0.00004302       0.00004224       0.0000023         203263       Corynebacterium aquila       0.00003411       0.00003577       0.0000018         2609299       Actinobaculum       0.00004557       0.00004722       0.0000025         35760       Bifidobacterium choerinu       0.00011989       0.00012381       0.0000047         1335613       Gordonibacter urolithinfacien       0.00009591       0.00009744       0.0000018         604330       Parafannyhessea umbonat       0.00011704       0.00011906       0.00000404         1871022       Parolsenella massiliensi       0.00007758       0.00007810       0.0000023         365617       Paenibacillus sabina       0.00004839       0.00004828       0.0000024         2610894       Flintibacter       0.00004748       0.00004828       0.0000024
203263         Corynebacterium aquila         0.00003411         0.00003577         0.00000180           2609299         Actinobaculum         0.00004557         0.00004722         0.00000257           35760         Bifidobacterium choerinu         0.00011989         0.00012381         0.00000479           1335613         Gordonibacter urolithinfacien         0.00009591         0.00009744         0.0000018           604330         Parafannyhessea umbonat         0.00011704         0.00011906         0.00000404           1871022         Parolsenella massiliensi         0.00007758         0.00007810         0.0000023           365617         Paenibacillus sabina         0.00004839         0.00004879         0.00000176           2610894         Flintibacter         0.00004748         0.00004828         0.00000247
2609299       Actinobaculum       0.00004557       0.00004722       0.0000025         35760       Bifidobacterium choerinu       0.00011989       0.00012381       0.00000479         1335613       Gordonibacter urolithinfacien       0.00009591       0.00009744       0.00000183         604330       Parafannyhessea umbonat       0.00011704       0.00011906       0.00000404         1871022       Parolsenella massiliensi       0.00007758       0.00007810       0.0000023         365617       Paenibacillus sabina       0.00004839       0.00004879       0.00000176         2610894       Flintibacter       0.00004748       0.00004828       0.0000024
35760       Bifidobacterium choerinu       0.00011989       0.00012381       0.00000473         1335613       Gordonibacter urolithinfacien       0.00009591       0.00009744       0.00000183         604330       Parafannyhessea umbonat       0.00011704       0.00011906       0.00000404         1871022       Parolsenella massiliensi       0.00007758       0.00007810       0.00000233         365617       Paenibacillus sabina       0.00004839       0.00004879       0.00000176         2610894       Flintibacter       0.00004748       0.00004828       0.00000247
1335613         Gordonibacter urolithinfacien         0.00009591         0.00009744         0.00000183           604330         Parafannyhessea umbonat         0.00011704         0.00011906         0.00000404           1871022         Parolsenella massiliensi         0.00007758         0.00007810         0.0000023           365617         Paenibacillus sabina         0.00004839         0.00004879         0.00000176           2610894         Flintibacter         0.00004748         0.00004828         0.0000024
604330         Parafannyhessea umbonat         0.00011704         0.00011906         0.00000404           1871022         Parolsenella massiliensi         0.00007758         0.00007810         0.0000023           365617         Paenibacillus sabina         0.00004839         0.00004879         0.00000176           2610894         Flintibacter         0.00004748         0.00004828         0.0000024
1871022       Parolsenella massiliensi       0.00007758       0.00007810       0.00000239         365617       Paenibacillus sabina       0.00004839       0.00004879       0.00000176         2610894       Flintibacter       0.00004748       0.00004828       0.0000024
365617         Paenibacillus sabina         0.00004839         0.00004879         0.00000176           2610894         Flintibacter         0.00004748         0.00004828         0.00000247
2610894 Flintibacter 0.00004748 0.00004828 0.0000024
2614128 Clostridium 0.00005019 0.00004795 0.0000024
42837 Ammonife 0.00007226 0.00007016 0.00000298
92942 Nostoc lincki 0.00002378 0.00001464 0.00000550
2618749 Scytonema 0.00008482 0.00008961 0.00000847
980427 Deinococcus wulumuqiensi 0.00014906 0.00014494 0.00000394
1299 Deinococcus radioduran 0.00012662 0.00012342 0.00000325
310783 Deinococcus desert 0.00009394 0.00009060 0.00000429
454171 Chthonomonas calidirose 0.00007864 0.00007652 0.00000248
290174 Aquimarin 0.00001626 0.00001591 0.00000118
869211 Spirochaeta thermophila 0.00002979 0.00002963 0.00000142
62320 Haloterrigena turkmenic 0.00008121 0.00008087 0.00000365
370324 Natrinema longu 0.00005274 0.00005464 0.00000214
13769 Natrialba magadi 0.00007369 0.00007005 0.00000318
1175445 Methanocella arvoryza 0.00003724 0.00003540 0.00000206
1826872 Candidatus Nitrosocosmicus hydrocol 0.00007780 0.00005223 0.00001720

	OTU	MeanRA	MedianRA	SE
419610	Methylorubrum extorquens	0.00006533	0.00005353	0.00001571
32009	Burkholderia gladioli	0.00004414	0.00004435	0.00000339
640081	Azospira oryzae	0.00006336	0.00005796	0.00000936
2706126	Pseudomonas sp. OIL-	0.00005744	0.00005843	0.00000328
2726989	Pseudomonas sp. gcc2	0.00005071	0.00004922	0.00000329
76760	Pseudomonas rhodesia	0.00004632	0.00004114	0.00000576
553151	Halopseudomonas pelagi	0.00005750	0.00006352	0.00000567
219572	Pseudomonas antarctic	0.00004038	0.00003570	0.00000376
163011	Pseudomonas lin	0.00004752	0.00003619	0.00001561
64187	Xanthomonas oryzae	0.00004090	0.00003884	0.00000303
349967	Yersinia mollaretii	0.00000693	0.00000691	0.00000067
213554	Halomonas campaniensi	0.00000240	0.00000200	0.00000086
28084	Legionella cherri	0.00000718	0.00000570	0.00000212
92644	Streptomyces malaysiensi	0.00003218	0.00003575	0.00000554
67260	Streptomyces cinereorube	0.00002301	0.00002338	0.00000287
556325	Neomicrococcus aestuari	0.00003666	0.00003595	0.00000502
1520670	[Mycobacterium] stephanolepidi	0.00004888	0.00004736	0.00000707
33035	Blautia product	0.00001165	0.00001107	0.00000076
2214	Methanosarcina acetivoran	0.00000506	0.00000397	0.00000123
1903276	Candidatus Nitrosotalea okcheonensi	0.00001042	0.00000944	0.00000316
1410606	Candidatus Nitrosopelagicus brevi	0.00000579	0.00000431	0.00000191
2271	Thermoproteus tena	0.00000577	0.00000552	0.00000157

Table 2: Keystone OTUs of

	OTU	MeanRA	MedianRA	SE
1458461	Candidatus Phaeomarinobacter ectocarp	0.00010969	0.00011098	0.00000502
664962	Azospirillum sp. TSH5	0.00010909 $0.00025600$	0.00011098 $0.00026473$	0.00000302 $0.00000964$
265959	Komagataeibacter saccharivoran	0.00025000 $0.00008108$	0.00020473 $0.00008263$	0.00000904 $0.00000301$
540747	Roseovarius indicu	0.00028936	0.00008203	0.00000501 $0.00000572$
311180	Alloyangia pacific	0.00028930 $0.00027703$	0.00028940 $0.00027666$	0.00000572 $0.00000503$
101571	Burkholderia ubonensi			
101371 $179879$	Burkholderia anthin	0.00030111 $0.00020302$	0.00029961 $0.00019456$	0.00000970 $0.00000805$
1637853	Burkholderia sp. NRF60-BP	0.00007520	0.00007616	0.00000330
28450	Burkholderia pseudomalle	0.00028979	0.00027932	0.00001318
2735433	Paraburkholderia sp. PGU1	0.00014528	0.00014581	0.00000776
1417228	Paraburkholderia phytofirmans	0.00012977	0.00012522	0.00000523
134537	Paraburkholderia fungoru	0.00023287	0.00022773	0.00001276
1761016	Paraburkholderia caffeinilytic	0.00016107	0.00016257	0.00000629
656178	Pandoraea vervact	0.00017448	0.00017640	0.00000579
2320867	Pseudomonas caverna	0.00024406	0.00019991	0.00003192
1931241	Halopseudomonas phragmiti	0.00007181	0.00007016	0.00000402
364197	Pseudomonas pohangensi	0.00007540	0.00006487	0.00000571
46677	Pseudomonas agaric	0.00005228	0.00004649	0.00000390
549	Pantoea agglomeran	0.00004466	0.00004297	0.00000220
2819280	Acidihalobacter yilgarnensi	0.00011547	0.00011858	0.00000483
550540	Ferrimonas balearica	0.00006810	0.00006783	0.00000238
145458	Rathayibacter toxicu	0.00004330	0.00004355	0.00000240
2649579	Kocuria	0.00018552	0.00018052	0.00000885
85085	Pseudarthrobacter chlorophenolicu	0.00020598	0.00014120	0.00003691
121292	Pseudarthrobacter sulfonivoran	0.00009350	0.00007732	0.00001262
2593973	Ornithinimicrobium pratens	0.00022492	0.00022325	0.00000936
126673	Mycolicibacterium doricu	0.00017894	0.00018047	0.00000638
1661	Trueperella pyogene	0.00005859	0.00006066	0.00000199
49283	Paenibacillus thiaminolyticu	0.00009204	0.00009356	0.00000363
186192	Marinithermus hydrothermali	0.00021079	0.00020931	0.00000722
2509675	Ktedonosporobacter rubrisol	0.00012649	0.00011891	0.00001055
1005039	Fimbriimonas ginsengisol	0.00029796	0.00029765	0.00001108
125	Pirellula staley	0.00027144	0.00023236	0.00001909
128	Isosphaera pallid	0.00026970	0.00026452	0.00001368
2703788	Edaphobacter sp. 12200R-10	0.00028184	0.00021699	0.00007508
2643768	Halorussus	0.00011966	0.00012219	0.00000403
1353260	Candidatus Nitrosocosmicus oleophilu	0.00009234	0.00008950	0.00000769

Table 3: Keystone OTUs of  $Solanum\ lycopersicum$  with mean and median relative abundance and standard error.