

1 **Supporting Information**

2 **The response of sugar beet rhizosphere micro-ecological environment to**
3 **continuous cropping**

4 Rufeì Cui^{a,c#}, Gui Geng^{a,b,c#}, Gang Wang^{a,b,c}, Piergiorgio Stevanato^d, Yinzhuan Dong^{a,b,c}, Tai Li^{a,c},
5 Lihua Yu^a, Yuguang Wang^{a,b,c*}

6 ^a National Sugar Crop Improvement Centre, College of Advanced Agriculture and Ecological
7 Environment, Heilongjiang University, Harbin, 150080 China

8 ^b Heilongjiang Provincial Key Laboratory of Ecological Restoration and Resource Utilization for Cold
9 Region, College of Life Sciences, Heilongjiang University, Harbin 150080 China

10 ^c Engineering Research Center of Agricultural Microbiology Technology, Ministry of Education,
11 Heilongjiang University, Harbin 150080 China

12 ^d DAFNAE, Dipartimento di Agronomia, Animali, Alimenti, Risorse Naturali e Ambiente, Università
13 degli Studi di Padova, Padova, Italy

14 [#]These authors contributed equally to this work.

15 ^{*}Corresponding author. E-mail addresses: wangyuguang@hlju.edu.cn (Yuguang Wang)

16

17

Table S1 Bacterial richness and a-diversity indexes for different groups

Group	Chao 1	Richness	Shannon	Simpson
Sc	5016.3992 ± 190.7999a	4183.8 ± 250.7607a	7.0031 ± 0.1057a	0.0036 ± 0.0007bc
Sn	5120.2862 ± 186.7452a	4251.6 ± 273.6308a	7.2991 ± 0.0584a	0.0019 ± 0.0002c
Rc	4387.9443 ± 311.3261b	3413.6 ± 294.0739b	6.0271 ± 0.2009b	0.0159 ± 0.0031bc
Rn	4613.8911 ± 224.5809b	3521.2 ± 288.9466b	6.1800 ± 0.2110b	0.0156 ± 0.0057bc
Bc	2399.8260 ± 257.1390d	1713.8 ± 215.0175c	5.1259 ± 0.1626c	0.0245 ± 0.0081b
Bn	2834.2904 ± 133.5383c	1988.2 ± 95.7108c	4.6879 ± 0.3686d	0.0645 ± 0.0356a

18

19

20

Values are means ± standard deviation (n = 5), followed by the same letter for a given factor which are not significantly different (P < 0.05; Wilcoxon test).

21

Table S2 Fungal richness and a-diversity indexes for different groups

Group	Chao 1	Richness	Shannon	Simpson
Sc	616.6630 ± 33.1386b	527.0 ± 35.0086b	3.5451 ± 0.0734ab	0.1199 ± 0.0236b
Sn	781.8113 ± 103.1900a	687.4 ± 117.0514a	3.7695 ± 1.0732a	0.1551 ± 0.1771b
Rc	554.1487 ± 22.9918bc	482.8 ± 30.3934bc	3.1841 ± 0.1924ab	0.1611 ± 0.0212b
Rn	533.0580 ± 122.8328bc	402.4 ± 113.1611cd	1.9029 ± 0.8146c	0.4454 ± 0.1766a
Bc	397.2700 ± 25.7003cd	346.4 ± 26.4242d	2.8156 ± 0.1128b	0.1662 ± 0.0382b
Bn	301.3413 ± 63.2291d	234.2 ± 48.8688e	1.5234 ± 0.4174c	0.5115 ± 0.1253a

22

Values are means ± standard deviation (n = 5), followed by the same letter for a given factor which are not significantly different (P < 0.05; Wilcoxon test).

23

24

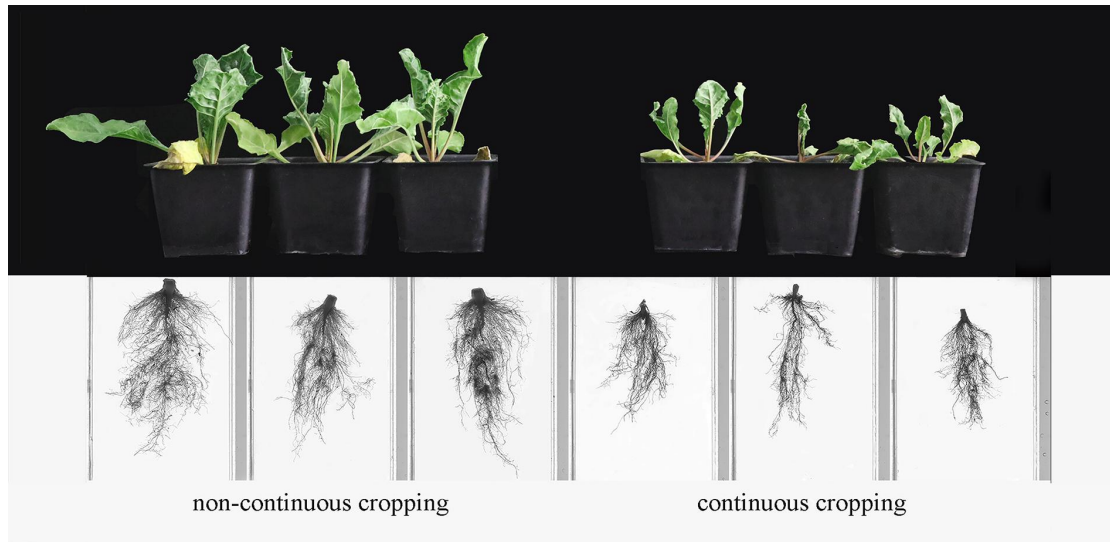
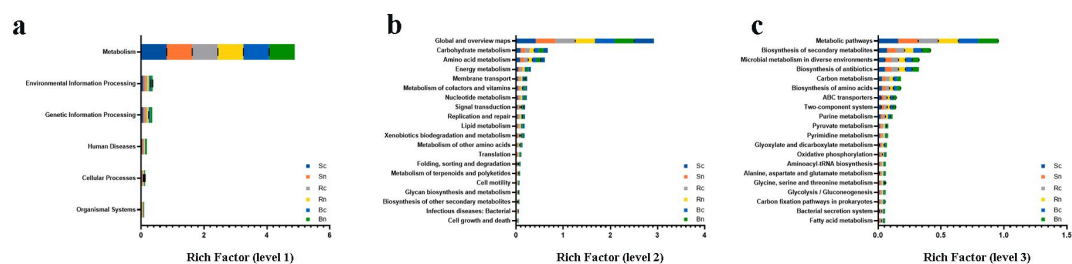


Fig S1 Morphological change in sugar beet under continuous cropping and non-continuous cropping treatment.



29

30 **Fig. S2** Prediction of metabolic pathways by KEGG level 1 (a), level 2 (b), and level
 31 3 (c). Sc, continuous cropping bulk soil; Sn, non-continuous cropping bulk soil; Rc,
 32 continuous cropping rhizosphere soil; Rn, non-continuous cropping rhizosphere soil;
 33 Bc, continuous cropping sugar beetroot; Bn, non-continuous cropping sugar beetroot.