Supplementary Materials

Metabolomic Profiles of the Creeping Wood Sorrel *Oxalis corniculata* in Radioactively Contaminated Fields in Fukushima: Dose-Dependent Changes in Key Metabolites

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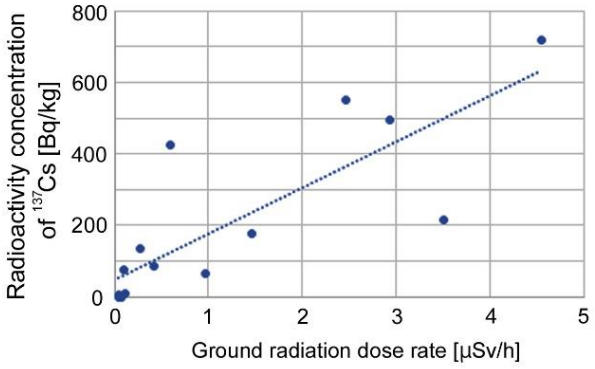
1. Supplementary Results and Discussion (including Supplemntary Figure S1)

1.1. Correlation between Ground Dose and Radioactivity Concentration

We examined a relationship between ground radiation dose rate and radioactivity concentration of ^{137}Cs in leaf samples. They were highly correlated (Pearson correlation coefficient $r = 0.81$, $p = 0.0004$). Similar results have been obtained in the previous studies: $r = 0.63$, $p < 0.001$ [24] and $\rho = 0.80$, $p = 0.33$ [27]. These correlation coefficients were not very close to 1, suggesting that absorption and transportation of ^{137}Cs from soil to leaves may depend on several factors such as soil composition, environmental temperature, and genetic background. Additionally, human activities such as decontamination process may also influence the correlation between the two. Considering that leaves of this plant are positioned closely to the ground, the plant is likely subjected to both internal and external exposures. Ground radiation (x-axis) includes entire radiation doses from various radionuclides in addition to ^{137}Cs in the field environment, but radioactivity concentration (y-axis) includes only ^{137}Cs. Therefore, we decided to focus primarily on the ground radiation dose rate for subsequent analyses.



Supplementary Figure S1. Scatter plot between ground radiation dose rate [μSv/h] and radioactivity concentration of ^{137}Cs [Bq/kg] in the plant leaf samples. A linear fit model was drawn. These two factors were correlated ($r = 0.81$, $p = 0.0004$).

2. Supplementary Table

Supplementary Table S1. 93 ANOVA-positive peaks and their raw *p*-values and FDR values (FDR < 0.05)

No.	*p*	FDR	No.	*p*	FDR	No.	*p*	FDR	No.	*p*	FDR
5658	7.8E-9	6.2E-5	**3033**	2.9E-5	0.0090	**2384**	0.00016	0.026	**4822**	0.00045	0.049
6246	4.2E-8	0.00017	**8775**	2.9E-5	0.0090	**3432**	0.00017	0.027	**147**	0.00046	0.049
5741	1.6E-6	0.0034	**6614**	3.0E-5	0.0090	**9530**	0.00017	0.027	**8378**	0.00047	0.049
8903	1.8E-6	0.0034	**4472**	3.8E-5	0.011	**4762**	0.00018	0.027	**5009**	0.00048	0.049
4969	2.1E-6	0.0034	**4800**	4.8E-5	0.013	**8508**	0.00018	0.027	**885**	0.00049	0.049
5636	2.6E-6	0.0034	**6624**	5.2E-5	0.014	**3542**	0.00023	0.033	**7563**	0.00050	0.049
4925	3.3E-6	0.0036	**9396**	5.6E-5	0.014	**3171**	0.00024	0.035	**5348**	0.00050	0.049
7481	4.0E-6	0.0036	**9368**	6.2E-5	0.015	**8451**	0.00025	0.036	**4347**	0.00051	0.049
7234	4.2E-6	0.0036	**5402**	6.4E-5	0.015	**474**	0.00026	0.037	**6821**	0.00052	0.049
4887	4.6E-6	0.0036	**4261**	6.5E-5	0.015	**4345**	0.00027	0.037	**5353**	0.00052	0.049
9321	7.5E-6	0.0055	**4039**	7.1E-5	0.016	**3172**	0.00028	0.038	**3836**	0.00052	0.049
832	9.3E-6	0.0056	**4388**	7.7E-5	0.017	**9211**	0.00029	0.039	**7435**	0.00054	0.049
7156	9.4E-6	0.0057	**8925**	7.8E-5	0.017	**8804**	0.00030	0.039	**7256**	0.00054	0.049
3180	1.0E-5	0.0058	**2049**	8.2E-5	0.017	**4702**	0.00031	0.040	**9372**	0.00054	0.049
7764	1.1E-5	0.0059	**4943**	9.4E-5	0.019	**2**	0.00031	0.040	**178**	0.00055	0.049
6296	1.7E-5	0.0081	**5464**	9.4E-5	0.019	**9338**	0.00034	0.042	**3038**	0.00055	0.049
3152	1.7E-5	0.0081	**1856**	0.00010	0.019	**7781**	0.00034	0.042	**750**	0.00055	0.049
1197	2.2E-5	0.0090	**609**	0.00011	0.021	**7968**	0.00035	0.042	**8800**	0.00056	0.049
3073	2.4E-5	0.0090	**2963**	0.00011	0.021	**4578**	0.00037	0.044	**8933**	0.00057	0.049
7155	2.4E-5	0.0090	**1109**	0.00012	0.021	**3204**	0.00038	0.045	**7719**	0.00057	0.049
4880	2.6E-5	0.0090	**9322**	0.00012	0.021	**9091**	0.00040	0.046	**2562**	0.00057	0.049
9023	2.7E-5	0.0090	**4745**	0.00013	0.022	**9335**	0.00041	0.047			
3404	2.9E-5	0.0090	**5617**	0.00013	0.023	**6930**	0.00043	0.047			
6347	2.9E-5	0.0090	**4912**	0.00014	0.024	**8935**	0.00043	0.047			

Note: Singularly annotated upregulated and downregulated peaks are shown in red and blue, respectively.