Supplementary Information

Growth Responses of *Holcus lanatus* L. (Velvet Grass) in Soils Contaminated with Cesium or Strontium

Bayezid M. Khan [1,2], M. Ferdous Alam [3,4], Zinnat A. Begum [1], Ismail M. M. Rahman [1,*]

[1]*Institute of Environmental Radioactivity, Fukushima University, 1 Kanayagawa, Fukushima City 960-1296, Fukushima, Japan*

[2]*Institute of Forestry and Environmental Sciences, Faculty of Science, University of Chittagong, Chattogram 4331, Bangladesh*

[3]*Graduate School of Symbiotic Systems Science and Technology, Fukushima University, 1 Kanayagawa, Fukushima City 960-1296, Fukushima, Japan*

[4]*Institute of Nuclear Science and Technology, Atomic Energy Research Establishment, Ganakbari, Savar, Dhaka 1344, Bangladesh*

*Author for correspondence.

E-mail: immrahman@ipc.fukushima-u.ac.jp

Supplementary Information

Table S1. GLM output demonstrating the effects of various Cs-concentrations on the growth parameters of *Holcus lanatus*

Source	Parameter	df	*F*	*P*
Treatment	Root length	5	17.03	< 0.001
	Root dry	5	26.72	< 0.001
	Shoot dry	5	14.10	< 0.001
	Shoot-root ratio	5	3.11	0.008

Supplementary Information

Table S2. GLM output demonstrating the effects of various Sr-concentrations on the growth parameters of *Holcus lanatus*

Source	Parameter	df	*F*	*P*
Treatment	Root length	5	8.55	0.001
	Root dry	5	15.47	< 0.001
	Shoot dry	5	10.636	< 0.001
	Shoot-root ratio	5	4.81	0.012

Supplementary Information

Table S3. GLM output demonstrating the effects of K-application in Cs-amended soil on the *Holcus lanatus* growth and elemental uptake

Source	Parameter	df	*F*	*P*
Treatment	Shoot dry	2	3.37	0.104
	Al	2	3.016	0.124
	As	2	5.82	0.039
	Ca	2	9.76	0.013
	Co	2	4.43	0.066
	Fe	2	0.534	0.612
	K	2	3.92	0.082
	Mg	2	13.23	0.006
	Mn	2	63.82	< 0.001
	Mo	2	18.3	0.003
	Na	2	0.684	0.54
	Ni	2	7.62	0.022
	P	2	8.68	0.017
	Sr	2	4.31	0.069
	Zn	2	36.92	< 0.001
	Cs	2	289.12	< 0.001
	Cs transfer factor	2	13.78	0.006

Supplementary Information

Table S4. GLM output demonstrating the effects of Ca-application in Sr-amended soil on the *Holcus lanatus* growth and elemental uptake

Source	Parameter	df	*F*	*P*
Treatment	Shoot dry	2	31.91	0.001
	Al	2	21.18	0.002
	As	2	0.47	0.46
	Ca	2	9.04	0.015
	Co	2	0.667	0.548
	Fe	2	11.31	0.009
	K	2	0.67	0.548
	Mg	2	5.5	0.044
	Mn	2	28.08	0.001
	Mo	2	20.53	0.002
	Na	2	20.42	0.002
	Ni	2	9.2	0.015
	P	2	8.22	0.019
	Zn	2	84.22	< 0.001
	Sr	2	46.54	< 0.001
	Sr transfer factor	2	38.23	< 0.001

Supplementary Information

Figures

Figure S1: Growth characteristics of *H. lanatus* at different Cs-concentrations. From left to right: 0 (Control), 1, 2, 4, and 8 mg Cs L^{-1}.

Supplementary Information

Figure S2: *Holcus lanatus* seedling growth in soil: Control (right), Sr (middle), and Sr + Ca (left).