

Supplementary Materials

Research Progress of Soil and Vegetation Restoration Technology in Open-Pit Coal Mine: A Review

Daolong Xu ¹, Xiufen Li ², Jian Chen ¹ and Jianghua Li ^{1,*}

¹ National Engineering Laboratory for Cereal Fermentation Technology, Jiangnan University, 1800 Lihu Rd, Wuxi 214122, China

² School of Environment and Civil Engineering, Jiangnan University, Wuxi 214122, China

* Correspondence: lijiahua@jiangnan.edu.cn; Tel./Fax: +0510-85329031

Supporting Information Includes:

2 Table

1 Figure

Table Captions:

Table S1 Microbial characteristics of the coal mine spoil [30].

Table S2 Differences in plant and arbuscular mycorrhizal fungal (AMF) variables in response to the addition of seeds or soil inoculum and their interaction. Degrees of freedom (df), F-statistics and p values are reported. Significance at 0.001***, 0.01** and 0.05* levels shown. Ns- not significant. The results of generalized linear models with the addition of seeds and soil inoculum as fixed effects are shown [97].

Figure Captions:

Figure S1 Requirements for plant growth experiments and determination of optimal scenarios [58].

Table S1 Microbial characteristics of the coal mine spoil [30].

Microbial groups (CFU/g)	Barren (control)	After 1 year	After 3 year	After 3 year
Bacteria	1.8×10^1	4.3×10^4	6.6×10^6	9.8×10^7
Fungi	6.6×10^1	3.2×10^4	4.4×10^5	7.5×10^6
Actinomycetes	Nil	8.4×10^4	8.9×10^5	6.5×10^5
Rhizobium	Nil	5.1×10^4	7.6×10^6	7.2×10^6
Azotobacter	Nil	3.6×10^5	8.6×10^6	8.7×10^6

Table S2 Differences in plant and arbuscular mycorrhizal fungal (AMF) variables in response to the addition of seeds or soil inoculum and their interaction. Degrees of freedom (df), F-statistics and p values are reported. Significance at 0.001***, 0.01** and 0.05* levels shown. Ns- not significant. The results of generalized linear models with the addition of seeds and soil inoculum as fixed effects are shown [97].

Factor	Response variable	1st year			2nd year		
		df	F	p	df	F	p
+ <i>Inoculum</i>	Plant richness	1	0.975	ns	1	23.367	***
	Plant cover	1	0.877	ns	1	7.206	*
	Plant extrapolated	1	1.917	ns	1	8.818	*
	asymptotic Shannon						
	entropy						
	AMF richness	1	4.002	ns	1	12.858	***
	AMF reads per sample	1	0.0277	ns	1	0.011	ns
	16:1ω5 NLFA	1	2.887	ns	1	44.643	***
	concentration						
	AMF extrapolated	1	3.217	ns	1	16.776	*
	asymptotic Shannon						
	entropy						
<i>Seeds*Inoculum</i> interaction	Plant community	1	0.905	ns	1	5.946	*
	mycorrhization						
	Plant richness	1	1.8429	ns	1	0.935	ns
	Plant richness	1	0.6156	ns	1	2.387	ns
	Plant extrapolated	1	2.57	ns	1	3.625	ns
	asymptotic Shannon						
	entropy						
	AMF richness	1	7.3716	**	1	1.497	ns
	AMF reads per sample	1	0.7424	ns	1	2.569	ns
	16:1ω5 NLFA	1	1.312	ns	1	6.2107	*
	concentration						

AMF extrapolated	1	7.286	**	1	0.371	ns
asymptotic Shannon						
entropy						
Plant community	1	0.16	ns	1	1.004	ns
mycorrhization						

Notes: Degrees of freedom (df), F-statistics and p values are reported. Significance at 0.001***,

0.01** and 0.05* levels shown. Ns- not significant.

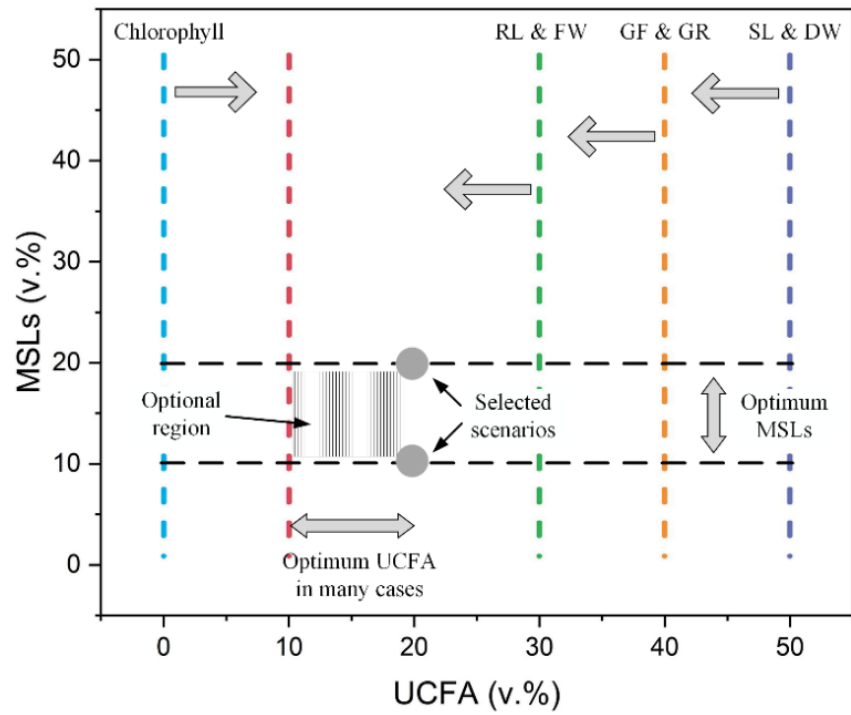


Figure S1 Requirements for plant growth experiments and determination of optimal scenarios [58].