

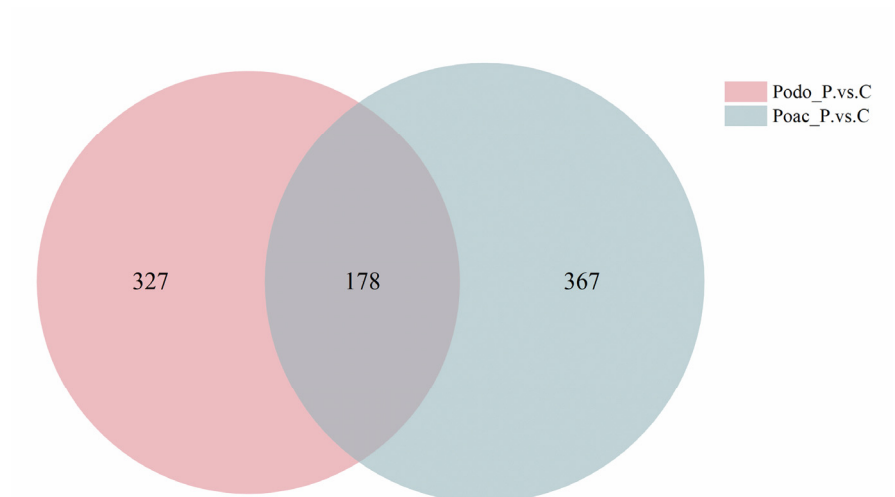


Figure S1. Inoculation of two dark septate endophytes (DSE) significantly altered metabolite Venn diagram.

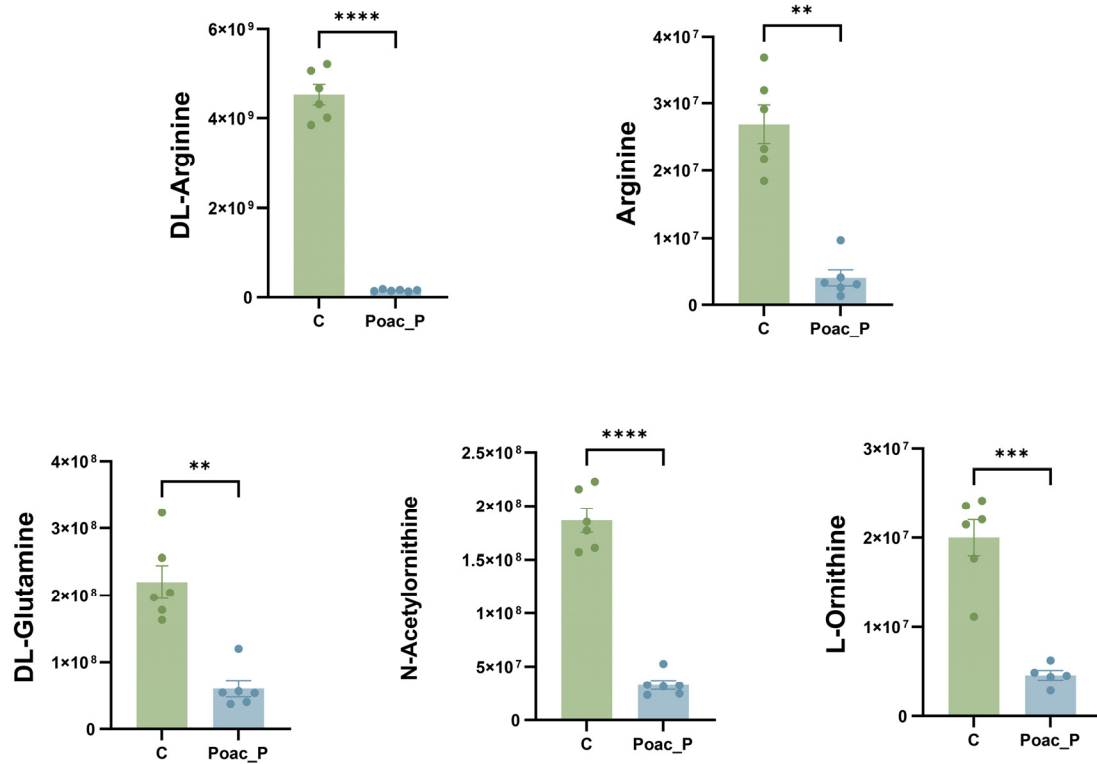


Figure S2. Effect of *Poac* inoculation on key intermediates of the α -ketoglutarate metabolic pathway in plants. Use t-test and Mann Whitney test statistical analysis methods. **= $P<0.01$; ***= $P<0.0005$; ****= $P<0.0001$.

Table S1. Differences in metabolites between the two dark septate endophytes (DSE)

treatments

Compound type	<i>Poac</i> vs. C (<i>Poaceascoma</i> sp.)	<i>Podo</i> vs. C (<i>Podospora</i> sp.)	Jointly owned compounds
Alkaloids and derivatives	2	7	2
Benzenoids	38	14	14
Lignans, neolignans and related compounds	2	3	2
Lipids and lipid-like molecules	33	61	36
Nucleosides, nucleotides, and analogues	12	17	9
Organic acids and derivatives	37	48	22
Organic nitrogen compounds	1	2	2
Organic oxygen compounds	18	23	10
Organoheterocyclic compounds	39	34	17
Organosulfur compounds	0	1	0
Phenylpropanoids and polyketides	69	33	13
Hydrocarbons	0	0	1
Others	115	84	50

Table S2. Total secondary metabolites across treatments and differential regulatory relationships between treatment groups

Treatment	compound type	Up	Down	all
<i>Poac</i> vs. C	Coumarins and derivatives	12	2	14
	Flavonoids	17	4	21
	Alkaloids and derivatives	4	0	4
	Pyrimidine nucleosides	1	1	2
	Purine nucleosides	4	12	16
<i>Podo</i> vs. C	Coumarins and derivatives	4	1	5
	Flavonoids	4	9	13
	Alkaloids and derivatives	7	2	9
	Pyrimidine nucleotide sugars	3	4	7
	Purine nucleosides	7	7	14