ON-LINE SUPPLEMENTAL MATERIAL

Elkordy A., Osman A.K., Badry M. O.: Seed and pollen morphology and numerical analysis of *Tephrosia* Pers. (Fabaceae) and their taxonomic significance. Acta Bot Croat, DOI: 10.37427/botcro-2022-012.

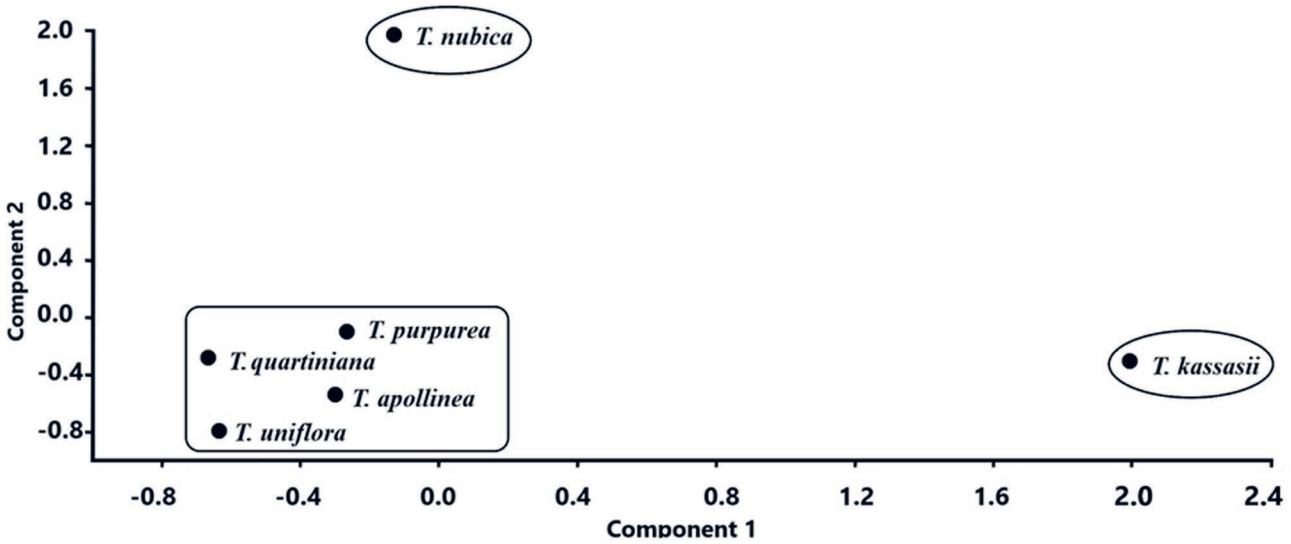
On-line Suppl. Tab 1. Taxa of *Tephrosia* investigated and used in seed and palynological study with specimen collector, collection site, and herbarium. CAI – Cairo University Herbarium, SVU – South Valley University.

No.	Taxon	Collector	Date of collection	Locality	Herbarium
1	*Tephrosia apollinea* (Delile) DC.	Loutfy Boulus	26–Aug. 1966	Wadi Allaqi, Aswan, Egypt	CAI
2	*Tephrosia nubica* (Boiss.) Baker	Nabil El-Hadidi	11–Sep. 1999	Gebel Elba, Egypt.	CAI
3	*Tephrosia purpurea* (L.) Pers.	Ahmed Osman	30–Aug. 1994	SVU, Qena, Egypt	South Valley University Herbarium, Egypt
4	*Tephrosia quartiniana* Cufod.	Nabil El-Hadidi	23–Sep. 1999	Gebel Elba, Egypt.	CAI
5	*Tephrosia uniflora* Pers.	Nabil El-Hadidi	19–Aug. 1999	Gebel Elba, Egypt.	CAI
6	*Tephrosia kassasii* Boulos	Ibrahim El-Garf	28–Jul. 1950	Nubia, Egypt	South Valley University Herbarium, Egypt

On-line Suppl. Tab. 2. Correlation of macro and micromorphological characters of *Tephrosia* with the first three principal components axes showing highest factor loading, factor loading values ≥ ± 0.6 are highlighted. PC – principal components.

No.	Character	Principal components		
		Factor loading		
		PC 1	PC 2	PC 3
1	Life span	- 0.3607	- 0.141	- 0.7826
2	Stem type	- 0.7215	- 0.6515	- 0.2263
3	Plant nature	- 0.4306	-0.3327	- 0.4568
4	Stem indumentum	0.4773	- 0.7337	0.2321
5	Stem branching	0.1522	- 0.7319	0.4975
6	Stipules length	- 0.1283	- 0.04553	- 0.848
7	Stipules shape	- 0.2852	- 0.1092	- 0.8968
8	Stipules apex	0.2964	- 0.467	- 0.6752
9	Petiole length	0.3514	- 0.1163	- 0.7946
10	Rhachis length	0.5067	- 0.03861	- 0.6737
11	Leaflet shape	0.6433	- 0.405	- 0.2862
12	Adaxial leaflet surface	- 0.04476	0.1473	- 0.8876
13	Abaxial leaflet surface	- 0.687	- 0.4196	- 0.3195
14	Corolla color	0.4976	- 0.67	- 0.2179
15	Pod length	0.06423	- 0.9713	- 0.2187
16	Pod width	0.5048	0.4059	- 0.3901
17	Pod indumentum	0.7442	- 0.2716	- 0.3131
18	Pod shape	- 0.2565	- 0.03574	0.1583
19	No. of pod's seeds	0.06423	- 0.9713	- 0.2187
20	Seed shape	0.5099	- 0.3878	0.213
21	Seed length	- 0.2883	0.4248	- 0.07458
22	Seed width	- 0.06796	0.4121	- 0.3869
23	Seed length-width ratio	- 0.4735	0.08026	0.4967

24	Testa texture	- 0.01987	- 0.038	0.7674
25	Epidermal cell shape	- 0.6502	- 0.6	0.2942
26	Epidermal cell area	- 0.3743	- 0.5008	0.6534
27	Anticlinal boundaries form	- 0.3106	- 0.3806	0.6353
28	Anticlinal boundaries thickness	0.01117	- 0.16	0.5017
29	Anticlinal boundaries surface	0.2239	- 0.5065	0.613
30	Periclinal cell wall form	- 0.4632	- 0.4363	0.5508
31	Periclinal cell wall surface	0.06746	- 0.3022	0.4391
32	Hilum shape	- 0.3657	- 0.3937	0.2062
33	Hilum position	0.2166	0.2455	0.6164
34	Hilum length	- 0.3347	0.5873	- 0.1239
35	Hilum width	- 0.3032	0.733	- 0.06157
36	Hilum area	- 0.239	0.7405	- 0.07771
37	Polar axis	- 0.5542	0.4442	0.5735
38	Polar distance	- 0.4425	0.1619	- 0.763
39	Polar view area	- 0.2918	0.9421	- 0.1646
40	Equatorial diameter	- 0.1923	0.8625	- 0.3613
41	Equatorial view area	- 0.3305	0.9286	0.1445
42	P/E ratio	- 0.155	- 0.5547	0.6392
43	Apocolpium diameter	- 0.1104	0.9754	0.02224
44	Apocolpium index	0.08255	0.7931	0.5966
45	Apocolpium field	- 0.06291	0.971	0.2235
46	Intercolpium area	0.9963	0.08605	- 0.003
47	Mesocolpium diameter	0.7966	0.4795	- 0.3425
48	Lumen diameter	0.01756	0.02323	0.116
49	Lumen area	0.2424	0.2972	0.211
50	Murus thickness	- 0.2924	0.5164	0.5872
51	Colpus length	- 0.2512	0.08373	- 0.5646
52	Colpus width	0.18	0.8936	0.3694
53	Colpus area	- 0.4738	0.566	0.3796
54	Pollen shape	- 0.1565	0.4295	- 0.7209
55	Polar view shape	0.2873	- 0.2517	- 0.7801
56	Equatorial view shape	- 0.3608	- 0.5105	0.5563
57	Equatorial view surface sculpture	0.7134	0.08515	0.04441
58	Polar view surface sculpture type	0.3565	0.416	0.3837
59	Aperture sculpture type	- 0.04476	0.1473	- 0.8876
60	Ectoaperture sculpture type	0.4099	- 0.3907	0.2021
61	Endoaperture	0.7215	0.6515	0.2263
62	Lumina shape	0.4358	0.5152	0.1076
	Variance percentage per PCO	74.81%	24.13%	0.87%
Total variance percentage of the first three principal components is			99.81%	



On-line Suppl. Fig. 1. Scatter plot of the six OTUs of *Tephrosia* plotted against the first principal component by the second principal component from the principal component analysis (PCA) based on 62 characters. OTUs – operational taxonomic unit.