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Table 1S. Updates to the catalogue of the alien flora of Algeria. Life form: Ph = phanerophyte, G= geophyte, Th= therophyte, H= hemicryptophyte, Ch= chamaephyte; Status: N= naturalized, I/N= in the process of naturalization, C= casual; Distribution in Algeria: Li= littoral, TA= Tellian Atlas, St= steppe, Sah= Sahara; Habitat: S= semi-natural, N= natural, H=human-made

Taxa (accepted names according to IPNI 2024)	Families (APG IV 2016)	Life form	Origin	Status	Distribution in Algeria				Habitat	Introduction pathway
					Li	TA	St	Sah		
Aeonium arboreum (L.) Webb & Berthel.	*Crassulaceae*	Ph	Macaronesia	N	x				S	ornamental
Aeonium haworthii Webb & Berthel.	*Crassulaceae*	Ph	Macaronesia	N	x				S	ornamental
Allium neapolitanum Cirillo	*Amaryllidaceae*	G	Mediterranean	N	x				H	ornamental
Allium cyrilli Ten.	*Amaryllidaceae*	G	Mediterranean	N		x	x		H	unintentional
Aloe arborescens Mill.	*Asphodelaceae*	Ph	S Africa	N	x				H	ornamental
Aloe maculata All.	*Asphodelaceae*	Ch	S Africa	N	x				S	ornamental
Amaranthus albus L.	*Amaranthaceae*	Th	N America	N	x				H	unintentional
Amaranthus cruentus L.	*Amaranthaceae*	Th	N to C America	N	x				H	ornamental
Amaranthus deflexus L.	*Amaranthaceae*	H	S America	N	x				H	unintentional
Amaranthus hypochondriacus L.	*Amaranthaceae*	Th	N America	N	x				H	ornamental
Amaranthus powellii S. Watson	*Amaranthaceae*	Th	N America	N	x				H	unintentional
Amaranthus retroflexus L.	*Amaranthaceae*	Th	N America	N	x				H	unintentional
Amaryllis belladonna L.	*Amaryllidaceae*	G	S Africa	N	x				N	ornamental
Anredera cordifolia (Ten.) Steenis	*Basellaceae*	G	S America	N	x				S	ornamental
Arctotheca calendula (L.) Levyns	*Asteraceae*	H	S Africa	N	x				N	unintentional
Atriplex canescens (Pursh) Nutt.	*Amaranthaceae*	Ph	N to C America	N			x		N	restoration of steppe pastures
Austrocylindropuntia cylindrica (Lam.) Backeb.	*Cactaceae*	Ph	S America	I/N	x				S	ornamental
Austrocylindropuntia subulata (Muehlenpf.) Backeb.	*Cactaceae*	Ph	S America	N	x	x ?			N+S+H	ornamental
Bidens aurea (Aiton) Sherff	*Asteraceae*	H	N America	I/N	x				H+S	ornamental
Campsis radicans (L.) Bureau	*Bignoniaceae*	Ph	N America	N	x				H+S	ornamental
Canna indica L.	*Cannaceae*	G	T America	I/N	x				H+S	ornamental
Cereus hildmannianus K. Schum.	*Cactaceae*	Ph	S America	C	x				H	ornamental
Chlorophytum comosum (Thunb.) Jacques	*Asparagaceae*	G	T & S Africa	C	x				H	ornamental

Commelina forskaolii Vahl	*Commelinaceae*	Ch	Africa to S Asia	N	x?				U	ornamental
Consolida ajacis (L.) Schur	*Ranunculaceae*	Th	S Europe to C Asia	N	x?				U	ornamental
Crassula ovata (Mill.) Druce	*Crassulaceae*	Ph	S Africa	C	x				H	ornamental
Cyperus alternifolius subsp. flabelliformis Kük.	*Cyperaceae*	G	T Africa	N	x				H+S	ornamental
Cyperus eragrostis Lam.	*Cyperaceae*	G	S America	N	x				N	unintentional
Drosanthemum floribundum (Haw.) Schwantes	*Aizoaceae*	Ch	S Africa	N	x				S	ornamental
Duranta erecta L.	*Verbenaceae*	Ph	T America	C	x				H	ornamental
Eclipta prostrata (L.) L.	*Asteraceae*	Th	N to S America	N	x				N	unintentional
Eriobotrya japonica (Thunb.) Lindl.	*Rosaceae*	Ph	E Asia	C	x				H	food
Eschscholzia californica Cham.	*Papaveraceae*	Th	N America	N		x			U	ornamental
Ficus microcarpa L. f.	*Moraceae*	Ph	T Asia to Australia	I/N	x				H+S	ornamental
Gazania ×splendens Hend. & Andr. Hend.	*Asteraceae*	H	Hybrid	I/N	x				H	ornamental
Helianthus annuus L.	*Asteraceae*	Th	N America	C	x				H	ornamental and other uses
Heliotropium amplexicaule Vahl	*Boraginaceae*	H	S America	N	x				H+S	ornamental
Justicia adhatoda L.	*Acanthaceae*	Ph	S Asia	C	x				S	ornamental
Kalanchoe laxiflora Baker	*Crassulaceae*	Ch	S Africa	C	x				H	ornamental
Kalanchoe ×houghtonii D.B. Ward	*Crassulaceae*	Ch	Hybrid	I/N	x	x			H+S	ornamental
Melia azedarach L.	*Meliaceae*	Ph	T Asia to Australia	N	x				H+S	ornamental
Morus alba L.	*Moraceae*	Ph	E Asia	N	x				S	sericultural industry
Nothoscordum ×borbonicum Kunth	*Amaryllidaceae*	G	S America	N	x				H	ornamental
Oenothera stricta Link	*Onagraceae*	Th	S America	N	x	x		x	N	ornamental
Opuntia dejecta Salm-Dyck	*Cactaceae*	Ph	C America	I/N	x				H+S	ornamental
Opuntia microdasys (Lehm.) Pfeiff.	*Cactaceae*	Ph	C America	N	x				S	ornamental
Opuntia monacanthos (Willd.) Haw.	*Cactaceae*	Ph	S America	N	x				H+S+N	ornamental
Opuntia robusta H.L. Wendl. ex Pfeiff.	*Cactaceae*	Ph	C America	N		x			N	ornamental
Opuntia stricta (Haw.) Haw.	*Cactaceae*	Ph	N & C America	N	x	x?			H+S+N	ornamental
Opuntia tomentosa Salm-Dyck	*Cactaceae*	Ph	C America	I/N	x				H+S	ornamental
Paspalum vaginatum Sw.	*Poaceae*	G	N & S America	N		x			N	ornamental

Pelargonium zonale (H.) L'Hér.	*Geraniaceae*	Ph	S Africa	C	x				H+S	ornamental
Phoenix canariensis H. Wildpret	*Arecaceae*	Ph	Macaronesia	N	x	x			H+S+N	ornamental
Prunus armeniaca L.	*Rosaceae*	Ph	C & E Asia	C	x				H	food
Prunus domestica L.	*Rosaceae*	Ph	Eurasia	C	x				H	food
Prunus persica (L.) Batsch	*Rosaceae*	Ph	E Asia	C	x				H	food
Salvia hispanica L.	*Lamiaceae*	Th	N & C America	C	x				H	food for birds
Scilla hyacinthoides L.	*Asparagaceae*	G	S Europe to W Asia	N	x				U	ornamental
Solanum lycopersicum L.	*Solanaceae*	Th	S America	I/N	x				H	food
Solanum rostratum Dunal	*Solanaceae*	Th	N & C America	N		x	x		H	unintentional
Solanum tuberosum L.	*Solanaceae*	G	S America	C	x				H	food
Sapindus mukorossi Gaertn.	*Sapindaceae*	Ph	S & E Asia	C	x				H	ornamental and other uses
Tagetes minuta L.	*Asteraceae*	Th	S America	N	x				U	ornamental
Tecomaria capensis (Thunb.) Spach	*Bignoniaceae*	Ph	C, E & S Africa	N	x				H+S	ornamental
Tetragonia tetragonoides (Pall.) Kuntze	*Aizoaceae*	Th	E Asia to Oceania	I/N	x				H+S	food
Tipuana tipu (Benth.) Kuntze	*Fabaceae*	Ph	S America	I/N	x				N	ornamental
Tradescantia fluminensis Vell.	*Commelinaceae*	H	S America	C	x				H	ornamental
Tradescantia pallida (Rose) D.R. Hunt	*Commelinaceae*	H	N America	C	x				H	ornamental
Triadica sebifera (L.) Small	*Euphorbiaceae*	Ph	E Asia	C	x				H	ornamental
Trifolium alexandrinum L.	*Fabaceae*	Th	Mediterranean to W Asia	C	x ?				U	fodder ?
Verbena bonariensis L.	*Verbenaceae*	Ch	S America	C	x ?				U	ornamental
Washingtonia robusta H. Wendl.	*Arecaceae*	Ph	N America	N	x				H	ornamental
Zea mays L.	*Poaceae*	Th	N & C America	C	x				H	food
Zinnia elegans Jacq.	*Asteraceae*	Th	N & C America	C	x				H	ornamental

Alien species reported for the first time for Algeria

Chlorophytum comosum (Thunb.) Jacques (Fig. S1) (*Asparagaceae*)
Locality: Larbi Ben M'Hidi (city of Skikda), two non-flowering individuals in roadside gutter, 36° 52' 50.1600"N, 6° 58' 54.5160"E, 57m, 29/5/2022 and 5/7/2023. The native range of this species is West Tropical Africa to Cameroon, Ethiopia to South Africa (POWO 2024).
This species has been reported in a few European countries on the northern shore of the Mediterranean. It is considered casual in Spain (Aymerich & Sáez 2019) and naturalized in Italy. (Galasso & al. 2024). In North West Africa, it has been cited as casual in the Canary Islands (Verloove & al. 2020), in continental North Africa, the species is cited as introduced without specifying its area of presence by the African Plant Database (APD 2024). It seems that to date, its escape from cultivation is confirmed only for Tunisia where it has been reported as casual (El Mokni 2018). Our report for Algeria, as a casual, is therefore the second for continental North Africa. The species seems to have escaped from gardens where it is widely cultivated as an ornamental, whether indoor or outdoor.

Fig. S1. *Chlorophytum comosum* in roadside gutter at Larbi Ben M'Hidi (Skikda, northeastern Algeria), 5/7/2023. Photo by N. Sakhraoui.

Helianthus annuus L. (*Asteraceae*)
Locality: Larbi Ben M'Hidi (city of Skikda), five young individuals growing amidst native species at the edge of an alley, 36°52'43.3200"N, 6°58'53.8320"E, 58m, 13/04/2020; city of Skikda, two flowering individuals next to a roadside dump, 36°52'32"N 6°54'05"E, 78m, 21/06/2022. The native range of this species is South West USA to Mexico (POWO 2024).
This species is cultivated throughout the world for its flowers and seeds. Its escape from cultivation has been recorded in several countries in the northern part of the Mediterranean area such as Albania (Barina & al. 2014), Greece (Arianoutsou & al. 2010), Italy (Galasso & al. 2018), France (Puddu & al. 2016) and Spain (Aymerich & Sáez 2019). In North Africa, it has been reported as naturalized in Morocco, as casual in Libya and Tunisia (Euro+Med PlantBase 2024) but it has not been reported in Algeria (APD 2024; Euro+Med PlantBase 2024). Our record is therefore the first for the country where it is considered casual.
Helianthus annuus is widely cultivated in Algeria, mainly as an ornamental plant. However, in recent years, large-scale experimental cultivation of this oilseed plant for the agro-food industry has begun, which could lead to its escape in other regions of the country.

Salvia hispanica L. (Fig. S2) (*Lamiaceae*)
Locality: University of Skikda (city of Skikda), two flowering plants at the edge of the sidewalk along with native species such as *Urtica membranacea* and *Fumaria* sp. 36° 50' 51.7200"N, 6° 53' 47.9400"E, 25m, 26/11/2021. The native range of this species is Mexico to Guatemala (POWO 2024).
This species has been reported as casual in some countries in the northern part of the Mediterranean such as Spain (Aymerich & Sáez 2019) and Bosnia-Herzegovina (Maslo & Šarić 2020) and has recently been reported as naturalized in Italy (Galasso & al. 2024). It had not been reported from the southern part of the Mediterranean (APD 2024; Euro+Med PlantBase 2024). This record in Algeria, as a casual, is the first for continental North Africa. This species was not reported in a recent inventory of the horticultural flora of the Skikda region (Sakhraoui 2021). In Algeria, its appearance seems linked to the use of its seeds as food for cage birds, in contrast to Europe where the species is rather associated with modern human diets and ends up on riverbanks via wastewater (Maslo & Šarić 2020). There are three confirmed Algerian occurrences on iNaturalist (https://www.inaturalist.org/observations/80251209; https://www.inaturalist.org/observations/80141671; https://www.inaturalist.org/observations/80140462), dating respectively from 25/05/2021 and 24/05/2021 (the same date for the last two occurrences) and observed in the town of Skikda, not far from the observation site recorded by the first author of this article, where it grows on the edge of sidewalks and near houses.

Fig. S2. *Salvia hispanica* at the edge of the sidewalk at Skikda University (northeastern Algeria), 26/11/2021. Photo by N. Sakhraoui.

Sapindus mukorossi Gaertn. (Fig. S3) (*Sapindaceae*)
Locality: Ramdan Djamel (Skikda), eight non-flowering plants, two of which 2m high, in a temporary dump at the side of the road. 36°45'14"N, 6°53'58"E, 36m, between 14/7/2021 and 29/10/2023. The native range of this species is North India to Temperate East Asia and Indo-China (POWO 2024).
Reported as introduced only in the USA (POWO 2024) and as cultivated in Pakistan (Flora of Pakistan 2024; POWO 2024). In the Mediterranean basin, the species is reported as cultivated only in Cyprus; there are no reports of its escape for Mediterranean Europe or North Africa (Euro+Med PlantBase 2024). This record in Algeria is therefore the first for the region.
The observed individuals appear to result from the germination of seeds produced by an adult tree growing near the road. The species should be considered casual.

Fig. S3. Young individuals of *Sapindus mukorossi* in a temporary dump at Ramdan Djamel (Skikda, northeastern Algeria), 14/07/2021. Photo by N. Sakhraoui.

Tradescantia pallida (Rose) D.R. Hunt (Fig. S4) (*Commelinaceae*)
Locality: Town of Skikda, a large flowering population on a concrete slab at the entrance to a building. 36° 52' 9.8400"N, 6° 54' 43.0560"E, 22m, between 9/3/2019 and 15/5/2023. The native range of this species is Mexico (POWO 2024).
This species has been reported as casual in some countries in the northern part of the Mediterranean such as Italy (Galasso & al. 2018; Galasso et al. 2024), Spain (Aymerich & Sáez 2019) and Turkey (Uludağ & al. 2017). In continental North Africa, the species is cited only as cultivated by the African Plant Database (APD 2024). However, its escape was reported in Tunisia where a single population, considered casual, was found on the side of the road in the Ain Draham region (El Mokni 2018). The present record is therefore the first for Algeria and the second for North Africa, as a casual alien. The observed population appears to be the result of pruning waste thrown by residents who grow the species on balconies and terraces.

Fig. S4. *Tradescantia pallida* on a concrete slab at the entrance to a building (Skikda, northeastern Algeria), 15/5/2023. Photo by N. Sakhraoui.

Triadica sebifera (L.) Small (Fig. S5) (*Euphorbiaceae*)
Locality: University of Skikda (city of Skikda), dozens of young individuals varying in size between 10 cm and 1 m, at the edge of roads and sidewalks. 36° 50' 57.1200"N, 6° 53' 30.7320"E, 20m, between 7/6/2019 and 21/9/2023. The native range of this species is Central and South China to Vietnam and Temperate East Asia (POWO 2024).
The species is introduced in USA and India (POWO 2024), but no records seem to exist for the Mediterranean basin (Euro+Med PlantBase 2024) or Africa where it is only cited as cultivated in tropical Africa (APD 2024). This recording in Algeria is therefore the first for the entire African continent.
Every year, new self-sown individuals are recorded on the site, resulting from the germination of seeds, which apparently happens very easily. However, these are constantly weeded during maintenance work,

which is why the species is considered merely casual. The seeds come from mature, fruit-bearing trees from the university's green spaces.

Fig. S5. Young individuals of *Triadica sebifera* at the edge of sidewalk at Skikda University (northeastern Algeria), 21/09/2023. Photo by N. Sakhraoui.

Zinnia elegans Jacq. (*Asteraceae*)
Locality: Larbi Ben M'Hidi (city of Skikda), a small population of five spontaneously germinated flowering individuals observed in a landfill, 36°52'53.0400"N, 6°59'7.9800"E, 58m, 30/12/2019. The native range of this species is Mexico to Nicaragua (POWO 2024).
In the northern Mediterranean, it has been known from Italy where it has been reported as casual (Galasso & al. 2024) and from Bosnia-Herzegovina and France where it has been recorded as introduced (Euro+Med PlantBase 2024). In North Africa, the species was not cited by Dobignard & Chatelain (2010-2013) and does not appear to have been previously reported (APD 2024; Euro+Med PlantBase 2024). Our record from Algeria, as a casual species, thus is the first for the region. The species is widely cultivated in public green areas of the region, from where it probably escaped.

References

APD (African Plant Database) 2024: African Plant Database. – https://africanplantdatabase.ch/ [accessed 05/02/2024]

Arianoutsou, M., Bazos, I., Delipetrou, P. & Kokkoris, Y. 2010: The alien flora of Greece: Taxonomy, life traits and habitat preferences. – Biol. Invas. **12:** 3525-3549. https://doi.org/10.1007/s10530-010-9749-0

Aymerich, P. & Sáez, L. 2019: Checklist of the vascular alien flora of Catalonia (northeastern Iberian Peninsula, Spain). – Mediterr. Bot. **40:** 215-242. https://dx.doi.org/10.5209/mbot.63608

Barina, Z., Rakaj, M., Somogyi, G., Eros-Honti, Z. & Pifko, D. 2014: The alien flora of Albania: history, current status and future trends. – Weed. Res. **54(2):** 196-215. https://doi.org/10.1111/wre.12061

Dobignard, A. & Chatelain, C. 2010-2013) : Index synonymique de la flore de l'Afrique du Nord, **1-5.** – Conservatoire et Jardin Botaniques, Genève, Suisse.

El Mokni, R. 2018 : *Cholorophytum comosum* (Thunb.) Jacques, *Tradescantia pallida* (Rose) D. R. Hunt. In: Raab-Straube, E.V. & Raus, Th. (ed), Euro+Med-Checklist Notulae 9. – Willdenowia **48:** 195-220. https://doi.org/10.3372/wi.48.48203

Euro+Med PlantBase 2024: https://europlusmed.org/ [accessed 1/01/2024)

Flora of Pakistan 2024: *Sapindus mukorossi* Gaertn, published on http://www.efloras.org/florataxon.aspx?flora_id=5&taxon_id=200013220 [accessed 2/01/2024]

Galasso, G., Conti, F., Peruzzi, L., Ardenghi, N. M. G., Banfi, E., Celesti-Grapow, L., Albano, A., Alessandrini, A., Bacchetta, G., Ballelli, S., Bandini Mazzanti, M., Barberis, G., Bernardo, L., Blasi,

C., Bouvet, D., Bovio, M., Cecchi, L., Del Guacchio, E., Domina, G., Fascetti, S., Gallo, L., Gubellini, L., Guiggi, A., Iamonico, D., Iberite, M., Jiménez-Mejías, P., Lattanzi, E., Marchetti, D., Martinetto, E., Masin, R. R., Medagli, P., Passalacqua, N.G., Peccenini, S., Pennesi, R., Pierini, B., Podda, L., Poldini, L., Prosser, F., Raimondo, F. M., Roma-Marzio, F., Rosati, L., Santangelo, A., Scoppola, A., Scortegagna, S., Selvaggi, A., Selvi, F., Soldano, A., Stinca, A., Wagensommer, R. P., Wilhalm, T. & Bartolucci, F. 2018: An updated checklist of the vascular flora alien to Italy. – Pl. Biosyst. **152(3):** 556-592. https://doi:10.1080/11263504.2018.1441197

Galasso, G., Conti, F., Peruzzi, L., Alessandrini, A., Ardenghi, N. M. G., Bacchetta, G., Banfi, E., Barberis, G., Bernardo, L., Bouvet, D., Bovio, M., Castello, M., Cecchi, L., Del Guacchio, E., Domina, G., Fascetti, S., Gallo, L., Guarino, R., Gubellini, L., Guiggi, A., Hofmann, N., Iberite, M., Jiménez-Mejías, P., Longo, D., Marchetti, D., Martini, F., Masin, R. R., Medagli, P., Musarella, C.M., Peccenini, S., Podda, L., Prosser, F., Roma-Marzio, F., Rosati, L., Santangelo, A., Scoppola, A., Selvaggi, A., Selvi, F., Soldano, A., Stinca, A., Wagensommer, R. P., Wilhalm, T. & Bartolucci, F. 2024: A second update to the checklist of the vascular flora alien to Italy. – Pl. Biosyst. https://doi.org/10.1080/11263504.2024.2320129

Maslo, S. & Šarić, Š. 2020: *Salvia hispanica* (L.) *Lamiaceae*, a new alien species in the flora of Bosnia and Herzegovina and the Balkans. – Thaiszia **30:** 31-36.

POWO 2024: Plant Of the World Online. – https://powo.science.kew.org/ [accessed 01/01.2024]

Puddu, S., Podda, L., Mayoral, O., Delage, A., Hugot, L., Petit, Y. & Bacchetta, G. 2016: Comparative analysis of the alien vascular flora of Sardinia and Corsica. – Not. Bot. Horti. Agrobot. Cluj-Napoca **44(2):** 337-346.

Sakhraoui, N. 2021 : La flore horticole cultivée dans la wilaya de Skikda: état des lieux et stratégies de gestion durable. – Thèse de doctorat, Université Mohamed Chérif Messaadia, Souk Ahras, Algérie.

Uludağ, A., Aksoy, N., Yazlık A., Arslan Z.F., Yazmış, E., Üremiş, I., Cossu, T. A., Groom, Q., Pergl, J., Pyšek, P. & Brundu, G. 2017: Alien flora of Turkey: checklist, taxonomic composition and ecological attributes. – NeoBiota **35:** 61-85. https:// doi.org/10.3897/neobiota.35.12460

Verloove, F., Déniz Suárez, E.A. & Salas-Pascual, M. 2020: New records of non-native vascular plants in Gran Canaria (Spain, Canary Islands). – Fl. Medit. **30:** 121-136. https://doi.org/10.7320/FlMedit30.121