

**Table S1:** Explanatory variables for modelling invasion success. Classification: variables were sub-classified into morpho-physio-phenological traits (1), ecological performances, resulting from an interplay of distinct morpho-physio-phenological traits and external variables (2), and variables describing the introduction history of the species (3). Variables included in multivariable modelling derived from data reduction in pre-analysis are checked; sample size of multiple trait analysis: 181 species. <sup>1</sup>: Value was not included in multivariable modelling. <sup>2</sup>: Only insect-pollinated plant species were considered. <sup>3</sup>: Predictor was not considered for multivariable modelling since information was missing for more than 30% of the species. For details on traits see Klotz *et al.* (2002).

Variable	Value	Number of species	Classification	Multivariable modelling
<i>Genetics</i>				
Ploidy	Diploid; polyploid	346	1	X
DNA content	DNA content (pg/2C nucleus)	78	1	-
<i>Morphology</i>				
Raunkiaer life form	Macrophanerophyte; nanophanerophyte; chamaephyte; hemicryptophyte; geophyte; therophyte	310	1	-
Growth form	Herb; shrub; tree	376	1	X
Life span	Annual; perennial	352	1	X
Existence of vegetative propagation and dispersal	Yes; no	380	1	-
Vegetative propagation and dispersal	None; runner, rhizome; root shoot; bulb	334	1	-

Variable	Value	Number of species	Classification	Multivariable modelling
Existence of storage organs	Yes; no	382	1	-
Storage organs	None; runner; pleiocorm; rhizome; bulb	293	1	-
Shoot metamorphoses	None; runner; pleiocorm; rhizome; bulb <sup>1</sup>	328	1	X
Root metamorphoses	None; primary storage root; root shoot	375	1	-
Leaf anatomy	Scleromorphic; mesomorphic; hygromorphic; helomorphic; hydromorphic	314	1	-
Leaf persistence	Spring green; summer green; overwintering green; persistent green	338	1	-
<i>Flowering phenology</i>				
Start of flowering season	Start of flowering season (month)	379	1	-
Length of flowering season	Log <sub>10</sub> -transformed length of the time period where flowering individuals of the species are found (months)	379	1	X
End of flowering season	End of flowering season (month), log <sub>10</sub> -transformed in single trait model	379	1	X
<i>Floral and reproductive biology</i>				
Strategy types of reproduction	Predominantly via seeds; seeds and vegetatively; predominantly vegetatively	388	1	-
Independence in reproduction with seeds	Independent reproduction with seeds of the	275	1	-

Variable	Value	Number of species	Classification	Multivariable modelling
	individual (1 – 4; 1 = no, 2 = not likely, 3 = potentially, 4 = predominantly)			
Pollen vector	Wind; insect; self	329	1	X
Floral UV-pattern <sup>2</sup>	Yes; no	77	1	-
Floral UV-reflection <sup>2</sup>	UV-absorption; UV-neutral; moderate UV-reflexion; strong UV-reflexion	72	1	-
Blossom type	Disk- and bowlshaped flowers; funnel flowers; bell shaped flowers; lip flowers; flag blossom; flower heads	281	1	-
Types of generative diaspores	Fruit; fruit with appendage; seed; mericarp	143	1	-
Weight generative diaspores	Log <sub>10</sub> -transformed weight of generative diaspores (mg)	152	1	-
Weight germinules	Log <sub>10</sub> -transformed weight of germinules (mg)	184	1	-
<i>Life strategy</i>				
Ecological strategy types	Competitors; competitors/ruderals; competitors/stress-tolerators; competitors/stress-tolerators/ruderals; ruderals; stress-tolerators/ruderals	353	2	-
Ruderal life strategy	Elements of ruderal life strategy (1 – 4; 1 = stress tolerant strategy or competitive strategy with no elements of ruderal strategy, 4 = pure ruderal)	359	2	-

Variable	Value	Number of species	Classification	Multivariable modelling
strategy (following Prinzing <i>et al.</i> 2002)				
<i>Native geographic range</i>				
Zonal distribution	Cosmopolitan; boreal to southern temperate; northern temperate to meridional; northern temperate to subtropical; submeridional to subtropical	324	2	-
Number of floristic zones	Log <sub>10</sub> -transformed number of floristic zones of geographic range	324	2	X
Continents	Asia; Europe; Asia and Europe; Americas	313	2	-
Old World vs. New World only	Old World or Old World and New World; only New World	335	2	-
Oceanity	Continental; weak continental; subcontinental; weak subcontinental; weak suboceanic; suboceanic; weak oceanic; oceanic	264	2	-
Amplitude in continentality-oceanity gradient	Amplitude (1 – 4; 1 = small oceanic-continental range, 4 = wide oceanic-continental range)	275	2	-
<i>Introduction history</i>				
Mode of immigration	Contaminants; escaped useful plant	357	3	-
Year of first occurrence in the wild <sup>3</sup>	Time of first occurrence in the wild (year)	136	3	-
<i>Habitat range in Germany</i>				

Variable	Value	Number of species	Classification	Multivariable modelling
Urbanity	Depending on presence and absence in urban and non-urban areas plants are allocated to one of the following categories: More or less urbanophobic; urbanoneutral; more or less urbanophilic	334	2	-
Number of hemerobic levels	The system of hemerobic levels (see also Jalas 1955; Sukopp 1972) classifies habitats in six levels according to their modification by anthropogenic influence. Species can occur in one or several of these levels. The number of hemerobic levels, a count of the different hemerobic levels a species is known to occur in, reflects the species range (for details see Klotz & Kühn 2002).	340	2	-
Number of habitat types	Log <sub>10</sub> -transformed number of the main habitats a plant species can be found in, following the classification system of Haeupler & Muer (2000)	353	2	-
Number of vegetation formations	Log <sub>10</sub> -transformed number of vegetation formations a plant species can be found in, following the classification system of Schubert <i>et al.</i> (2001)	307	2	-
Number of vegetation units	Log <sub>10</sub> -transformed number of vegetation units (“phytosociological classes”) a plant species can be found in, following the classification system of Schubert <i>et al.</i> (2001)	307	2	-

## References for Table S1

Haeupler, H. & Muer, T. (2000) *Bildatlas der Farn- und Blütenpflanzen Deutschlands*. Ulmer, Stuttgart.

Jalas, J. (1955) Hemerobe und hemerochore Pflanzenarten. Ein terminologischer Reformversuch. *Acta Societatis Fauna Flora Fennica*, **72**, 1-15.

Klotz, S. & Kühn, I. (2002) Indikatoren zum anthropogenen Einfluss auf die Vegetation. *BIOLFLOR - Eine Datenbank mit biologisch-ökologischen Merkmalen zur Flora von Deutschland* (eds S. Klotz, I. Kühn & W. Durka), pp. 241-246. Bundesamt für Naturschutz, Bonn.

Klotz, S., Kühn, I. & Durka, W. (2002) *BIOLFLOR - Eine Datenbank mit biologisch-ökologischen Merkmalen zur Flora von Deutschland*. Bundesamt für Naturschutz, Bonn.

Prinzing, A., Durka, W., Klotz, S. & Brandl, R. (2002) Which species become aliens? *Evolutionary Ecology Research*, **4**, 385-405.

Schubert, R., Hilbig, W. & Klotz, S. (2001) *Bestimmungsbuch der Pflanzengesellschaften Deutschlands*. Spektrum, Heidelberg.

Sukopp, H. (1972) Wandel von Flora und Vegetation in Mitteleuropa unter dem Einfluß des Menschen. *Berichte über Landwirtschaft*, **50**, 112-139.