



## SURVEY OF EXOTIC PLANT SPECIES IN IRAQ

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### Abstract

A survey was conducted of different areas of Iraq and the diagnosis of many invasive and exotic plants in Iraq. The results showed the spread of approximately 17 plant families in different regions and in different climatic conditions, which were classified as invasive plants and not wild plants in Iraq which they are 1- Araliaceae, 2- Arecaceae, 3- Asteraceae, 4- Brassicaceae, 5- Convolvulaceae, 6- Caprifoliaceae, 7- Casuarinaceae, 8- Cyperaceae, 9- Fabaceae, 10- Hydrocharitaceae, 11- Meliaceae, 12- Myrtaceae, 13- Rhamnaceae, 14- Pinaceae, 15- Poaceae, 16- Polygonaceae, 17- Pontederiaceae. Also, the number of species were identified for each plant family which is classified invasive plants.

**Keywords:** Survey, exotic, species, plant, Iraq.

### Introduction

Invasive exotic species of plants are not native in a given area and which also characterized by the ability for out-compete indigenous plant species. humans with good intentions brought Invasive exotics plants to their non-native surroundings. F (Lee, 2002). The invasive exotic plants out-compete native plant species, which make concern about the displacement for the native plants, and ultimately, native habitats and ecosystems, and the reason are the invasive exotic plants (Willis *et al.*, 2000). These plants invade agricultural fields and the home landscapes, which causes very big problems in the environment. gradually, it Considered notoriety because they are an invasive plant, the multiple reasons are: in addition for rapid growth, they are prolific seeds, sprouts abundantly in roots, cut stumps, and releases phytotoxic substances which suppress the growth for other plants (Ali, 2016). For a purpose for overcoming the past mistakes to humans, today's landowners must be informed the invasive exotics and also must educated the best methods for correcting the resulting problems (Riad, 2006). Invasion with exotic plant species was related with the biotic (native vegetation and herbivory) and abiotic (climate and soil) factors (Al-Rawi, and Chakravarty, 2013). The biotic factors, native vegetation taken more attention. Native vegetation negatively affect invasion for exotic plants by competitive interactions as native species use resources which exotic species require (space, light, nutrients, etc.) (Chiou *et al.*, 2013). Exotic plants face different conditions with those experienced which they are native. The general issue for how exotics respond for unfamiliar environments in their new range dose not Completely understood (García *et al.*, 2010).

Invasive alien species are animals and plants which have been introduced for a natural habitat we are developing and sharing our expertise to tackle invasive alien species (Cordero *et al.*, 2016).

The Researchers are eradicating or controlling exotic species on sites which they constitute a major conservation problem. So implementing locally-led biosecurity measures for ensure they don't return. The Researchers are calling to more effective national, regional and international policies

for address non-native invasive species (Smith-Ramírez, 2004).

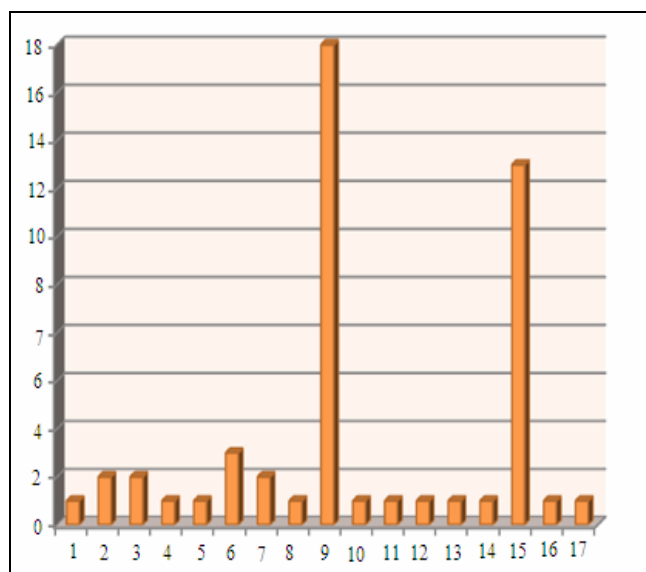
### Materials and Methods

Invasive plants were collected from different regions of Iraq and from a number of Iraqi provinces, in addition to some information on plants collected from other research to complete the list of invasive plants. The plants collected were diagnosed by Iraqi flora. The study of each species was not delved into as the study was a comprehensive survey.

### Results and Discussion

**Morphological studies:** Variation in morphological features of this species was studied after the Identification (Fig. 1). The results of the study showed after the diagnosis of plant varieties for each plant family, it was noted in our study that there are approximately 17 plant families distributed in different regions of Iraq and in different and varied environmental conditions, and each plant family is special in all its important taxonomic characteristics that distinguish it from other plant families upon studying each family alone, we found that the number of species varied among them, as the plant family Fabaceae (Leguminosae), This family is very large and widespread in all parts of the world and it is very important contained the most species, as follows: *Acacia laeta* Benth., *Acacia nilotica* (L.) Delile, *Acacia farnesiana* (L.) Willd., *Acacia karroo* Hayne, *Acacia saligna* (Labill.) Wendl., *Albizia lebbek* (L.) Benth., *Albizia julibrissin* Durazz., *Bauhinia purpurea* L., *Bauhinia variegata* L., *Bauhinia variegata* L., *Parkinsonia aculeate* L., *Prosopis juliflora* (SW.) DC., *Pithecellobium dulce* (Roxb.) Benth., *Robinia pseudoacacia* L., *Senna occidentalis* (L.) Link, *Senna corymbosa* (Lam.) H.S.Irwin & Barneby, *Senna alexandrina* Mill., *Senna artemisioides* Isely, *Senna didymobotrya* (Fresen.) H.S.Irwin & Barneby, *Senna sophora* (L.) Roxb., this agree with Ríos (2005). The family Poaceae (Gramineae) is also one of the most widespread and well-known families, and many researchers have studied it from all aspects of its ability to adapt to the environment and rapid spread contained the species, as follows: *Cynodon dactylon* (L.) Pers., *Dactyloctenium aegyptium* (L.) Willd., *Dactyloctenium aegyptium* (L.) Willd., *Imperata cylindrical* (L.) P.Beauv, *Lolium temulentum* L., *Panicum repens* L., *Paspalum distichum* L., These results were consistent with

many studies as a study of Lowe *et al.* (2004). and the family Caprifoliaceae contained the species, as follows: *Lonicera maackii* (Rupr.) Maxim., *Lonicera japonica* Thunb., *Lonicera sempervirens* L., so and the family Arecaeae contained *Washingtonia filifera* (Lindl.) H.Wendl. *Washingtonia robusta* H. Wendl (Besnard *et al.*, 2013). The family Asteraceae contained *Taraxacum officinale* (L.) Weber ex F.H. Wigg. and *Erigeron canadensis* L., So the family Casuarinaceae contained *Cassia fistula* L. and *Casuarina equisetifolia* L. (Verlaque *et al.*, 2011). The family Araliaceae contained *Tetrapanax papyrifer* (Hook.) K.Koch, the family Brassicaceae has *Capsella bursa-pastoris* (L.) Medik., the family Convolvulaceae has *Cuscuta campestris* Yunck., the family Cyperaceae has *Cyperus rotundus* L., (Tamura *et al.*, 2011). the family Hydrocharitaceae has *Hydrilla verticillata* (L.f.) Royle, the family Meliaceae has *Melia azedarach* L., the family Myrtaceae has *Eucalyptus camaldulensis* Dehnh., (Besnard *et al.*, 2013). the family Rhamnaceae has *Ziziphus jujuba* Mill., the family Pinaceae has *Pinus halepensis* Mill., the family Polygonaceae has *Emex spinosa* (L.) Campd, the family Pontederiaceae has *Eichhornia crassipes* (Mart.) Solms (Verlaque *et al.*, 2011).



**Fig. 1 :** The families of the exotic plant in Iraq: 1- Araliaceae, 2- Arecaeae, 3- Asteraceae, 4- Brassicaceae, 5- Convolvulaceae, 6- Caprifoliaceae, 7- Casuarinaceae, 8- Cyperaceae, 9- Fabaceae, 10- Hydrocharitaceae, 11- Meliaceae, 12- Myrtaceae, 13- Rhamnaceae, 14- Pinaceae, 15- Poaceae, 16- Polygonaceae, 17- Pontederiaceae

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