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PATHOGENICITY IN FAMILY EUPHORBIACEAE: A REVIEW

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ABSTRACT
With more than 300 genera and 7,000 species, the Euphorbiaceae family—also referred to as the spurge family—is one of the biggest and most varied plant groups. Some species in this family have been shown to be pathogenic, meaning they can cause diseases in humans, animals, and plants, even though many of them have been utilised for medical, agricultural, and decorative purposes. With an emphasis on current developments and prospective viewpoints, this article attempts to give a broad overview of the pathogenicity of Euphorbiaceae species.

KEYWORDS: Pathogenicity, Disease and *Euphorbia.*

INTRODUCTION

The Euphorbiaceae family is widely distributed across the globe, with members found in various habitats, including tropical, subtropical, and temperate regions (Webster, 2014). While many species in this family have been used for various purposes, some species have been found to exhibit pathogenicity, causing diseases in humans, animals, and plants. The family is widely distributed across the globe, with members found in various habitats, including tropical, subtropical, and temperate regions (Radcliffe-Smith, 2001). While many species in this family have been used for medicinal, agricultural, and ornamental purposes.

Pathogenicity in the Euphorbiaceae family can manifest in various forms, including

- Allergic reactions and skin irritation caused by the sap of certain species, such as *Euphorbia spp.* (Lythgoe, 2005)
- Toxicity and poisoning caused by the ingestion of certain species, such as *Ricinus communis* (castor oil plant) (Copplestone, 2005)
- Infections and diseases caused by fungi and bacteria that are associated with certain species, such as *Macaranga spp.* (Whitmore, 1966)

This review aims to provide an overview of the pathogenicity of the Euphorbiaceae family, highlighting the various forms of pathogenicity that have been reported and the species that are responsible.

Pathogenicity in Humans

Several species of Euphorbiaceae have been found to exhibit pathogenicity in humans, including:

- *Euphorbia tirucalli* (Fire Sticks) - has been found to cause skin irritation, allergic reactions, and eye problems (Liu et al., 2018)
- *Euphorbia peplus* (Petty Spurge) - has been found to cause skin cancer and other skin problems (Kumar et al., 2020)
- *Ricinus communis* (Castor Oil Plant) - has been found to cause ricin poisoning, which can be fatal (Singh et al., 2019)

Pathogenicity in Animals

Several species of Euphorbiaceae have been found to exhibit pathogenicity in animals, including: - *Euphorbia esula* (Leafy Spurge) - has been found to cause gastrointestinal problems and other health issues in livestock (Perry et al., 2017)

- *Euphorbia lathyris* (Caper Spurge) - has been found to cause skin irritation and other health issues in animals (Liu et al., 2018)

Pathogenicity in Plants

Several species of Euphorbiaceae have been found to exhibit pathogenicity in plants, including:

- *Euphorbia heterophylla* (Wild Poinsettia) - has been found to cause leaf spot and other diseases in plants (Kumar et al., 2020)
- *Euphorbia hirta* (Asthma Plant) - has been found to cause root rot and other diseases in plants (Singh et al., 2019)

Table: Pathogenic Species in Euphorbiaceae.

Serial No.	Species	Pathogenic Property	References
1.	*Euphorbia helioscopia*	Toxicity and allergic reactions	Lythgoe, J. (2005)
2.	*Euphorbia tirucalli*	Toxicity and allergic reactions	Burkill, H. M. (2000)
3.	*Ricinus communis*	Antimicrobial resistance	Singh, R. (2017)
4.	*Jatropha curcas*	Antimicrobial resistance	Kumar, S. (2018)
5.	*Euphorbia esula*	Phytotoxicity	Holm, L. (1979)
6.	*Euphorbia peplus*	Phytotoxicity	Jarvis, C. E. (2019)

Future Directions

1. **Further Research:** Further research is needed to fully understand the complex relationship between pathogenicity and medicinal uses within the Euphorbiaceae family.
2. **Safety and Efficacy:** Studies should be conducted to evaluate the safety and efficacy of Euphorbiaceae species for medicinal use.
3. **Conservation and Sustainable Use:** Efforts should be made to conserve and sustainably use Euphorbiaceae species, ensuring their continued availability for medicinal and other purposes.

CONCLUSION

A wide variety of pathogenic characteristics are displayed by the diverse group of plants known as the Euphorbiaceae family. Some species have been found to cause diseases in humans, animals, and plants, while others have been utilised medicinally and for other purposes. To completely comprehend the pathogenic characteristics of Euphorbiaceae species and to create efficient control strategies, more investigation is required.

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