

Invasive Plant Species: Threats to Ecosystems and Biodiversity

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Editorial

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Introduction

Invasive plant species are non-native plants that establish, spread rapidly, and cause harm to the environments they invade. Introduced intentionally or accidentally through human activities such as trade, agriculture, and travel, these species often lack natural predators or controls in their new habitats. As a result, they can outcompete native vegetation, disrupt ecosystems, and create serious ecological and economic problems. Understanding invasive plant species is essential for protecting biodiversity and maintaining ecosystem balance.

Discussion

One of the main characteristics of invasive plant species is their ability to grow and reproduce aggressively. Many invasive plants produce large numbers of seeds, grow rapidly, and tolerate a wide range of environmental conditions. This allows them to dominate landscapes and suppress native plant populations by competing for light, water, nutrients, and space. Examples of invasive plants include water hyacinth, kudzu, and Lantana camara, which have transformed ecosystems in many parts of the world.

The ecological impacts of invasive plant species are profound. By displacing native plants, invasives reduce biodiversity and alter habitat structure, affecting insects, birds, and other wildlife that depend on native vegetation for food and shelter. Invasive plants can also modify soil chemistry, nutrient cycling, and hydrological processes. For instance, some species increase soil nitrogen levels, favoring further invasion and making conditions unsuitable for native species.

Invasive plants also pose significant economic and social challenges. They can reduce agricultural productivity by competing with crops and increasing management costs. In rangelands and forests, invasive species lower forage quality, hinder tree regeneration, and increase the risk of wildfires. Control and eradication efforts require substantial financial resources and long-term commitment, placing a burden on governments and land managers.

Management of invasive plant species involves prevention, early detection, and control. Preventive measures include regulating the introduction of non-native species and raising public awareness. Control methods may involve mechanical removal, chemical herbicides, and biological control using natural enemies. Integrated management approaches that combine multiple strategies are often the most effective and environmentally sustainable.

Conclusion

Invasive plant species represent a serious threat to ecosystems, biodiversity, and human livelihoods. Their ability to spread rapidly and alter natural systems highlights the importance of proactive management and scientific research. By understanding the biology and impacts of invasive plants, and by implementing effective prevention and control strategies, societies can reduce their harmful effects and protect native ecosystems for future generations.

References

1. Yarra, Gummadi (2021) Stability indicating RP-UPLC method for simultaneous quantification of Bempedoic acid and Ezetimibe in bulk and pharmaceutical formulations. *Futur J Pharm Sci* 7:209.
2. Vejendla (2021) Characterization of novel stress degradation products of Bempedoic acid and Ezetimibe using UPLC-MS/MS: development and validation of stability-indicating UPLC method. *Future Journal of Pharmaceutical Sciences* 7:234.
3. Dandamudi S, Rangapuram V (2022) Synchronized analysis of Bempedoic acid and Ezetimibe in pure binary mixture and their combined tablets by a new stability indicating RP-UPLC method. *International Journal of Health Sciences* 6: 7278-7290.
4. Sistla R (2005) Development and validation of a reversed-phase HPLC method for the determination of Ezetimibe in pharmaceutical dosage forms. *Journal of Pharmaceutical and Biomedical Analysis* 39: 517-522.
5. Hossein Danafar (2016) High performance liquid chromatographic method for determination of Ezetimibe in pharmaceutical formulation tablets. *Pharm Biomed Res* 2: 38.