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4.1. Functional traits

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References

The utility of crop genetic diversity in maintaining ecosystem services

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Abstract

Few studies have addressed the relationship between genetic diversity and provision of ecosystem services in agroecosystems. In this review, we argue that the contribution of biological diversity to ecosystem functioning in agricultural production systems is variable, but can be substantial, and occurs at the genetic, as well as species, level in arable systems. In particular, we look at the potential benefits of crop genetic diversity in enhancing agroecosystem functioning and the provision of services, both directly and indirectly. Increasing crop genetic diversity has shown to be useful in pest and disease management, and has the potential to enhance pollination services and soil processes in specific situations. By contributing to the long-term stability of agroecosystems and helping to provide continuous biomass cover, crop genetic diversity also aids the ecosystem to sequester carbon, and helps in preventing soil erosion.

Keywords

Agroecosystem; Carbon sequestration; Crop genetic diversity; Ecosystem services; Pest and disease; Pollination