Rhizobium-Linked Nutritional and Phytochemical Changes Under Multitrophic Functional Contexts in Sustainable Food Systems

ABSTRACT

Rhizobia are bacteria that exhibit both endophytic and free-living lifestyles. Endophytic rhizobial strains are widely known to infect leguminous host plants, while some do infect non-legumes. Infection of leguminous roots often results in the formation of root nodules. Associations between rhizobia and host plants may result in beneficial or non-beneficial effects. Such effects are linked to various biochemical changes that have far-reaching implications on relationships between host plants and the dependent multitrophic biodiversity. This paper explores relationships that exist between rhizobia and various plant species. Emphasis is on nutritional and phytochemical changes that occur in rhizobial host plants, and how such changes affect diverse consumers at different trophic levels. The purpose of this paper is to bring into context various aspects of such interactions that could improve knowledge on the application of rhizobia in different fields. The relevance of rhizobia in sustainable food systems is addressed in context.

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