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Abstract

Entomopathogenic fungi have traditionally been assumed to help regulate insect populations. However, some hypocrealean ascomycetes, such as *Beauveria bassiana*, play other, poorly understood ecological roles that might be useful in developing novel strategies for both increased crop production and crop protection. The primary aims of this work were (*a*) to assess endophytic colonization of bread wheat and durum wheat plants by the applied fungus *B. bassiana* strain EABb 04/01-Tip; (*b*) to examine the impact of various *B. bassiana* inoculation methods on growth, yield, phytohormone levels and nutrient uptake in the plants, and (*c*) to quantify mortality of cotton leafworm (*Spodoptera littoralis*) larvae fed with leaves from inoculated plants. Three experiments involving different inoculation methods (viz., 'soil treatment', 'seed dressing' and 'leaf spraying'), and a fourth experiment to assess mortality in *S. littoralis* larvae fed with leaves from endophytically-colonised plants, and were conducted according to a completely randomized design. *Beauveria bassiana* successfully established within, and colonized, bread wheat and