

EFFECT OF THE CO-INOCULATION OF LUCERNE (*MEDICAGO SATIVA* L.) WITH  
*SINORHIZOBIUM MELILOTI* AND *HERBASPIRILLUM FRISINGENSE* IN RELATION  
TO THE INTERACTIONS BETWEEN BACTERIAL STRAIN

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**Abstract:** The aim of the performed experiments was to analyse relationships occurring between endophytic bacteria from the *Herbaspirillum* genus and *Sinorhizobium meliloti* Bp nodule bacteria and to examine the condition of plants subjected to coinoculation with the above-mentioned strains in *in vitro* conditions. In experiments examining the impact of *Herbaspirillum frisingense* on *Sinorhizobium meliloti* BP, the stimulation of growth of inoculated bacteria from the *Sinorhizobium* genus was recorded in all three combinations (48-hour culturing, sediment and supernatant). On the other hand, the examination of interactions between the *Sinorhizobium meliloti* strain and *Herbaspirillum frisingense* strain revealed that in the case of culture and supernatant, an antagonistic action was recorded. Besides, it was found that such coinoculation exerted a beneficial influence on the process of seed lucerne symbiosis and yielding as confirmed by increased numbers of root nodules, higher nitrogenase activity and greater plant mass.