Plant Foodsfor Human Nutrition 47: 257-263,1995.

Effect of nitrogen fixation, nitrogen fertilization and viral infection on yield, tannin and protein contents and in vitro protein digestibility of faba bean

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Received 1 April1994; accepted in revised form 10 December 1994

Key words: Faba bean, Protein digestibility, Rhizobium, Tannin, Viruses

Abstract. A field investigation of two faba bean cultivars (cv.), Agabat and Silaim, showed that bean yellow mosaic virus (BYMV) infection reduced (p~O.OOI) yield (Kg/ha), protein content and in vitro protein digestibility (IVPD) but increased (p~0.05) tannin content (mgflOO ml). Nitrogen fertilization with viral infection significantly reduced yield and IVPD for cv. Silaim and increased (p ~ 0.05) protein and tannin contents. Nitrogen fertilization alone was found to increase (p ~ 0.05) yield, protein and tannin contents but slightly reduced IVPD. Rhizobium inoculation with viral infection significantly decreased yield per unit area, protein content and IVPD, but increased (p~0.05) tannin content. Rhizobium inoculation alone significantly increased (p~O.OOl) yield and tannin content and slightly increased protein content but decreased IVPD. The results indicated that nitrogen fertilization or nitrogen fixation increased yield, protein and tannin contents and decreased IVPD. Viral infection had an adverse effect on yield, protein content and IVPD but had no effect on tannin content.