ELSEVIER

PII: S0308-8146(96)00046-5

*Food Chemistry*, Vol. 59, No. 1, pp. 41–45, 1997

0308-8146/97 $17.00+0.00

# Effect of *Rhizobium* inoculation, organic and chemical fertilizers on proximate composition, *in vitro* protein digestibility, tannin and sulphur content of faba beans

**Elsiddig A. E. Elsheikh & Abdulhafiz A. Elzidany**

*Department of Biochemistry and Soil Science, Faculty of Agriculture, Shambat, Sudan*

(Received 27 October 1995; revised version received 2 January 1996; accepted 2 January 1996)

A field experiment was carried out to investigate the effect of *Rhizobium* inoculation, sulphur, nitrogen and chicken manure on proximate analysis, *in vitro* protein digestibility (IVPD) tannin and sulphur content of faba beans. The results showed that *Rhizobium* inoculation, sulphur, nitrogen and chicken manure treatments significantly ($P \leq 0.05$) increased protein, IVPD and tannin content. Ash, moisture, fat and crude fibre content varied in their response to different fertilizers. The inoculation results were as good as the addition of 40 kg N $ha^{-1}$ and the efficiency of inoculation can be improved by the addition of fertilizers and/or amendments. Fertilization of faba beans with nitrogen, sulphur or chicken manure not only increased yield, but also improved seed nutritional value. Chicken manure is a promising fertilizer, not only because it increases yield but because it has a significant effect in improving seed protein and IVPD. Sulphur treatments significantly ($P \leq 0.05$) increased the protein IVPD, tannin and sulphur content in seeds. 