

## Nutritional and Biochemical Assessment of Field Peas (*Pisum sativum* L.) as a Protein Source in Poultry Diets

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### **Abstract :**

The effects of cultivar on the nutrient profile and protein quality of field pea (*Pisum sativum*) was investigated. A total of 19 samples representing five cultivars of field pea (Santana, Miami, Rex, Crusader and Courier) were analysed for proximate, fibre and carbohydrate components, minerals and amino acids. Starch was the major carbohydrate component in field pea, but it also contained significant quantities of non-starch polysaccharides. The pea protein was deficient in lysine, methionine, cystine and threonine. The results from the protein quality assay showed that there were no differences ( $P>0.05$ ) in protein quality between pea cultivars. Compared to raw field pea, raw soybeans had a lower ( $P<0.05$ ) protein efficiency ratio, and had higher ( $P<0.05$ ) relative pancreatic weights and mortality rate, suggesting that raw soybeans contained high concentrations of anti-nutritional factors, especially protease inhibitors. Mortality of birds fed raw forms of field pea was low, suggesting that field pea do not have significant levels of any anti-nutrients. The relative pancreatic weights of birds fed pea diets also indicate that the level of protease inhibitors in pea cultivars tested were probably low. Overall, the present results demonstrate the nutritional potential of field pea as a protein source in poultry diets.

### **Key Word :**

broilers, nutrient composition, pea, *Pisum sativum*, protein quality

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