

B24 CHANGES IN CHEMICAL COMPOSITION OF WINGED BEAN
(*PSOPHOCARPUS TETRAGONOLOBOUS* L. DC) DURING SEED DEVELOPMENT

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Seeds from three cultivars of winged bean were analysed for proximate composition, soluble sugars, starch, non-starch polysaccharides, minerals, trypsin inhibitor

(TI) activity and *in vitro* digestibility at different development stages starting from 30 days flowering up to maturity.

Accumulation of protein and fat were observed with the development of the seed. A slow increase of crude fibre and ash contents was seen from stage I (30 days after flowering) to stage V (70 days after flowering) of development. Carbohydrates (calculated by difference) showed a steady increase from stage I to stage V.

Total soluble sugars showed a general trend of increase from stage I to stage IV (60 days after flowering) and remained unchanged thereafter. The starch content was determined by two methods. The perchloric acid method indicated mature winged bean seeds to be free of starch, while the enzymatic method gave very low values (0.79-0.86%).

Non-starch polysaccharides decreased slightly with seed maturity. At all development stages, the seeds contained significant amounts of phosphorus and other minerals. The total phosphorus content increased with seed maturity, but a slight reduction in Fe, K, and Ca were observed from stage I to stage V.

30 day-old seeds showed very little TI activity, while 70 day-old seeds showed the highest TI activity. *In vitro* protein digestibilities ranged between 62.7-72.4% and did not show a definite trend of increase or decrease relative to developmental stages.

This work was supported by a grant from International Winged Bean Research Institute.