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DEVELOPMENT OF TRYPSIN INHIBITOR IN THE SEEDS OF WINGED BEAN, *Psophocarpus tetragonolobus* L.

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The development of the trypsin inhibitor/s in the seeds of the pods of 3 winged bean cultivars (SLS_1, SLS_6 and SLS_{11}) was studied.

The protein content of the different developmental stages of the seeds (ovary, 1-5 days old seeds, 6-8 days old seeds, 9-12 days old seeds, 13-20 days old seeds, 21-27 days old seeds and mature seeds) were determined by micro-Kjeldahl method. The protein content in the ovary ranged from 5.30-6.10%. Protein synthesis accelerated as the age of the seeds advanced. The range of protein content in 21-27 days old seeds, is 6.64-9.62%. In the mature seeds, the protein values range from 29.81-39.37%.

The amount of trypsin inhibitor/s in the mature seeds varies among the cultivars (4.89×10^4-2.35×10^5 trypsin inhibitor units/g. protein); The ovaries are devoid of trypsin inhibitor/s. In SLS_1 and SLS_6 cultivars, trypsin inhibitor/s appears only at 21-27 days old seed; whereas in SLS_{11} cultivars trypsin inhibitor activity is exhibited at an earlier stage (13-20 days) of seed development.

Whereas it had been confirmed in earlier reports, that the mature seeds contain a significant amount of trypsin inhibitor activity, it is shown from the present study that the trypsin inhibitory activity in the 21-27 days old seed is also of considerable significance.

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References :

1. Cerny, K., Kordylas, M., Pospisil, F., Svabensky, O. & Zajic B. 1971—*Brit. J. Nutr.* **26**, 293.
2. Hettiarachchy, N. S., Herath, H. M. W. & Wikramanayake, T. W. 1978—*Proc. XIth International Congress Nutr.* Brazil. (in press)