Study of the Proteolytic Activity of the Tropical Legume *Crotalaria spectabilis*

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The characterization of legume proteases contributes to the understanding of the physiology of plants and their interaction with the environment. Thirteen extracts from various parts of *Crotalaria spectabilis* were made using different extraction systems. The highest protein content was found in seeds, and the most pronounced proteolytic activity was observed in leaf extracts, with an optimal pH value in the alkaline range. Proteases in extracts from roots, stems, and flowers were active in various pH ranges. Proteases in all extracts were maximally active between 30 °C and 60 °C and were thermostable (24 h, 60 °C). Hemoglobin, bovine serum albumin, casein, and gelatin were hydrolyzed by *C. spectabilis* extracts in different ways. The highest serine protease activity was found in leaves. Seeds contained high levels of serine proteases and low levels of cysteine proteases. Flowers, roots, and stems contained different levels of serine, aspartic, and metalloproteases, respectively. The proteolytic activities in extracts were modulated by cations and oxidants to various degrees. *C. spectabilis* proteases are differentially expressed in distinctive organs, and their stability against heat and oxidants makes this plant an important source of stable proteases.

Key words: Crotalaria spectabilis, Proteolytic Activity