

A Study of the Amino-Acid Composition of the Pastures of Bombay

Knowledge of the nitrogen metabolism of plants is of importance for a proper understanding of the growth and development of plants themselves and for their evaluation as food for grazing animals. Therefore, an attempt has been made to investigate the amino-acid composition of a few pasture plants of Bombay. They are (1) *Themeda triandra*, (2) *Pseudanthistiria heteroclita*, (3) *Ischaemum ciliare*, (4) *Dactyloctenium aegyptium*, (5) *Heteropogon contortus*, (6) *Thelepogon elegans*, (all belonging to gramineae); (7) *Zornia diphylla*, (8) *Smithia sensitiva* (leguminosae). Circular paper chromatography techniques¹⁾ have been employed for this purpose.

By running the chromatogram the following sixteen acids were identified in the grasses mentioned above. They are: leucine-isoleucine, phenyl alanine, valine, methionine, tyrosine, proline, alanine, glutamic acid, threonine, glycine, serine, aspartic acid, arginine, histidine, lysine, and cystine.

In almost all the hydrolysates of the grasses the bands corresponding to phenyl-alanine, proline and tyrosine were faint, while those of glutamic and aspartic acids, alanine and leucines were intense. The legumes like *Zornia diphylla* and *Smithia sensitiva* showed all the sixteen amino-acids like the grasses but unlike the latter, except for phenyl alanine and tyrosine, all the bands of the amino-acids were intense. Our results also reveal that in both grasses and legumes there is a striking correspondence in the amino acid content of the hydrolysate. They do not show any unusual amino acids and the pattern is practically the same in both. This confirms the earlier observations made by other authors²⁾.

It is interesting to point out in this connection that when equal aliquots of the hydrolysates of the grasses and legumes were spotted, the individual bands of the amino-acids of the legumes were considerably more pronounced than those of the former. This is obviously because the legumes have more nitrogen in their tissue and therefore contain more concentration of the individual amino acids.

In conclusion it may be said that altogether sixteen amino-acids are present in the grasses and legumes investigated and the amino-acid pattern is the same throughout.

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