

## AMINO ACID PROFILES OF ANAEROBIC RUMEN FUNGI

S.K. GULATI, J.R. ASHES, P.J. CONNELL and G.L.R. GORDON

The three common anaerobic rumen fungi (ARF) that have been isolated from sheep are *Neocallimastix* (LM), *Sphaeromonas* (NM) and *Piromonas* (SM) species (Orpin 1977). Rumen fungi are high in protein and the amino acid (AA) composition of isolates of LM and SM has been reported by Kemp et al. (1985). Improved and more sensitive techniques have been developed by Connell et al. (1987) and the amino acid composition of LM1 has been reported, allowing a more accurate quantification of the sulphur containing AA. Here we report the AA composition (% mol) of isolates of NM and SM using these improved techniques.

Amino Acid	<i>Sphaeromonas</i> sp NM1*	<i>Piromonas</i> sp SM1*
½ Cystine	2.02 ± 0.15	1.96 ± 0.11
Aspartic acid	11.27 ± 0.26	10.76 ± 0.39
Methionine	2.01 ± 0.18	2.27 ± 0.23
Threonine	5.33 ± 0.21	5.38 ± 0.13
Serine	5.77 ± 0.17	5.51 ± 0.15
Glutamic acid	11.71 ± 0.19	11.33 ± 0.26
Proline	3.72 ± 0.20	2.84 ± 0.30
Glycine	8.58 ± 0.16	9.00 ± 0.49
Alanine	8.12 ± 0.22	8.49 ± 0.20
Valine	6.68 ± 0.26	7.38 ± 0.19
Isoleucine	5.67 ± 0.10	5.67 ± 0.13
Leucine	7.04 ± 0.14	7.20 ± 0.19
Tyrosine	2.80 ± 0.20	2.91 ± 0.22
Phenylalanine	4.81 ± 0.15	4.53 ± 0.18
Lysine	8.11 ± 0.19	7.77 ± 0.21
Histidine	1.73 ± 0.05	1.63 ± 0.06
Arginine	3.53 ± 0.09	3.43 ± 0.15

\* Mean ± SE of six determinations

The AA composition of the two fungi NM1 and SM1 are similar and comparable to those previously found for several isolates of LM (Kemp et al. 1985; Connell et al. 1987), except for variations in proline. Proline was found to be lower for SM than reported by Kemp et al. (1985). The similarity of the AA composition of these fungi is to be expected from consideration of their genomic base composition (Brownlee 1989). Gulati et al. (1989) have shown that the AA from rumen fungi are of good quality and highly digestible in sheep. Enhanced ARF populations may have important implications for the efficiency of sheep production from low quality pastures.

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