



AMINO ACID PROFILES OF FIVE COMMONLY CONSUMED INSECTS IN
SOUTHWESTERN NIGERIA

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ABSTRACT

The amino acid (AA) content of *Apis mellifera* (AB), *Macrotermes bellicosus* (WT), *Imbrasia belina* (MoW), *Oryctes boas* larva (SB), and *Sitophilus zeamais* (MaW) were investigated. The total amino acid values were high at (g/100g crude protein, cp): *A. mellifera* (89.6), *M. bellicosus* (89.3), *I. belina* (89.7), *O. boas* larva (95.6) and *S. zeamais* (89.0). Glutamic acid (Glu) had the highest concentration in all the samples ranging from 12.3-15.0 g/100g crude protein, cp. The least concentrated amino acid was tryptophan (Trp) (1.22-1.33 g/100g cp) across board. Leucine (7.74-8.42 g/100g cp) was the most abundant essential amino acid (EAA) in all. The total essential amino acid (TEAA) (with His) ranged between 44.9-46.0 g/100g cp. Leu/Ile range was 1.09-1.47. P-PER₁ and P-PER₂ ranges were 2.73-2.99 and 2.65-2.96 respectively. The essential amino acid index (EAAI) range was 36.1-38.7 while the biological value (BV) range was 27.6-30.5. The isoelectric point (pI) range was 5.15-5.54, showing the samples to be in acidic medium of the pH range. In amino acid scores based on whole hen's egg, serine (Ser) had the least scores range (0.500-0.613). On provisional amino acid scoring pattern, the limiting AA was threonine (Thr) in *A. mellifera* (0.864), *M. bellicosus* (0.820) and *S. zeamais* (0.920); lysine (Lys) in *I. belina* (0.952); valine (Val) in *O. boas* larva (0.848). On pre-school child requirements, Lys (0.903-0.941) was limiting except in *O. boas* where all the parameters were higher than 100% requirement. Generally, no significant difference existed among the samples in most of the parameters determined.