

PE9.03 Protein quality of selected high protein food (meat, casein, soy protein isolate and tempeh) using rat bio-assay 7.00

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Protein efficiency ratio (PER) and protein digestibility are important parameters used in protein quality determination. Protein nutritive values of selected protein sources: buffalo meat, casein, soy protein isolate, and tempeh together with sodium caseinate as a reference formulation were evaluated. Determination of proximate analysis, protein quality and protein digestibility were monitored. Procedures for evaluation included protein efficiency ratio (PER) using the rat bioassay and in vivo apparent digestibility. The rats fed with buffalo meat consumed (356.98g±34.31) had the highest mean in increased body weight (102.73g±8.95) while rats fed with tempeh consumed (200.37g±36.26) had the lowest mean in increased body weight (16.34g±9.11). Although the mean in body weight

gained showed significant differences between all treatments ($p < 0.05$) but for total food intake there was no significant difference found between casein and soy protein isolate. For PER value, meat has the highest value (2.99), followed by sodium caseinate (2.41), casein (1.93), soy protein isolate (1.52) and tempeh (1.10). The PER value for meat (2.99) is higher than sodium caseinate (2.41) while the rest of the treatment were comparatively lower than sodium caseinate. For the in vivo apparent protein digestibility, tempeh has the highest value (91.41%±3.76), followed by casein (91.34%±3.15), meat (90.79%±1.44), soy protein isolate (89.52%±2.96) and sodium caseinate (89.47%±2.31).