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ORAL **AS08**

MINERAL COMPOSITION, PHYSICAL PROPERTIES AND NUTRITIVE VALUES OF LOCAL ROCK FLOURS FOR FEEDING OF LAYING QUAILS

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West Sumatra province as a part of Bukit Barisan cluster abounds with natural rock deposits in the form of mountains and hills, which are potentially exploited and used for poultry feeding. The present study was aimed to determine mineral composition, physical properties and nutritive values of rock flours derived from three different sub-districts of Palupuh, Halaban, and Kamang. Rock flour samples were collected from local mining companies for analysis of mineral content (Ca, P, Mg, K, Na, Mn, Fe, Cu, Zn, Mn, Se) and physical properties (bulk density, angle of response, and particle size). The nutritive values of rock flours were also evaluated by mixing 2.5-3% of the rock flour with a basal diet that was fed to 160 laying quails. There were four dietary treatments: basal diet (control) (P0), basal diet supplemented either with 3% Palupuh' rock flour (P1), 2.5% Halaban' rock flour (P2), or 2.5% Kamang rock flour (P3). The quails were divided into 16 experimental units (@ 10 birds), each treatment consisted of 4 replications. Parameters measured included: feed intake, egg production, FCR, eggshell quality, and tibia bone mass and mineralization. Data were assigned to one-way variance analysis in completely randomized block design of 4x4. Results showed that rock flours had Ca content ranged between 26 and 40%. Rock flours had also high content of Fe, Mn and Se. Bulk density ranged between 1.1 and 1.6 g/ml. Rock flours were dominated by small particle size of < 500 µm. There was no significant effect of rock flour supplementation on feed intake, eggshell quality and tibia bone mass. Supplementation of diets with rock flours yielded better egg production, FCR and tibia bone mineralization than seen for control. In conclusion, the use of local rock flours in laying quail rations had positive effects on egg production, feed utilization efficiency, and bone mineralization.

Keywords**:** *rock flour, local mineral, mineral supplement, laying quail nutrition*

Area of Discipline: Animal Science / Animal Production