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**Title**: Effects of Carbohydrate-Rich Alternative Feedstuffs on Growth, Survival, Body Composition, Hematology, and Nonspecific Immune Response of Black Pacu, *Colossoma macropomum*, and Red Pacu, *Piaractus brachypomus*

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**Abstract:** To facilitate economical culture of black pacu, *Colossoma macropomum*, and red pacu, *Piaractus brachypomus*, in the Amazon region of South America, we assessed locally available alternative energy sources for practical diets. We tested the effects of control diets (containing wheat products) versus diets with different Amazonian feedstuffs (yucca, *Manihot sculenta*, plantain, *Musa paradisiaca*, or pijuayo, *Bactris gasipaes*) on the performance of the pacus in three feeding trials. Black pacu (22.5 6 0.03 g; Trial 1) or red pacu (2.56 6 0.01 g; Trial 2) were fed diets containing 30% wheat bran (control) or cooked or uncooked yucca, plantain, or pijuayo for 12 wk. In Trial 3, larger black pacu (86.9 6 6.4 g) were grown to market size in 24 wk on similar diets. Weight gain, feed conversion, survival, alternative complement activity, and lysozyme were similar among diets. Hepatosomatic index, liver glycogen, and dry matter were affected by diet in Trials 1 and 2, but effects were not consistent among trials. In Trial 3, protein efficiency ratio was lower in

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fish fed the diet containing wheat middlings. However, relative to wheat bran or wheat middlings, all feedstuffs tested were effective energy sources for juvenile black pacu and red pacu.

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