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July 1967

Effects of Dietary Safflower Oil or Hydrogenated Coconut Oil on Growth Rate and on Some Blood and Tissue Components of Pigs fed a Fat-free Diet

G. M. Babatunde

New York State College, Ithaca

W. G. Pond

New York State College, Ithaca

L. Krook

New York State College, Ithaca

L. Dale Van Vleck

University of Nebraska-Lincoln, dvan-vleck1@unl.edu

E. F. Walker Jr.

New York State College, Ithaca

See next page for additional authors

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Babatunde, G. M.; Pond, W. G.; Krook, L.; Van Vleck, L. Dale; Walker, E. F. Jr.; and Chapman, P., "Effects of Dietary Safflower Oil or Hydrogenated Coconut Oil on Growth Rate and on Some Blood and Tissue Components of Pigs fed a Fat-free Diet" (1967). *Faculty Papers and Publications in Animal Science*. 174. <https://digitalcommons.unl.edu/animalscifacpub/174>

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Authors

G. M. Babatunde, W. G. Pond, L. Krook, L. Dale Van Vleck, E. F. Walker Jr., and P. Chapman

From *The Journal of Nutrition* Authors' Statement and Copyright Release Form (p. 3):

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Effects of Dietary Safflower Oil or Hydrogenated Coconut Oil on Growth Rate and on Some Blood and Tissue Components of Pigs fed a Fat-free Diet

G. M. Babatunde, W. G. Pond, L. Krook, L. D. Van Vleck, E. F. Walker, Jr., and P. Chapman

Department of Animal Science, New York State College of Agriculture and New York State College of Veterinary Medicine, Cornell University, Ithaca, New York

The effects of feeding diets containing no fat, 3% hydrogenated coconut oil (HCO) or graded levels (0.1, 0.5, 1.0 or 3%) of safflower oil (SO) on serum cholesterol, lipids and protein level; on total heart and liver cholesterol and lipid level and on growth rate and skin condition were studied in weanling Yorkshire and Yorkshire x Hampshire pigs. Pigs fed the fat-free diet for 21 weeks developed severe skin lesions not observed in pigs fed HCO diets. Highly significant elevation of serum, liver and heart lipid and liver cholesterol, and a highly significant depression of total serum protein were observed with the feeding of HCO or fat-free diets. Serum cholesterol was significantly increased by HCO as compared with the fat-free diet or diets containing SO during the repletion period. Total heart cholesterol, growth rate and erythrocyte fragility were unaffected by diets. It is concluded that growth rate is not adversely affected in the pig by fat-free diets and that HCO does not produce skin lesions in the pig characteristic of fatty acid deficiency. Of all the correlation coefficients analyzed, only the serum cholesterol and total serum lipids were consistently highly significantly correlated, while serum protein was significantly inversely related to the total liver lipid.

Manuscript submitted January 20, 1967.

Published in *Journal of Nutrition* Vol. 92 No. 3 July 1967, pp. 293-302
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Online at: <http://jn.nutrition.org/cgi/reprint/92/3/293>