

## Albedo flour from *Citrus sinensis* (L.) Osbeck: Anti-obesity effects

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Albedo from *Citrus sinensis* (L.) Osbek is an agro-industrial residue, obtained from waste generated in the processing of concentrated orange juice manufacturing, unexplored on its nutritional potential. Obesity is one of the major public health problems in the world, affecting all age groups and being currently considered the main risk factor for the development of metabolic disorders and cardiovascular diseases, such as diabetes, dyslipidemia, atherosclerosis, hypertension and stroke. Changes in lifestyle, including changes in feeding behavior, such as increased caloric intake and decreased fiber intake, modify the energy balance and lipid storage in adipocytes. This study was performed in order to investigate the nutritional composition of albedo flour and its effects on body weight, food intake and serum parameters in rats with high-fat diet-induced obesity. For this, high-fat diet (42% fat, HFD) and HFD with 25% albedo flour addition were used to feed adult Wistar rats for 60 days. The nutritional composition of albedo flour revealed a high fiber content and low energy. Rats fed with albedo showed increased water consumption with reduction in caloric intake, weight, deposits of white adipose tissue and serum triglycerides, compared to the control group and similar to that treated with sibutramine. Together, the results indicate the beneficial metabolic effects of albedo flour from *Citrus sinensis* (L.) Osbek, suggesting the efficiency of foods enriched with albedo as a natural anti-obesity therapy.

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## Comparative studies on effects of seed size and sowing depth on the vegetative growth of *Telfairia occidentalis* (Hook. f.)

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A split plot experiment based on a randomized complete block design with 3 replications was used to study the effect of three (small=10.01–10.05 g, medium=22.25–22.30 g, and large=32.25–33.00 g) seed sizes and four (3 cm, 6 cm, 9 cm and 12 cm) sowing depths on the germination and growth of *Telfairia occidentalis* at Uturu, Abia State, Nigeria. Small and large seeds had significantly the highest and least seedling emergence respectively. Small seeds gave significantly the highest leaf number per plant, leaf area, relative growth rate and leaf, stem and dry weights. Large seeds had statistically the least result of the above parameters. However, large seeds had the highest ( $P \leq 0.05$ ) leaf area ratio. Seeds sown at 3 cm and 6 cm depths emerged faster than seeds sown at 9 cm and 12 cm depths. Seeds sown at 3 cm depths had the highest significant percentage germination, plant heights, and leaf area. In terms of plant biomass, 12 cm and 6 cm sowing depths gave significantly the highest and least leaf and stem dry weights respectively. At the 12<sup>th</sup> week of the study 3 cm and 12 cm gave significantly the highest and least relative growth rates respectively. In terms of seed size and sowing depths treatment interactions, large seeds in all the sowing depths had the highest ( $P \leq 0.05$ ) root shoot ratios. Small and large seeds in all the sowing depths gave significantly and respectively the highest and least relative growth rates, leaf number, stem and leaf dry weights. Small seeds at the various sowing depths also had significantly the highest plant heights. This study recommends the use of small seed sizes (10 g) and 3 cm sowing depth for production of *T. occidentalis*.

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