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BOOK OF ABSTRACTS

Variation in Fatty Acids of Palm Oil from Brazilian Tropical Savanna

Rosemar Antoniassi, Embrapa Food Technology, Avenida das Américas, 29501, Rio de Janeiro, RJ, Brazil, 23020,-470, Nilton T. V. Junqueira, Embrapa Cerrados, Planaltina, DF, Brazil, Jorge C. A. Antonini, Embrapa Cerrados, Gustavo A. Campos, Embrapa Fisheries, Aquaculture and Agricultural System, Palmas, TO, Brazil, Marcelo F. Braga, Embrapa Cerrados, Allan E. Wilhelm, Embrapa Food Technology, Adelia F. Faria-Machado, Embrapa Food Technology, Humberto Ribeiro Bizzo, Embrapa Food Technology

Palm tree (*Elaeis guineensis*) is grown in tropical areas in Brazil where rain is abundant throughout the year. The expansion of the palm tree area is possible without any threat to the rainforest and the Brazilian Agricultural Research Corporation (Embrapa) has been evaluating other regions of the country under irrigation. Four varieties of palm tree were grown in the city of Porto Nacional (TO) and in the city of Planaltina (DF), Brazil. The planting was done in the disposition of equal sided triangle of nine meters. Cultural treatments were made according to the crop agronomic recommendations. Irrigation was processed when the depletion of total available water in the soil reached the value of 40%, in the profile of 0.4 meter, and with water amount required to return the soil to field capacity. The mean maximum and minimum temperatures in Porto Nacional were 32.9 and 21°C and at an altitude of 238 m while in Planaltina were 28, 15°C and 1050 m, respectively. After harvest the fruits were frozen, the pulp freeze-dried and the kernel dried in an air oven at 60°C. The oil was extracted in a Soxhlet apparatus. The analysis of fatty acid composition was carried out by GC-FID. There were significant differences among varieties and locations for palm oil and palm kernel oil ($p<0.05$). For the palm oil, the palmitic acid (C16:0) was higher for Porto Nacional whereas linoleic acid (C18:2) was higher for Planaltina ($p<0.05$). The C16:0 varied from 31 to 38% and C18:2 from 9 to 12%. No difference for location was observed for C18:1 (oleic acid) but there was difference for varieties, ranging from 44 to 46% ($p<0.05$). For palm kernel oil there were significant differences for C12:0 and C18:1 among varieties, but linoleic acid was higher for Planaltina ($p<0.05$). Lauric (C12:0), oleic and linoleic acids varied from 38 to 48%, 15 to 23% and 3 to 5%, respectively. The polyunsaturated fatty acid content of palm oil and palm kernel oil was lower for the location with higher temperature.