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Abstract

Seeds from two varieties of mahlab, black and white mahlab were obtained from the local market Khartoum North, Khartoum State. They were then subjected to different tests for chemical analysis, and the extracted oil was subjected to various tests for physico-chemical analysis according to the standard methods.

Hundred seed weights of the two mahlab varieties were found to be (1.88g) , (4.13g) in black and white mahlab, moisture content (6.03%), (6.22%), ash content (2.81%), (2.12%) , protein (12%) , (28%) , (fiber 2.5%) , (1.87%) , oil content was found to be 13.15%, 30.95% in black and white mahlab seeds respectively. Saponification values in the two varieties were varied from 184.23 in white mahlab to 180.3 in black mahlab. Refractive index was found to be (1.4700), (1.4975), Specific Gravity (0.8167), (0.8511), free fatty acids (3.65%), (3.93%), acid value (7.30), (7.86) mg KOH/g, peroxide value (4.43), (2.54) meq O₂ / Kg oil and Unsaponifiable matter (0.66%), (0.92%) in black and white mahlab oil respectively. The major fatty acids were found to be Palmitic (4.5%), Stearic (16.0%), Oleic (48.3%) and Linoleic (31.6%) in black mahlab oil, while in white mahlab oil was found to be as follows palmitic (5.7%), oleic (46%), and linoleic acid (48%).

Protein content was found to be 21 and 28% in black and white seeds respectively. The total amounts of amino acids

were found to be 12.55 and 18.38 g / 16 g N in black and white seeds respectively. The percentage of essential amino acids in black mahlab seeds was 39.5% and in white mahlab seeds was 40.5%.

From the sensory evaluation analysis of the two mahlab oils, the results revealed that there was a significant difference ($P \leq 0.05$) between the average scores for color, odor and taste of the two mahlab oils and that white mahlab oil seemed to be more acceptable compared to the black mahlab oil by panelists.

الخلاصة

دراسة صفات بذور نوعين من المحلب، المحلب الأسود والمحلب الأبيض لتحديد نسب كل من الزيت والأحماض الدهنية والأحماض الأمينية.

جميع الاختبارات التي أجريت على العينتين تمت بالطرق القياسية، لقد تم تقدير تقريبي لوزن المئة حبة فكان 1.88 g لبذور المحلب الأسود و 4.13 g لبذور المحلب الأبيض. تم تقدير تقريبي للمحتوى الكيميائي للبذور والذي شمل: تقدير المحتوى الرطوبي الذي وجد 6.03%، 6.22%، الرماد 2.81%، 2.12%، الألياف 2.5%، 1.87%، البروتين 21%، 28%، الزيت 13.15%، 30.95% لكل من بذور المحلب الأسود والأبيض على التوالي.

وقد اظهرت نتائج التحليل الفيزيوكيميائي للزيتين النتائج التالية: معامل الإنكسار 1.47001، 1.4975 الكثافة النوعية 0.8176، 0.8511 لكل من المحلب الأسود والأبيض على التوالي. الأحماض الدهنية الحرة 3.65%، 3.93%، قيمة الحامض 7.30، 7.86، قيمة البيروكسيد 4.43، 2.54، رقم التصبن 180.3، 184.23 والمواد غير القابلة للتصبن 0.66، 0.92.

الأحماض الدهنية التي وجدت بالزيتين كانت كما يلي: بالمتيك 4.5% استياريك 16% أوليك 48.3% لينوليك 31.6% في زيت المحلب الأسود بينما وجدت في زيت المحلب الأبيض على هذا النحو بالمتيك 5.7% أوليك 46% لينوليك 48%.

تحليل الأحماض الأمينية اظهر أن بروتين البذرتين يختلفان في كمية الأحماض الأمينية الأساسية والتي تراوحت اعلى نسبة لها بين 43.5% في المحلب الأسود و 34.8% في الأبيض.

نتائج التحليل الإحصائي للتقييم الحسى للزيتين اظهرت فروق معنوية ($P \leq 0.05$) أن زيت المحلب الأبيض مقبول أكثر من الأسود.