



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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**Effectiveness of Using Citrus Peel Extracts as
Antibacterial in Some Meat Products**

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Effectiveness of Using Citrus peel extracts as Antibacterial in Some meat products

ABSTRACT

Healthier food products have become a key target for the food industry. Consumer's demands for healthier meat and meat products are rapidly increasing world-wide. This study aimed assessed chemical composition and antimicrobial activities of Sweet Orange peel (*Citrus sinensis*) and Lemon peel (*Citrus limon*) essential oils (OE and LE) with its preservative effect against pathogenic bacteria by the determination of agar diffusion test and the minimum inhibitory concentrations (MICs). Chemical composition by using Gas chromatography-mass spectrometry analysis identified different chemical constituents in Orange peel and Lemon peel essential oils, which Limonene was the major constituent. In order to improve the functional value of meat product, application of orange or lemon peel-essential oil (OPE or LPE) as promising cheap natural antimicrobial and antioxidant in beef burger was carried out. Chemical composition, quality properties and microbial analysis of the suggested beef burger as affected by adding OPE or LPE during freezing storage at -18 °C for 90 days were studied. The addition of 0.5, 1 and 1.5 % of OE and LE to the beef burger caused a reduction in thiobarbituric acid reactive substances, peroxide value, total volatile basic nitrogen and microbial count.

Sensory evaluation of beef burger treated with OPE and LPE showed that they were organoleptically acceptable in terms of color, taste, odour and tenderness, that in concentrations 0.5 and 1 %, while the high concentration 1.5% was less acceptable, but it was not rejected at all.

Keywords: Orange, lemon essential oil, Antimicrobial, Antioxidant, Beef burger.

المستخلص العربى


فاعلية استخدام مستخلصات قشور الموالح كمضادات للبيكتريا فى بعض منتجات اللحوم

أصبحت المنتجات الغذائية الصحية هدفًا رئيسيًا لصناعة الأغذية. تتزايد طلبات المستهلكين على منتجات اللحوم واللحوم الصحية بشكل سريع في جميع أنحاء العالم. هدفت هذه الدراسة الى تقييم التركيب الكيميائي للزيوت العطرية في البرتقال الحلو (*Citrus sinensis*) والليمون (*Citrus limon*) مع تأثيرها المضاد للبيكتريا المسببة للأمراض باستخدام اختبار الانتشار بآجار (Agar Diffusion Test) والحد الأدنى من تركيزات المثبطات (MICs). حيث حدد التركيب الكيميائي باستخدام التحليل الكروماتوجرافى للغاز (GC-MS) مكونات كيميائية مختلفة للزيوت العطرية (البرتقال والليمون) و كان الليمونين المكون الرئيسى لها. ولتحسين القيمة الوظيفية لمنتج اللحوم، تم اضافة زيت البرتقال والليمون العطري كمضادات للميكروبات وكمضادات أكسدة طبيعية ورخيصة في برجر اللحم البقري. حيث تمت دراسة التركيب الكيميائي وخصائص الجودة والتحليل الميكروبي لبرجر اللحم البقري المقترح كما تم دراسة التغير الحادث في هذه الخصائص أثناء التخزين بالتجميد عند -18 درجة مئوية لمدة 90 يومًا. أدت إضافة الزيوت العطرية للبرتقال والليمون بنسب 0.5 و 1 و 1.5% إلى برجر اللحم البقري إلى انخفاض كلا من المواد المتفاعلة لحمض الثيوباربيتوريك، وقيمة البيروكسيد، والمواد النيتروجينية المتطايرة وعدد الميكروبات الكلية والممرضة. أظهر التقييم الحسي لبرجر اللحم البقري المعامل بالزيوت العطرية للبرتقال والليمون أنه مقبول حسيًا من حيث اللون والطعم والرائحة والقوام، وذلك بتركيزات 0.5 و 1%، بينما كان التركيز المرتفع 1.5% أقل قبولًا، ولكن لم يتم رفضه. على الاطلاق.

الكلمات الداله: الزيت العطري لليمون، الزيت العطري للبرتقال، مضادات الميكروبات الطبيعية، مضادات الأكسدة الطبيعية، برجر اللحم.

APPENDIX NO (1)

Sensory evaluation for burger (1)

Samples 						
Factors	Degree	+	++	+++	+++ +	+++ ++
Colour	10					
Odor	10					
Taste	10					
Texture	10					
Overall acceptable	40					

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