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식품위해성균, 피부사상균 및 식물성 병원균에 대한 산초유의 항균 활성 및 항산화 활성

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Antimicrobial Activity against Food-hazardous Microorganisms, Dermatophytes, and Pytopathogens and Antioxidative Activity of Sancho Oil

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ABSTRACT

Background: Although Sancho (*Zanthoxylum schinifolium* Siebold & Zucc) oil has traditionally been used for its antibiotics properties, there is currently a lack of scientific evidence regarding its biological activities. In this study, we investigated the antimicrobial and antioxidant activities of Sancho oil against food-hazardous microorganisms, phytopathogens, and dermatophytes.
Methods and Results: We investiated the antimicrobial activity of Sancho oil against 11 food-hazardous microorganisms, nine phytopathogens, and six dermatophytes. The Sancho oil was found to show the strongest antibacterial activity against *Shigella flexneri* and *Listeria* spp. Sancho oil also showed high antifungal activity against plant pathogens, particularly *Fusarium oxysporum,* and showed antimicrobial activity against dermatophytes such as *Trichophyton rubrum*, *Microsporum canis* and *Candida albicans*. The antioxidant activity of Sancho oil was measured using the DPPH method, and was found to be stronger than that of unrefined oil. Moreover, this activity increased with increasing oil concentration.
Conclusions: We found that Sancho oil showed differing antimicrobial activities against food-hazardous microorganisms, dermatophytes, and plant pathogens. The antimicrobial activity spectrum of Sancho oil was not broad and varied among microbial strains. On the basis of our findings, we consider that Sancho oil could be used an antibacterial material for food-borne *S. flexneri* and *Listeria* spp., a biopesticide for *Fusarium* spp., and a treatment for dermatophytes such as *T. rubrum*.

Key Words: Sancho Oil, Food-hazardous Microorganisms, Dermatophytes, Phytopathogenic Microorganisms

INTRODUCTION

Sancho (*Zanthoxylum schinifolium* Siebold & Zucc) is a deciduous shrub belonging to the Rutaceae. It grows in the mid-mountain and valley and is 3 m - 5 m high. Young leaves and berries are used as spices because of their unique fragrance and acidity, and have long been used in the private sector as traditional spices and medicinal plants (Lee *et al*., 2003).

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