The Benefits of Ginger on the Skin

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Introduction

Ginger is an herb that has been linked to numerous health benefits, including for skin. Due to the components of Ginger, it can be used internally to assist in the healing of things like inflammation, gastrointestinal distress, and arthritis. As a result, nowadays not only is Ginger used in the kitchen, but in cosmetics, and even in pharmaceuticals. However, it is also beneficial to research how Ginger can aid in topical use. As a result, after further research, it has been noted that the anti-inflammatory properties of Ginger root extract aids in skin barrier repairing after sun damage and acne related issues like acne scars and dark spots.

Figure 1. The spice we used in our experiment, was ginger in oil form.

Materials and Methods

Methods:

This experiment utilized Ginger (*Zingiber officinale*) 100% Pure and Natural Therapeutic Grade Essential Oil was purchased from Huiqili Supply Chain Technology Co. Ltd. (Guangzhou, China). The bacterial strains of the ginger were tested against *Escherichia coli* (*E. Coli*) and *Staphylococcus aureus* (*S. aureus)*. All the materials used were BBL Blank Paper Discs (6mm) that were purchased from Benton, Dickinson and Company (Sparks, Maryland, USA) and were sterilized by autoclave. Ciprofloxacin 5mg discs were purchased from Oxoid Ltd. (UK). Tryptic Soy Broth was purchased from Sigma Aldrich (St. Louis, Missouri, USA). Muller-Hinton Agar was purchased from Sigma Aldrich (St. Louis, Missouri, USA). Sodium Chloride was purchased from Carolina Biologicals (Burlington, North Carolina, USA).

Procedure:

In Period 1 of the experiment, each bacterial species was cultured individually in test tubes containing 5 ml of Tryptic-Soy broth (TSA) for 16 hours at 37 ° C. Bacteria were then transferred using a sterile swab from the broth culture to two Mueller Hinton agar plate, ensuring the creation of a dense bacterial lawn. The plates were prepared for both *E. coli* and *S. aureus.* Subsequently, four sterile 6mm blank paper discs were placed on each bacterial lawn using sterile forceps. 10 µl of sterile water was added to one disc on each plate, while 10 µl of spice essential oil was added to each of the remaining three discs on each plate. Additionally, a Ciprofloxacin 5 µg disc was placed on each bacterial lawn as a positive control for growth inhibition. Following incubation at 37° C for 5 days. In Period 2. the plates were examined for zones of inhibition, and the diameter of each zone was measured in millimeters. If direct measurement was not feasible, the radius was measured and multiplied by 2. The recorded results are presented in the graphs.

Finding 1

Figure 2. On the left side is the sample with *E. coli* and on the right side is the sample with *S. aureus*

Finding 2

Table 1 shows the data collected from each bacterial plate and the averages of the zones of inhibition measured in mm.

Disk	S. aureus	E. coli
Water	0	0
CIP-5	40	5
Ginger	25	10

Table 1

Finding 3

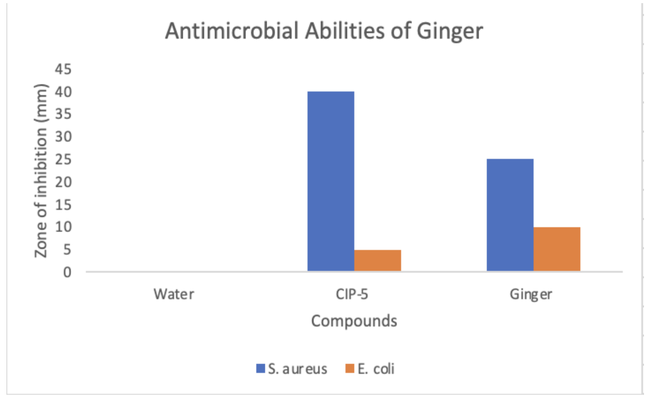

Figure 3: Zones of inhibition for water, Ciprofloxacin, and ginger essential oil.

Conclusions

Results from this experiment, help show the antimicrobial effects of ginger. A greater zone of inhibition on the *S. aureus* plate showed sensitivity for ginger. *E. coli* exhibited almost 50% less inhibition. Although these findings were telling, more research is needed to confirm these findings as the *S. aureus* lawn had sparse growth. Scientists working in the field are experimenting with these questions. The future is bright for the use of ginger as a topical treatment.

Literature Cited

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