BIOACTIVITY OF RAPHANUS SATIVUS EXTRACT OF SOME PATHOGENIC STRAINS

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ABSTRACT

In the present study, the antimicrobial activities (%AA) of the water extract for *Raphanus sativus* against number of microorganisms (gram positive bacteria *staphylococcus aureus*) and gram negative bacteria *Pseudomonas aeruginosa* and *shigella flyxnerii*) and candida *albicans* fungi. The Antimicrobial activity of the extract was evaluated against bacteria. Using disc diffusion method. The heat water extract showed a broad spectrum from cool water of antibacterial activity and the *staphylococcus aureus* was the more sensitive bacteria.

KEYWORDS: *Raphanus sativus*, Extract, antimicrobial resistance.

Aim of study

1. The present study gave an idea about the possibility of using *Raphanus sativus Extract* resistance to certain antibiotic that used in the study.
2. Using techniques API and Vitek in the diagnosis of *Bacteria* strains isolated

INTRODUCTION

Beets are a member of the Chenopodiaceae (Goosefoot family). *Beta vulgaris* also includes within the species sugar beets, swiss chard and mangel-wurzel and the common weedlambquarters. It is thought to have developed from *B. maritima* the seabeet which is native to Southern Europe. Red beets are annuals as cultivated or biennials if roots are grown for seed. It was not cultivated until the 3rd century AD and not developed until the 19th century by German and French breeders.
Beets are a cool season crop. The best quality and root color are obtained when the air temperature ranges between 10 and 18 C. Abundant rainfall, nitrogen fertilizer and high temperatures provide for rapid development which leads to white rings in the interior of the beetroot. The minimum soil temperature for beet germination is 5 C, with an optimum range of 10 to 30 C, an optimum temperature of 30 C and a maximum temperature of 35 C. Beets require a cold period of 2 weeks at 4 to 10 C or longer to initiate flowers (bolting). This may happen when beets are planted early and we have a cold May and June. Beets will tolerate frosts and mild freezes.

Beets are used for bunched greens, bunched roots, beet roots and by processors for many products. Beets may be directly sown or transplanted into tunnel houses for early greens or bunching beets. In the field the first plantings are in late April or early May for early greens or bunching beets. For processing, beets can be planted from early May to late June. Beet roots for processing and fresh markets are harvested mainly in September and October.

Recent studies have shown the importance of vegetables such as (beet rod) in a healthy diet and to prevent degenerative diseases caused by Antimicrobial stress. Hatano, T., Kagawa, H., Yasuhara, T., & Okuda, T. (1988). Vitamins and phytochemicals, such as ascorbic acid, carotenoids, polyphenols, and fiber have been regarded as the bioactive substances responsible for these effects. Koffi, E., T. Sea, Y. Dodehe and S. Soro, 2010.

Phenolic compounds are secondary metabolites commonly found in plants, useful in the defensive function against pathogens and radiation. Even though pharmacological industries have produced a number of new antibiotics in the last three decades, resistance to these drugs by microorganisms has increased. Genes for resistance to antibiotics, like the antibiotics themselves, are ancient. Hatano, T., Kagawa, H., Yasuhara, T., & Okuda, T. (1988). In general, bacteria have the genetic ability to transmit and acquire resistance to drugs, which are utilized as therapeutic agents. The problem of microbial resistance is growing and the outlook for the use of antimicrobial drugs in the future is still uncertain. Therefore, actions must be taken to reduce this problem, for example, to control the use of antibiotic, develop research to better understand the genetic mechanisms of resistance, and to continue studies to develop new drugs, either synthetic or natural. For a long period of time, plants have been a valuable source of natural products for maintaining human health, especially in the last decade, with more intensive studies for natural therapies. The use of plant compounds for pharmaceutical purposes has gradually increased in India. According to World Health
Organization Koffi, E., T. Sea, Y. Dodehe and S. Soro, 2010, medicinal plants would be the best source to obtain a variety of drugs. About 80% of individuals from developed countries use traditional medicine, which has compounds derived from medicinal plants. Therefore, such plants should be investigated to better understand their properties, safety and efficiency. Olalye, M., Rocha J., (2007). Current trends in drug development process are focused on natural sources, especially sources of plant origin due to some proven correlation between the folkloric medicinal uses of some of these plants to biological activity.

MATERIAL AND METHOD

- Preparation of plant extract

Heat water extract

The plant was purchased from Iraq and authentica. Dried plant material (25 g) was soaked in boiling water (250 ml) for 15 min, allowed to cool and filtered using Whatman filter paper. The obtained residues were further extracted, twice, and then concentrated using a rotary evaporator. Filtrates were dried to a powder in an oven at 40–50 °C. Harbone JR (1984).

Cool water extract

The plant was purchased from Iraq and authentica. Dried plant material (25 g) was soaked in cooling water (250 ml) for 15 min, allowed to filtered using Whatman filter paper. The obtained residues were further extracted, twice, and then concentrated using a rotary evaporator. Filtrates were dried to a powder in an oven at 40–50 °C. Harbone JR (1984).

RESULTS AND DISCUSSION

Minimum inhibitory concentration (MIC) evaluation

The MIC was evaluated on plant extract that showed antimicrobial activity. This test was performed at four concentrations of the extract employing the same agar well diffusion method.

Sensitivity test for beet red extract (cold & heat) extract as antimicrobial for some type of bacteria (minimums inhibiter concentrations)

<table>
<thead>
<tr>
<th>Control</th>
<th>Candida Albicans</th>
<th>Staphylococcus aureus</th>
<th>Shigella flyxnerii</th>
<th>Pseudomonas Aeruginosa</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero</td>
<td>15mm</td>
<td>22 mm</td>
<td>13mm</td>
<td>14mm</td>
<td>0.2 HOT</td>
</tr>
<tr>
<td>Zero</td>
<td>Zero</td>
<td>zero</td>
<td>zero</td>
<td>zero</td>
<td>0.2 COL</td>
</tr>
</tbody>
</table>

inhibition zone in mm unit
results revealed that *Raphanus sativus* had a significantly higher the water heat extracts of *Raphanus sativus* had the highest protective ability and this probably due to its higher antibacterial activity. (Nita T, Arai T, Takamatsu H et al. (2002)). And *staphylococcus aureus* And that the most sensitive to bacteria Where the inhibition zone (22mm) While the *Shigella flexnerii* Was the least sensitive to extract hot water where the inhibition zone (13mm) , The aqueous extract will not give any direction of the effectiveness of all types of bacteria mentioned considerin . It is therefore concluded that all chemical compounds have been activated in hot water starts by highly effective direction bacteria such as phenolic compounds phytochemicals, such as ascorbic acid, carotenoids, polyphenols, and fiber have been regarded as the bioactive substances responsible for these effects. Mantes and there are similar study Cowan MM. (1999) Where proven through study the effectiveness of the hot aqueous extract against clinically isolated bacteria And also supported by Ateb DA, and ErdoÜrul. T. (2003).

However Velickovic DT, Randjelovi NV, Ristic M et al. (2003) Has proved that the alcoholic extract is effective against bacterial

**REFRENCE**

