

***STUDIES ON MINT RUST
IN EGYPT***

***BY
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of
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***in
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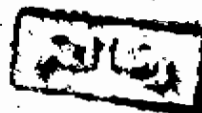
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ABSTRACT

Mint rust caused by *Puccinia menthae* Pers was widespread and prevalent in all mintfield, in Egypt. Pathogenicity tests on seven mint species were carried out. Data indicated that no symptoms were found on peppermint [*Mentha piperita*] leaves, while the other mint species were significantly different in their disease severity. *M. crispa* gave highest disease severity [60.86%] followed by *M. aquatica* [50.29%], *M. arvensis* [35.43%], *M. candida* [34.0%], *M. viridis* [33.29%], and *M. rotundifolia* [30.71%] .

Disease severity significantly depends upon plant age, which being 54.91, 50.55 and 26.63% for 88, 109 and 67 days old, respectively.

Temperature of 20°C was favourable to obtain the highest urediospores germination.

spearment plants, which aged 67 days contained more amounts of reducing, total soluble sugar, free and total phenols compounds than that which were found as plant aged 88 or 109 days.

Higher amounts of reducing sugars and free phenols compounds were found in healthy plants of peppermint [resistant] compared with spearment plants [susceptible] .

Healthy spearment plants contained more non-reducing and total sugars than peppermint.

In this study resistance of peppermint to rust disease depends upon thickness of palisade tissue and lower epidermis, where there were negative correlation between both of them and disease severity .

Tested Fungicides i. e. Bayleton, Byfidan, Tilt and Impact were effective in controlling rust disease on spearment. These fungicides led to a sharp decrease in essential oil compared with healthy plants, however, caused a clear increase in oil compared with diseased plants.

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INTRODUCTION

INTRODUCTION

Mint oil has a great commercial importance all-over the world. In Egypt, the industry of essential oil was introduced more than 50 years ago. Therefore, several works have been published on the agricultural and the industrial aspects of essential oils resulting in development of such important industry. Mint occupies the most area [3067 feddan] belonged to aromatic plants [4384 feddan].

the environmental conditions prevailing in Egypt are favourable for widespread of several medicinal and aromatic plants, one of them mint is plants which is an important crop.

Egypt exports yearly dried leaves of spearmint and peppermint to some foreign countries. So the expansion in the cultivation of mint plants may be resulted in an increase in exportation of medicinal products. This could serve as a main source of national income.

Four main mint varieties are being cultivated in Egypt. These mint varieties are known by some local names. the local, common, and scientific names of the four main mint varieties are mentioned in the following table .

Local Name	Common Name	Scientific Name
Yabani	Japanese mint	<i>Mentha arvensis</i> var. <i>Piperascens</i> L.
Filfili	Peppermint	<i>Mentha piperita</i> L.
Lymoni	Bergamot mint	<i>Mentha citrata</i> Ehrh.
Baladi	Spearmint	<i>Mentha viridis</i>

Spearmint [Baladi] and peppermint [filfili] plants represent the most widely cultivated species of mint in Egypt while the other ones are cultivated for academic purpose and experimental work.

The mint oil is used for the flavouring of numerous pharmaceutical and oral preparations.

The lower grade of dried leaves of mint is sold for less money. This reduction in price is mainly attributed to infection with pathogenic organisms.

This work aimed to detect the behaviour of mint rust, its effects on the host and its oil as an important products. Also, detecting sensitivity of some varieties were carried out as well as evaluating some fungicides for either controlling or protecting against mint rust and effect of these chemical compounds on oil production.

**REVIEW
OF
LITERATURE**