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## **STUDIES ON THE EFFECT OF MEDIKZAP AND NE 555 DEVICES USED IN NATURAL MEDICINE ON THE *CANDIDA ALBICANS* FUNGUS CELLS**

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### Abstract

The aim of the study was to evaluate the effect of two positive off-set type current generating by devices, available on the natural medicine market, on the *Candida albicans* (fungus cells). In the course of the study, broth cultures of *Candida albicans* were subjected to the influence of these two devices for a period of 10 days. Every day, the culture density and growth on an agar medium were determined. The effects of each of the two devices on *Candida albicans* cells were found to be different.

Key words: Medikzap, zapper, *Candida albicans*, fungus, positive off-set

### Introduction

During the recent years, a marked increase in the incidence of mycosis, both in its surface and systemic variety, has been observed. Anascogenic yeasts of *Candida* species are still considered the major etiological factor. There are over 200 varieties of *Candida* (1) but only some of them are pathogenic. Such common, commensal pathogenic micro-organism is the *Candida albicans*.

The risk factors for developing candidiasis (a disease caused by *Candida anascogenica* yeasts) are: overall physical condition of the host, the immune system, age, diet, social conditions and quality of life (5). *Candida spp.* infections are usually observed as a result of impairment of cellular immunity, bacterial flora disorders of the alimentary tract (after eg. antibiotic therapy), and other systemic disfunctions such as primary and secondary (acquired) immune deficiencies (AIDS, neoplastic processes, diabetes) (6, 8).

Clinical symptoms of *Candida albicans* infection persist in many patients for even several years and reoccur every 1–2 months, despite the administration of antimycotic/antifungal preparates with either topical or systemic effect (4). Literature of natural medicine reports alternative treatment methods based on electric current and herb cures.

The beginning of the 20th Century marked the appearance of a theory that within the human organism, besides cardiovascular and lymphatic systems, there is also a system of circulating electric current. Nowadays, the ideas of such pioneers of this theory as Dr. Royal Raymond Rife (1888–1971) and George Lakhovsky (1869–1942) are still vivid and put into action. These specialists in bioelectricity and bioenergy claimed that every living organism (human, vegetal, bacterial etc.) has its own electric vibration, characteristic for the species. Suppression of such vibration may result in a disease or even death of the organism. Nikola Tesla (1856–1943), an outstanding engineer and inventor, also claimed that electricity affects the human organism. He suggested, that applying certain electric frequencies, they can be used in medicine, anesthesia, wound sterilization, surgical procedures and stimulation of processes ongoing in the skin.

Contemporary physicians and biologists such as Dr. Hulda Clark and Dr. Bob Beck have also used electric current stimulation to control parasites. They assumed that, since every species has its own unique vibration rhythm, it should be possible to destroy a parasite without harming the host, by inducing resonance through electric stimulation. This became the underlying principle for constructing the zapper, a device that generates an electric current of appropriate frequency, “recharges” the human organism and helps to control harmful micro-organisms (2,3).

The aim of the study was to test the efficacy of two zapper-type devices - Medikzap and NE 555 - on the *Candida albicans* fungi. Both these devices are available on the natural medicine market.

## Materials and Methods

In our study, the source of alternative current was the Medikzap device designed by the Medi-Flowery Company Ltd. (Fig. 1). It generates a square wave current of basic frequency within the 25 - 40kHz range with a rich spectrum of harmonic components above 1MHz. Another generator was also used (Fig. 2) of a much simpler design based on the popular NE 555 integrated circuit. This device generates a square wave current with a frequency characteristic directly resulting from the parameters of the integrated circuit (3).

# VOLTAGE OSCILLATIONS ON THE ELECTRODES OF MEDIKZAP AND NE 555 DEVICES

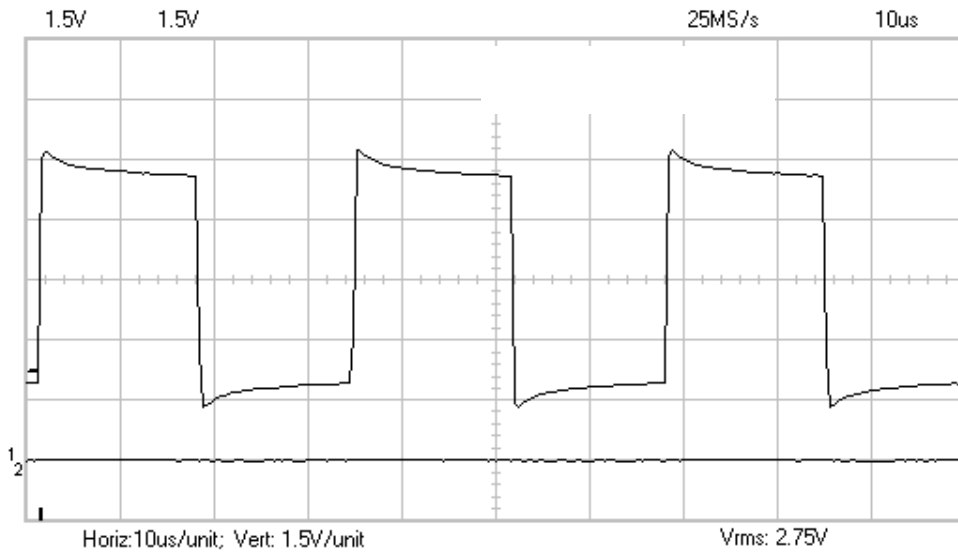


Fig. 1 Voltage oscillations on the electrodes of the Medikzap device held in both hands.

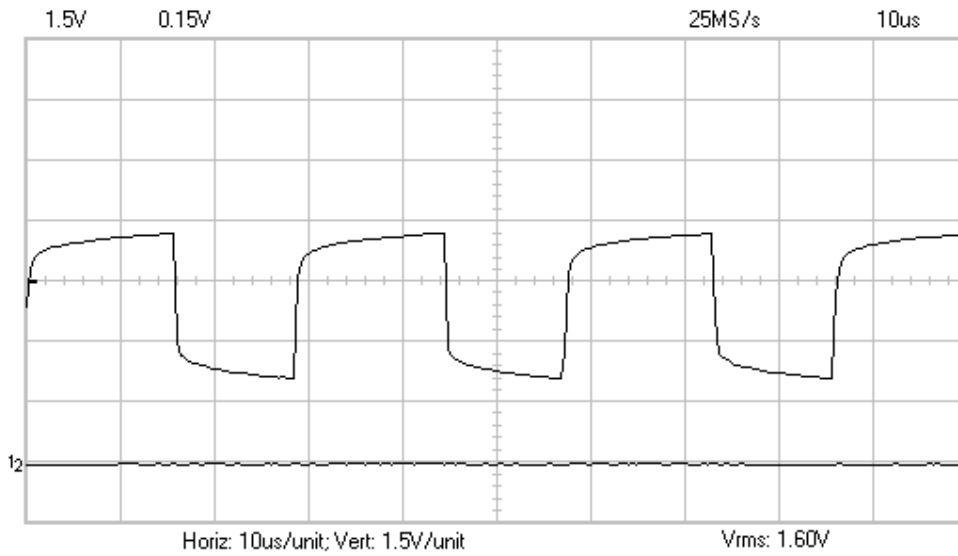


Fig. 2 Voltage oscillations on the electrodes of the NE 555 simple design device held in both hands.

Broth cultures of *Candida albicans* were subjected to the influence of both devices for a period of 10 days, as recommended by the manufacturers.

At the end of each day, the micro-organism count in 1 ml of the culture was determined with bioMerieux densimeter then inoculated in the Sabouraud agar medium with antibiotics and cultured/grown according to standard mycological procedures (7). When the 10 day cycle of testing for both devices was over, the broth culture was kept in sterile conditions at 8°C for a period of 30 days, then for a period of 6 months. It was then inoculated once more in Sabouraud agar medium to check the effect of both the devices on the viability of the *Candida albicans* cells.

## Results

The study confirmed a reduction of *Candida albicans* cell count in the cultures after the use of both Medikzap and NE 555 devices. A marked reduction in cell count was observed on the 4th day.

The growth of fungus colonies in the agar medium was less marked as compared to the fungus control culture not subjected to the influence of either device. There was no significant difference in the effect of the two devices on the count and growth of fungi cells. In the culture subjected to Medikzap, agglomerates at the bottom of the beaker were observed. On the microscopic slide of the sedimented agglomerates, clusters of yeast cells were clearly visible.

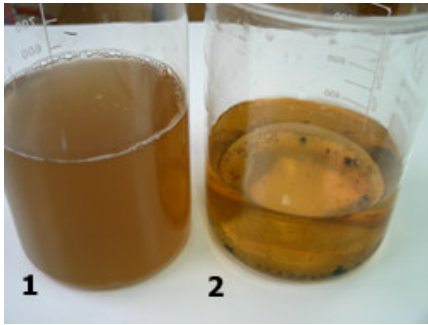
After 10 days, the density of both cultures was significantly reduced and in both, only single fungi colonies on an agar medium were observed. Inoculations performed 30 days and 6 months later, revealed no *Candida albicans* growth on the Sabouraud medium effected by Medikzap, while growth was abundant and comparable to reference culture, in the material effected by NE 555 device.

## Conclusion

There are many cleansing devices available on the natural medicine market but their effect on specific micro-organisms is different. This assumption was confirmed by our *in vitro* studies on the effect of two different devices. Our analysis of both Medikzap and NE 555 effects on *Candida albicans* cells has proved a greater efficacy of Medikzap device in fungi control than that of the NE 555 device. The NE 555 device was proved to have a static effect on *Candida albicans* cells but it does not eliminate them completely.

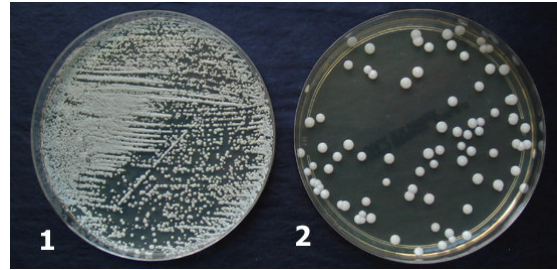
Despite significant advancement in the diagnostics and treatment of mycosis as well as availability of new antimycotic drugs, the treatment of chronic mycosis still remains problematic and controversial. Supportive treatment from natural medicine is becoming more and more popular and credible. The choice of appropriate device must however be preceded by full awareness of the efficacy of the device, confirmed by reliable results of laboratory tests.

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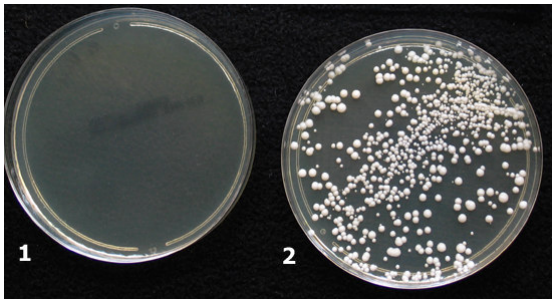
Broth cultures of *Candida albicans*

1. Prior to the use of the Medikzap
2. After a 10-day application of the Medikzap.



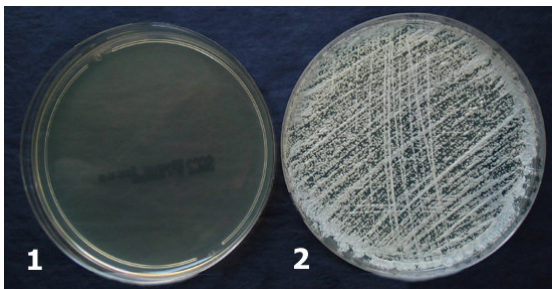
Petri slides with *Candida albicans* fungus cultures

1. Reference slide
2. After a 10-day application of the Medikzap



Growth of *Candida albicans* culture on Sabouraud agar medium 30 days after application of the Medikzap and the NE 555 devices.

1. Medikzap – no trace of *Candida albicans* cells was observed
2. NE 555 – no change in the *Candida albicans* cell count was determined as compared to the primary solution; the fungus cell count was the same as at the beginning, as if the NE 555 was not used at all.



Growth of *Candida albicans* culture on Sabouraud agar medium 6 months after application of the Medikzap and the NE 555 devices.

1. Medikzap – no trace of *Candida albicans* cells was observed
2. NE 555 – no change in the *Candida albicans* cell count was determined as compared to the primary solution; the fungus cell count was the same as at the beginning.

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