

Note: 2 abstracts

An Exploration of the Effects of Strong Radio-Frequency Fields on Micro-Organisms in Aqueous Solutions*

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The authors of this paper prepared the following comments and summary for publication. The complete paper which Dr. Brown presented at the Symposium is not available for publication.—the Editor.

Summary—Radio-frequency power generators have been widely used in many industrial heating operations. Limited applications have been made in the treatment of food, where internally induced heat has been used to inactivate enzymes, as well as to pasteurize or sterilize the material.

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Many writers have speculated concerning specific effects of electric fields on micro-organisms other than the heating effect. A series of experiments, using a wide range of frequencies to treat specimens which varied widely in conductivity, were designed to learn if the electric field *per se* contributed to the destruction of bacteria. The paper describes the methods developed for estimating field intensities and temperature rise and in addition displays typical test results.

Protective Measures for Microwave Radiation Hazards: 750 to 30,000 Mc

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The author of this paper prepared the following comments and summary for publication. The complete paper which Mr. Meahl presented at the Symposium is not available for publication.—the Editor.

Summary—Continuous exposure to a field intensity of 0.001 watt per square centimeter appears to cause no harmful effects to either animals or men.

It is neither difficult nor expensive to make and use monitoring instruments to find out whether or not fields in excess of 0.001 watt per square cm exist in an area.

It is well to remember that microwaves may be greatly intensified by reflections from objects which do not reflect light well. Consequently, it is necessary to use instruments sensitive to the microwaves in inspecting an area and to move them about the whole area to find out whether or not it is safe.

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Much experimental work remains to be done before reasonably complete evaluation of microwave radiation hazards can be made.

CONCLUSION

Attention is called to the need for monitoring microwave radiation in the frequency range of 750 to 30,000 mc and for limiting the intensity to which one exposes his body.

Two inexpensive and easy to use devices which may be used as monitors of field intensity are described briefly.

The materials and techniques which may be used to limit the field strength to which one exposes himself are indicated.