

US Patent US6192598B1: The Use of Microwaves to Kill Insects

The use of millimeter and microwaves as an insecticide treatment is described in a 2001 US patent.

According to the patent, microwaves are an effective way to kill insects. For the biology challenged, it should be noted that insects are “life forms”. Insects are hexapod invertebrates and the largest group within the arthropod phylum. They are classified as arthropods, which are animals with hard external skeletons called exoskeletons, segmented bodies, and at least three pairs of legs. The class Insecta encompasses all of the insects on the earth.

In case you do not know this, included in the insect phylum, are honey bees and bumble bees. Bee keepers began to lose bee colonies back in the summer and fall of 1996 with the introduction of wireless energy communications. As recent as last year, 2022, bee keepers had lost half of their colonies and most were poisoned by microwave energy.

Albert Einstein once said: *“If the bee disappears from the surface of the earth, man would have no more than four years to live. No more bees, no more pollination ... no more men!”* This quote highlights the importance of bees to the global ecosystem. If bees disappeared, there would be no more pollination, which would lead to the extinction of plants, animals, and eventually humans.

In the past few years there have been many reports of fewer insects, flies, and other bugs visiting folks on their back porch or patio. This has been confirmed by people who drive full time for a living saying that they have to clean their windshields less frequently. Bus drivers, truck drivers, delivery drivers, and highway patrol officers have all noted the diminished insects smearing their windshields of vehicles.

You can chalk all this up to invisible microwave energy. If you note on the patent below issued in 2001, it has been around with us for some time! The patent had been applied for in November 1997. Experimental application and research have been underway for at least three decades earlier by the U.S. Navy.



US006192598B1

(12) **United States Patent**
Halverson et al.

(10) **Patent No.: US 6,192,598 B1**
(45) **Date of Patent: Feb. 27, 2001**

(54) **MICROWAVE AND MILLIMETER WAVE METHOD AND APPARATUS FOR CONTROLLING INSECTS IN STORED-PRODUCTS**

(51) **Int. Cl.⁷ F26B 17/12**
(52) **U.S. CL 34/174**
(58) **Field of Search 34/259, 265, 165, 34/168, 170, 174**

(75) **Inventors: Steven L. Halverson, Clinton, WI (US); Timothy S. Bigelow, Knoxville, TN (US)**

(56) **References Cited**
U.S. PATENT DOCUMENTS

(73) **Assignee: Micro-Grain, Inc., Clinton, WI (US)**

2,299,299 * 10/1942 Bills 98/56
3,001,465 * 9/1961 Donelson, Jr. 98/55
5,869,816 * 2/1999 Strack et al. 219/687

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

* cited by examiner

(21) **Appl. No.: 09/459,275**

Primary Examiner—Denise L. Ferencic
Assistant Examiner—Malik N. Drake
(74) *Attorney, Agent, or Firm*—Lathrop & Clark LLP

(22) **Filed: Dec. 13, 1999**

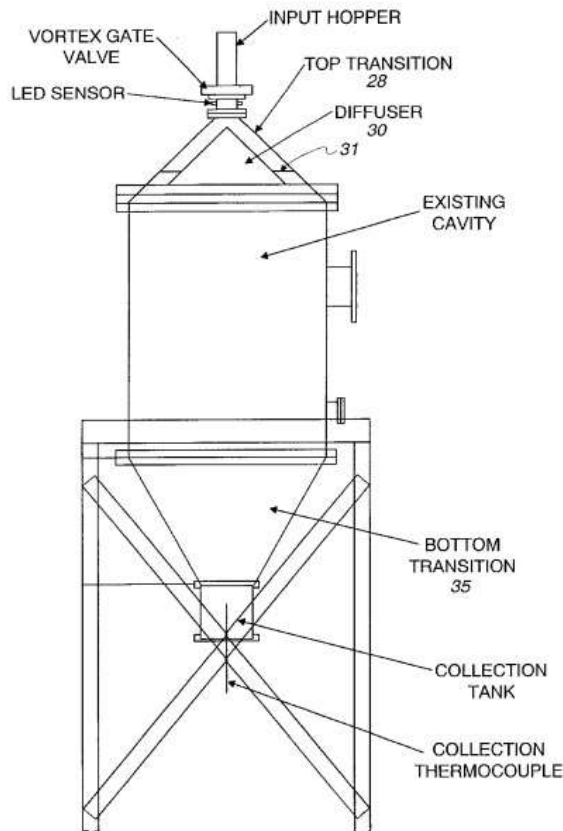
(57) **ABSTRACT**

Related U.S. Application Data

(62) Division of application No. 09/132,011, filed on Aug. 10, 1998.
(60) Provisional application No. 60/064,138, filed on Nov. 3, 1997.

A method and apparatus for disinfecting granular material using microwave energy in an applicator that mixes the material with air for consistent and effective insect mortality rates.

7 Claims, 4 Drawing Sheets



1

MICROWAVE AND MILLIMETER WAVE METHOD AND APPARATUS FOR CONTROLLING INSECTS IN STORED- PRODUCTS

This application is a divisional of Application No. 09/132,011 filed Aug. 10, 1998 and U.S. Provisional Application No. 60/064,138, filed Nov. 3, 1997, the disclosures of both applications are incorporated by reference herein

FIELD AND BACKGROUND OF THE INVENTION

This invention relates in general to pest control using microwave energy, and in particular to the use of Super High Frequency (SHF) and Extremely High Frequency (EHF) band microwaves that kill insects in granular materials without the use of chemicals.

The principle of using microwaves as a pesticide in grain and granular materials has been known, but it has been determined that effective and consistent mortality rates are only possible when the grain is unpacked, mixed with air, and fairly uniform in density for effective microwave penetration.

[Link To Full Patent US6192598 Microwave and millimeter wave method and apparatus for controlling insects in stored-products](#)

The grave implications for the entire ecosystems involve not only the [insect apocalypse](#).

Read
[The Insect Apocalypse Is Here – The New York Times](#)

[On the FCC guideline in relation to the health and viability of horses at Churchill Downs](#)

Massive deployments of ground and [space-based](#) wireless systems are a threat to the health of all biological life by continuously contaminating our environment with microwave radiation, a [hazardous](#) physical agent:

Related:

Militaries use electromagnetic radiation as weapons:

[Link to Video](#)

The above video of military applications always uses the term “non-lethal” in a deceptive way; it can be operated in higher frequencies that become “lethal”.

Related:

[Directed Energy Futures 2060 Final29June21 with clearance number.pdf \(af.mil\)](#)

Additionally, microwave radiation exposure causes plants to produce increased levels of highly flammable [terpenes](#).

“Microwave irradiation resulted in thinner cell walls, smaller chloroplasts and mitochondria, and enhanced emissions of volatile compounds, in particular, monoterpenes and green leaf volatiles (GLV).”

> [J Plant Physiol.](#) 2014 Sep 15;171(15):1436-43. doi: 10.1016/j.jplph.2014.06.013. Epub 2014 Jul 8.

Influence of microwave frequency electromagnetic radiation on terpene emission and content in aromatic plants

Maria-Loredana Soran ¹, Manuela Stan ¹, Ülo Niinemets ², Lucian Copolovici ³

Affiliations + expand

PMID: 25050479 PMID: PMC4410321 DOI: 10.1016/j.jplph.2014.06.013

[Free PMC article](#)

Abstract

Influence of environmental stress factors on both crop and wild plants of nutritional value is an important research topic. The past research has focused on rising temperatures, drought, soil salinity and toxicity, but the potential effects of increased environmental contamination by human-generated electromagnetic radiation on plants have little been studied. Here we studied the influence of microwave irradiation at bands corresponding to wireless router (WLAN) and mobile devices (GSM) on leaf anatomy, essential oil content and volatile emissions in *Petroselinum crispum*, *Apium graveolens* and *Anethum graveolens*. Microwave irradiation resulted in thinner cell walls, smaller chloroplasts and mitochondria, and enhanced emissions of volatile compounds, in particular, monoterpenes and green leaf volatiles (GLV). These effects were stronger for WLAN-frequency microwaves. Essential oil content was enhanced by GSM-frequency microwaves, but the effect of WLAN-frequency microwaves was inhibitory. There was a direct relationship between microwave-induced structural and chemical modifications of the three plant species studied. These data collectively demonstrate that human-generated microwave pollution can potentially constitute a stress to the plants.

Keywords: Abiotic stress; Aromatic plants; Essential oils; Microwave; Volatile organic compounds.

Copyright © 2014 Elsevier GmbH. All rights reserved.

Link To Article [HERE](#)

Related:

[Link To](#) Influence of microwave frequency electromagnetic radiation on terpene emission and content in aromatic plants

Blessings,

Pastor Bob, EvanTeachr@aol.com
www.pastorbobreid.com