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Control of Powdery Mildew of Sheesham (*Dalbergia sissoo*) in India through Radionics Computer and Nanotechnology from Kuwait

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Abstract

Powdery mildew is a common fungal disease caused by different fungi on different hosts including field crops, vegetable crops, fruit trees, ornamentals, and woody trees. Sheesham (Dalbergia sissoo) is one of the most common and important timber and woody trees in the Indo-Pak subcontinent. An experiment was conducted to control the growth/spread of powdery mildew caused by the fungus (Phyllactinia dalbergiae) growing on 'Sheesham' (Dalbergia sissoo) tree leaves. The infected leaves showed a white powdery mass and senescence as compared to uninfected leaves. Nanotechnology likely refers to the application of nanoscale polymers for targeted delivery of antifungal agents. Control of fungal growth on 'Sheesham' leaves was managed by using 'Radionics computer technology' and thermal analysis from the State of Kuwait. It was observed that the application of different doses using 'Radionic computer technology' from a far distance resulted in controlling the growth of powdery mildew on the 'Sheesham' tree. After the application of the last dose, the powdery mildew disease was managed.

Keywords: Powdery mildew, Sheesham Dalbergia sissoo, Radionics Computer, Composite wood, Thermal Analysis, Polymer nanotechnology.

INTRODUCTION

Powdery mildew is a common fungal disease caused by different fungi on different hosts including field crops, vegetable crops, fruit trees, ornamentals, and woody trees. Sheesham (*Dalbergia sissoo*) is one of the most common and important timbers and woody trees in the Indo-Pak subcontinent. This tree is appropriate for integration into agroforestry systems, not only to provide beneficial products such as timber, firewood, and forage, but also to improve the soil, control erosion, and protect crops from adverse weather conditions [1]. Moreover, this tree is appropriate for semi-arid regions, since it is easy to propagate and it shows rapid growth in comparison with other trees used for agroforestry. Unfortunately, this tree is subjected to different fungal diseases, which lead to poor growth and leaf senescence. Powdery mildew is one of the important diseases of this host (Sheesham) caused by *Phyllactinia dalbergiae.* This disease occurs on all parts of the trees including leaves, twigs, flowers, and pods. The causal pathogen has two types of life cycles; asexual and sexual [2]. The disease appears first on the lower surface of new leaves as white growth of mycelium. With the passage of time color changes to greyish white and pale yellow due to the abundance production of conidiophores and conidia. The sexual life cycle has got cleistothecia in which aeciospores/ascospores are produced during older stages of the fungus. The disease is being controlled with protectant and systemic chemical fungicides.

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A new technology/method called radionics which means a method of diagnosis and treatment at a distance utilizing a specially designed instrument/device called a radionics computer is being introduced. [3]. The utilization of radionics in plant disease management represents a novel approach that integrates principles of quantum physics and subtle energy medicine into agriculture. Radionics involves the use of specialized instruments and techniques to detect and manipulate subtle energy fields believed to influence living organisms. In the context of plant disease management, radionics practitioners aim to identify and address energetic imbalances or disturbances within plants, soils, and their surrounding environments that may contribute to disease susceptibility or progression. By assessing and rebalancing these energetic factors, radionics seeks to support plant health and resilience, potentially reducing the need for chemical interventions and promoting sustainable agricultural practices. While traditional methods of plant disease management focus primarily on biological, chemical, or physical interventions, the incorporation of radionics offers a holistic and non-invasive approach that may open new avenues for enhancing crop health and productivity.

Basic to radionics theory and practice is the concept that everything that exists has a unique vibrational signature. These signatures are represented in Radionics by a system of codes, each of which is known as a Rate. The Rates are used as the focal point for both testing and treatment (Copen Radionic Instruments- Copen Bruce, Operators Manual).[4]

In radionics treatment, drugs are not used as in conventional medicines. They work with the energy in the form of potentized remedies. These remedies are not chemicals, so they have no toxic effect on target entities/objects. A parasitic plant *Cuscuta* sp. has been treated using radionics rates of some materials through radionics computer with 100% mortality [5]. Though the literature on the use of radionics techniques in agriculture, especially managing the growth of pests is very scanty, we planned to understand the role of the radionics broadcasting approach in managing a pest.

Keeping in mind the above, an initial step was taken to use this very new methodology (Pesticide Broadcasting Technology) against powdery mildew fungus through 'Radionics Computer' with the following objectives.

- Control of Powdery mildew using new technology.
- Introduction of Radionics Computer in agro-ecosystem.
- Introduction and preparation of distinctive botanical pesticides.
- Application of botanical pesticides from a distance and managing plant pathogens without hazardous chemicals is a step toward a clean and sustainable environment.

No literature is available to control this disease with this new technology by broadcasting from a distance through Radionics Computer. This new technology was successfully used in controlling Dodder (*Cuscuta* spp.) on *Vitex* and Oleander plants by using 'radionics rates' of sea water and urea fertilizer by broadcasting through radionics computer with very promising and excellent results [5]. In another experiment, soil sterilization with neem using its 'radionics rate' against soil-borne microorganisms (fungi, bacteria, nematodes as well as weeds) was broadcasted using a radionics computer getting 100 % mortality [6].

MATERIALS AND METHODS

Radionics computer, sensor, pendulum, Copen lab radionics rates book, operator's manual, and handbook (Analytical Radionic Computer MK2/S/N) were used in the present study. Colored pictures of the leaves disease caused by a pathogen, as disease sample investigation and control (pictures were taken in India on March 14, 2022, before giving any treatment, Fig. 1) along with neem (*Azadiracta indica*) radionics rate.

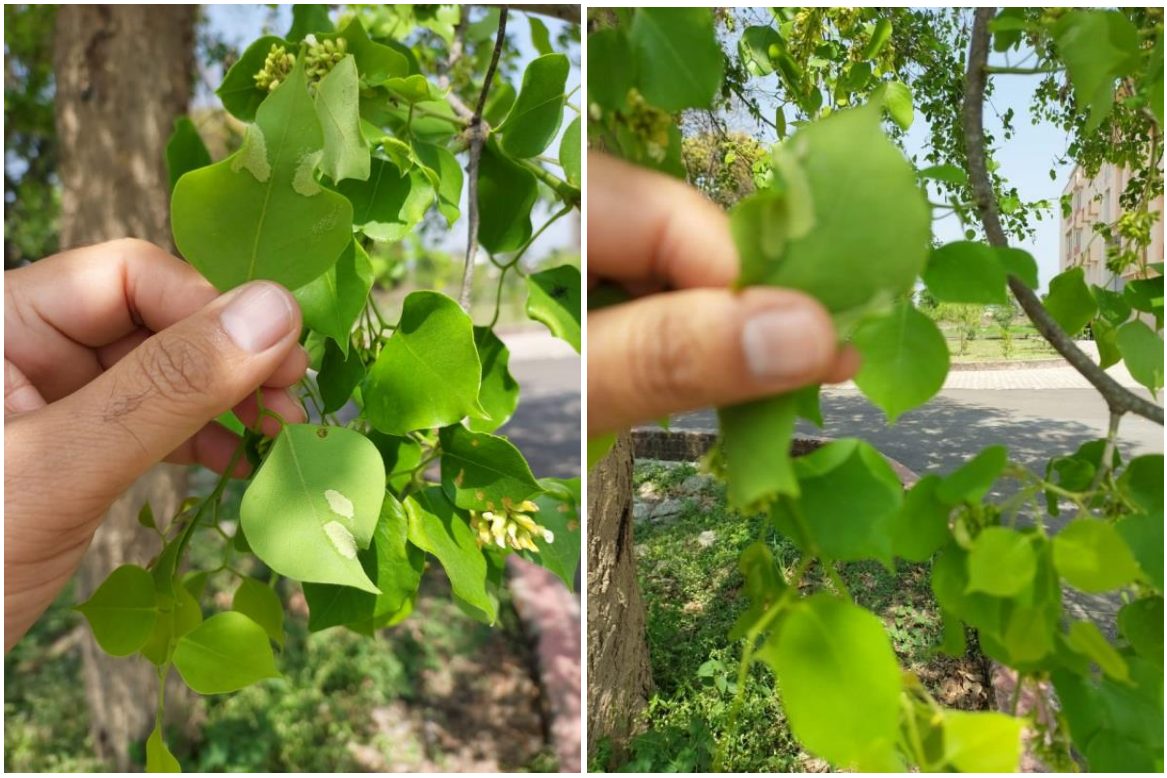

Figure 1. Symptoms of powdery mildew attack on Sheesham before treatment on 23/3/2022

INVESTIGATION STUDIES

The radionics computer was put in working condition; plant disease-colored prints were placed in a sample cup to represent the host and disease. The censor and pendulum were set as per instructions. Identification of host: The host tree was identified from a list of trees. (Table 1)

Identification of the disease: The disease was identified from a list of different diseases including leaf mold, leaf blight, leaf rust, wilt, powdery mildew, collar rot, dieback, *Ganoderma* root rot, trunk rot, and wood rots (Table 2).

Identification of pathogen: The pathogen of the disease was identified from a list of possible types and a list of powdery mildews causing on different hosts for Sheesham (Table 3, 4). The life cycle of the fungus was found in the initial symptoms of the disease on new leaves of the Sheesham. Target tree/site location: Swami Rama Himalayan University, Jolly Grant, Dehradun, Uttarakhand, India, (30.1951° N, 78.1921° E).

Treatment studies

- ***Selection of the material used as a pesticide from a list****:* The material used as a pesticide was selected from a list of different medicinal plants (Table 5).
- ***Setting the radionics rate of the selected plant on the device****:* Radionics rate was set/dialed on the Rate Number Matrix as advised in the operational manual.
- ***The potency of the dose of pesticide detected****:* Potency was detected and applied using the methodology described in the manual before every treatment.
- ***The number of treatments required for the control of disease****:* 1, 2, 3, 4, 5, 6, 7, 10, 15 treatments. This was detected with the help of a radionics computer.
- ***Method of treatment:*** This was selected from different methods of treatment. Spray, fumigation, soil application, and broadcast were applied.

- ***Time of application:*** The period/length of time in minutes required for treatment was selected before each application. 1, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60 minutes.
- ***Interval between treatments:*** Data recording before each treatment and application of the next treatment: 1, 2, 3, 4, 5, 6, 7, 10, 15, 20, 25, 30 days.
- ***Treatment of the target tree with neem broadcast:*** The sample photo prints were placed in the treatment cup on the left side. Neem was broadcasted as per the computer instruction manual. Treatment continued till 40 minutes of alarm. This was repeated for all five treatments.

RESULTS AND DISCUSSION

In this study, colored picture prints were used as witness samples for disease investigation and control in the sample cup. The host was identified as Sheesham with the help of a radionics device. Table 1 and 2 show the identification of the host plant, and disease identification using a radionics computer. Table 3 and 4 show the morphological type of pathogen and disease identification.

Table 1. Host Plant Identification with the Help of a Radionics Device.

S. N.	Tree name	Computer Indication	Results
1	Conocarpus	Negative	No
2	Ziziphus	Negative	No
3	Acacia	Negative	No
4	Sheesham	Positive	Yes
5	Eucalyptus	Negative	No

Table 2. Disease Identification Parameters Using Radionics Computer Response.

Parameters	Computer response	Results
Colour of the symptom	Positive	White
Appearance of symptoms on leaves	Positive	White powdery mass
Shape of symptom on leaves	Negative	No specific shape
Appearance of symptoms on flowers	Negative	No
Appearance of symptoms on pods	Negative	No
Appearance of symptoms on twigs	Negative	No

Table 3. Morphological Type of Pathogen Identification

S. N.	Type of pathogen	Computer Indication	Results
1	Fungus	Positive	Yes
2	Bacteria	Negative	No
3	Nematodes	Negative	No
4	Viruses	Negative	No
5	Physiological	Negative	No
6	Parasitic plants	Negative	No

Table 4. Identification of the Type of Disease

S. N.	Fungal Diseases	Fungi Causing Powdery Mildews	Computer Indication	Results
1	Leaf mold	*Erysiphe* spp.	Negative	No
2	leaf blight	*Leveillula* spp.	Negative	No
3	leaf rust	*Sphaerotheca* spp.	Negative	No
4	wilt	*Podosphaera* spp.	Negative	No
5	Downy mildew	*Oidium* spp.	Negative	No
6	Powdery Mildews	*Phyllactinia* spp.	Positive	Yes
7	Root rot	*Uncinula* spp.	Negative	No

IDENTIFICATION OF THE DISEASE

The disease was identified from a list of different diseases. Leaf mold, leaf blight, leaf rust, wilt, Powdery mildew, collar rot, die-back, trunk rot, wood rots,

The life cycle of the causal fungus of powdery mildew was checked attacking the Sheesham tree in India at the time of the appearance of the disease.

Asexual life cycle: The positive response of the computer showed the presence of the asexual life cycle of the fungus. The asexual life cycle of the fungus was found in the initial symptoms of the disease on new leaves of the Sheesham.

Sexual life cycle: The negative response of the computer showed the absence of the sexual life cycle of the fungus. No fruiting bodies having ascospores were showing their presence. In the asexual life cycle, only conidia were detected during control treatments.

TREATMENT SECTION

For treatment and control of this disease, neem was selected with the program, 5 doses with 10 days interval broadcast for 40 minutes per dose as mentioned in Tables 5, 6, 7, and 8.

Table 5. Selection of Botanical Pesticide Through the Pendulum Movement on Stick/Pendulum Matrix (Pesticide Sample in the Right-Hand Cup).

Parameters (Sensor on for pesticides)	Computer Indication	**Results**	**Conclusion**
Eucalyptus	Negative	No	
Calotropis	Negative	No	
Neem	**Positive**	**Yes**	**Selected for application**
Capsaicin	Negative	Yes	
Turmeric	Negative	No	

Table 6. Doses of Neem were Diagnosed for Treatment and Control of the Disease.

S. No.	**Number of treatments**	**Computer Indication**	**Results**	**Conclusion**
1	1	Negative	No	-
2	2	Negative	No	-
3	3	Negative	No	-
4	4	Negative	No	-
5	5	Positive	Yes	Confirmed
6	6	Negative	No	-

Table 7. Method of Application of Treatment to the Target Trees

S. No.	**Method of application**	**Computer Indication**	**Results**	**Conclusion**	**Adopted**
1	Spray	Negative	No	-	-
2	Broadcast	Positive	Yes	Confirmed	Broadcast
3	Fumigation	Negative	No	-	-

Table 8. Treatment Period Time Detection (Minutes)

S. No.	**Time of broadcast**	**Computer Indication**	**Results**	**Conclusion**
1	1	Negative	No	-
2	5	Negative	No	-
3	10	Negative	No	-
4	15	Negative	No	-

5	20	Negative	No	-
6	25	Negative	No	-
7	30	Negative	No	-
8	35	Negative	No	-
9	40	Positive	Yes	Detected
10	50	Negative	No	-

Table 9. Effect of Neem Broadcast on Powdery Mildew on Sheesham Tree in India**.**

	Parameters	**Mortality of fungus/control (in percentage)**						
	Results of treatment	0	1st	2nd	3rd	4th	5th	6th
Life Cycle	Data recorded on →	23/3/ 2022	07/4/ 2022	17/4/ 2022	26/4/ 2022	07/5/ 2022	19/5/ 2022	29/5/ 2022
Asexual	Mycelium	0	4	22	50	85	100	100
	Conidia	0	0	22	50	85	100	100
	Conidiophores	0	0	22	50	85	100	100
Sexual	Mycelium	0	0	0	0	0	0	0
	Ascospores	0	0	0	0	0	0	0
	Asci	0	0	0	0	0	0	0
	Cleistothecia	0	0	0	0	0	0	0

Table 9 shows the progress in controlling/managing the powdery mildew fungus by neem broadcasting treatments with time, resulting in a total of 100% control. No chemical or any material was sprayed directly on the Sheesham tree in India. The treatment was just broadcasted through the Radionics computer from the State of Kuwait. The 1st treatment was broadcasted during the last week of March 2022 which resulted in only 4% control on mycelium. The effect of the second treatment was 22%. This control was increased with progression in the number of treatments and resulted in total control of the target disease. Figure 2 shows the powdery mildew control after the sixth dose of the radionics treatment broadcast. Lorand [7] also reported on the usage of the radionics approach in agricultural pest management, our study also tried to show that radionics techniques can be employed in controlling phytopathogens, but to confirm in this regard details studies are required.

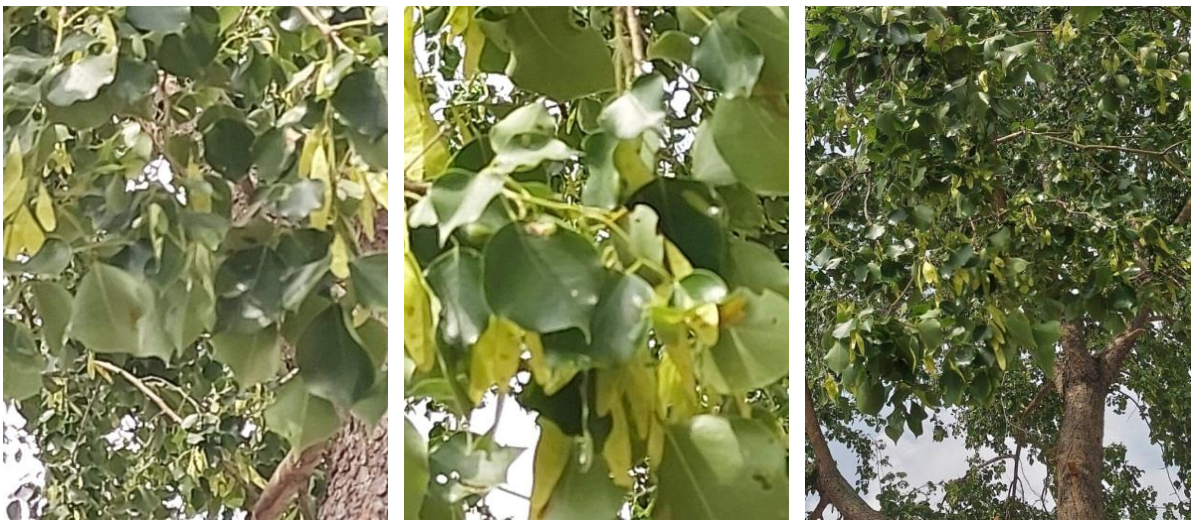

Figure 2. Management of Powdery Mildew Attack on Sheesham After Treatment

DISCUSSION

The radionics approach to plant disease management presents significant environmental benefits compared to traditional chemical treatments.[8] By focusing on rebalancing subtle energy fields within plants and their surroundings, radionics reduces reliance on synthetic pesticides and fungicides, thereby minimizing chemical inputs in agricultural systems.[9] This reduction not only decreases environmental contamination but also preserves soil health, biodiversity, and ecosystem resilience.[10] Unlike chemical treatments, radionics interventions leave a minimal environmental footprint and do not disrupt soil microbial communities or harm non-target organisms. Furthermore, by promoting natural plant defenses and holistic plant health, radionics contributes to long-term sustainability in agriculture, aligning with principles of agroecology and conservation. Overall, the adoption of radionics offers a promising pathway towards environmentally friendly disease management practices that support both agricultural productivity and ecological integrity [11,12].

FUTURE SCOPE

1. **Experimental Design:** Develop well-controlled experimental designs that compare the effectiveness of radionics treatments against conventional disease management strategies (e.g., chemical fungicides, biological control agents) in controlled environments such as greenhouses or growth chambers. Ensure randomization, replication, and blinding to minimize bias and increase the reliability of results.
2. **Field Trials:** Conduct large-scale field trials across different agricultural regions and crop types to assess the efficacy of radionics treatments under real-world conditions. Compare disease incidence, severity, and crop yields between treated and untreated plots over multiple growing seasons to evaluate long-term effects and potential benefits.
3. **Quantitative Analysis**: Employ rigorous quantitative methods to analyze the data, including statistical techniques such as analysis of variance (ANOVA), regression analysis, and spatial analysis. Use appropriate statistical tests to determine the significance of differences observed between treatment groups and control groups.
4. **Biological Mechanisms:** Investigate the underlying biological mechanisms by which radionics treatments may influence plant health and disease resistance. Utilize techniques such as gene expression analysis, metabolomics, and microbiome profiling to explore changes in plant physiology, biochemistry, and microbial communities in response to radionics interventions.
5. **Integration with Conventional Methods**: Explore the potential synergies between radionics and conventional disease management practices, such as integrated pest management (IPM) approaches. Investigate whether combining radionics treatments with existing strategies can enhance overall disease control and reduce reliance on chemical inputs.
6. **Farmers' Perspectives:** Conduct surveys, interviews, and participatory research with farmers to understand their perceptions, experiences, and acceptance of radionics as a viable tool for plant disease management. Assess factors influencing adoption, including efficacy, cost-effectiveness, ease of implementation, and compatibility with existing farming practices.
7. **Knowledge Transfer and Extension:** Develop educational materials, training programs, and extension services to disseminate knowledge about radionics and provide support to farmers interested in incorporating it into their farming operations. Foster collaboration between researchers, extension agents, and agricultural stakeholders to facilitate the uptake of radionics-based approaches in agricultural settings.

CONCLUSION

The powdery mildew disease has been successfully controlled with neem broadcasting through the radionics computer technique without spraying any pesticide on the target tree. The control treatment was applied from the Amghara campus of the Public Authority of Agricultural Affairs & Fish Resources, (Ministry of Agriculture), Kuwait to the target Sheesham tree at Jolly Grant, Dehradun, Uttarakhand, India. This study clearly showed that the ‘Radionic’ Computer technique’ is an environmentally safe approach to manage plant pathogens sustainably and safely without causing any negative effect on the agro-ecosystem. The combination of radionics computer technology and polymer

nanotechnology presents an intriguing solution to control powdery mildew in Sheesham trees, its practical implementation and success would depend on thorough testing and validation under diverse conditions. It's important to note that the efficacy of radionics in plant disease management remains a subject of ongoing research and a topic to discuss within the scientific community, further studies are also ongoing to validate its effectiveness and efficacy in real-world agricultural settings.

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