Research Article

Microbiology Research & Infectious Diseases

Homoeopathic Medicines In Treating Bacterial Blotch Disease Of White Button Mushroom Infected By Pseudomonas Tolaasii

S. Sheeba[1*], Gopinath[2], U T Karthika[3]

[1]*Department of Gynaecology and Obstetrics, Sarada Krishna Homoeopathic Medical College, (Affiliated to The Tamil Nadu Dr. M.G.R. Medical University, Chennai), Kulasekharam, Kanyakumari District, Tamilnadu, India*

[2]*Homoeopathic Physician, Madurai, India.*

[3]*Homoeopathic Physician, Trivandrum, India.*

***Correspondence Author:**
HS Sheeba, Department of Obstetrics and Gynaecology, Sarada Krishna Homoeopathic Medical College, (Affiliated to The Tamil Nadu Dr. M.G.R. Medical University, Chennai), Kulasekharam, Kanyakumari District, Tamilnadu, India.

Received: 24 Aug 2026, **Accepted:** 01 Sep 2026, **Published:** 05 Sep 2026

Citation: S. Sheeba, Gopinath, U T Karthika. Homoeopathic Medicines In Treating Bacterial Blotch Disease Of White Button Mushroom Infected By Pseudomonas Tolaasii. *Microbiol Res Infec Dis*. 2026; 1(1), 01-05.

Abstract

Pseudomonas tolaasii is a bacterium which affects the mushroom and springs the most common infection as bacterial blotch disease. It commonly occurs in summer-autumn time; the affected mushroom caps are covered with yellow-brown spots. In severe forms of infection these spots blowout the mushroom and become distorted, putrefied with obnoxious odour. Young pins affected by bacterial blotch disease, become brown and further growth is very rare. The scope and purpose of the study is to acquainted with the efficacy of Homoeopathic medicines in providing resistance to button mushrooms against bacterial blotch disease which infected by Pseudomonas tolaasii and to recognize among the selection of two medicines which was more efficient in providing resistance against bacterial blotch disease. Aconite Napellus was initiate to be effective and categorize the bacterial blotch disease which infected by Pseudomonas tolaasii. It bared amended and enhanced growth of mushroom bud for about five mm against Pseudomonas tolaasii. The approach of achievement for Aconite Napellus was more effective than Belladonna in handling bacterial blotch disease. Thus, Homoeopathic medicines plays a major role in rectifying the fungal infections caused by various pathogens and it promotes the farmer's economic development by mushroom cultivation in numerous aspects of prosperous progressions.

Keywords: Bacterial blotch disease, Homoeopathic medicines, Pseudomonas tolaasii, Mushroom.

Introduction:

The mushrooms remain fleshy macro fungi, consumed for their nutritional value, they are cultivated nearly in seventy countries. The mushrooms are affected by various diseases like bacterial blotch, green mold, die back disease, dry bubble disease and wet bubble disease. These diseases have major role in affecting growth of the mushrooms and thus the economy. The commonest disease-causing pests are mites, mushroom flies, mycophytic nematodes, phorid fly and sciarid fly. This study assumed to comprehend the effectiveness of homoeopathic medicines in giving resistance to diseases of mushroom (1).

Chemical agriculture dominates traditional organic farming due to assured yield and reducing the infection. (2) But over a period of time, we all on track of subjecting in chemicals smearing which causes health issues too (3). Homoeopathic remedies stimulate immune system to fight the disease disorders and to produce severe cultivation loss to the farmers, increasing immune system response thereby enhancing productivity of mushrooms which is free of epidemic diseases, so that we can obtain purest form of edible mushrooms in natural, simple and inexpensive method to increase agricultural production without using synthetic chemicals, subsequently a wide range of health hazards ranging from short term impacts such as headache and nausea to chronic impacts like cancer can be avoided. (4)

The use of homoeopathic medicines in different fields of human utility is the prime motivation to conduct such a project, where homoeopathic medicines such as Belladonna, and Aconite Napellus, 200 was used to prevent a common disease in Mushroom, i.e., Blotch disease caused by *Pseudomonas tolasii*. Utilization of homoeopathic medicine in food production, similarly influence the biological process of plants to accelerate growth, overcome infectious plant diseases and thereby directly promoting increased production of mushroom. Application of homoeopathy in food production /Single Cell Protein production can also reverse the damage which already present in the environment (3). Homoeopathy can be efficiently used in agricultural science (5) as well as Homoeopathic remedies are prescribed based on symptom similarity, tthe most similar remedies for bacterial blotch condition are Aconitum Napellus and Belladonna (6).

Materials and Methods:

The mushroom spawns were divided into 4 groups. First group - there was no bacterial culture added (negative control) In second group – the mushroom spawns were injected with Pseudomonas Culture, in third group - the mushroom spawns soaked with Pseudomonas culture and Aconite Napellus 200 and in fourth group – the mushroom spawns soaked with Pseudomonas culture and Belladonna 200. Budding mushrooms is primed beneath the manure alleged plastic bags. First process to constructing the compost of raw materials for the nourishment are mixed unruffled, moistened and composted. Second process is spawning, the compost is dried and accustomed to achieve optimum growth of spawn presumably it fills the compost with mycelia over a period of weeks. Third process is casing, it encompasses and hiring a coating on topmost of compost, to fetch about environmental conditions and encourage the formation of fruiting. Final process is harvesting, after several weeks, the fruiting body matures and henceforth harvested.

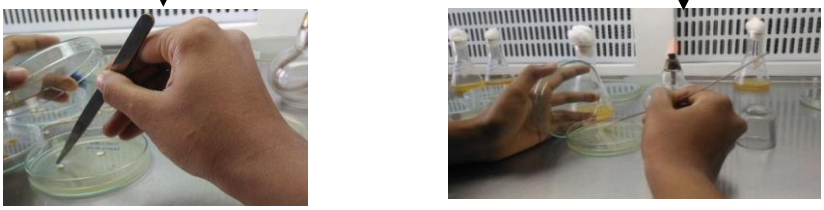
MAKING THE COMPOST

SPAWNING

CASING

HARVEST

Antimicrobial activity of pseudomonas tolaasii against Aconite 200 and Belladonna 200



Streaking of organisms

Dispensing medicines - antimicrobial activity

The Button Mushroom (Agaricus bisporus) is grown on a wide variety of composts, including with horse or chicken manure and plant wastes like wheat straw and corn cobs. Mushroom spawn is added to the pasteurized compost. Once the fungus colonizes the compost, with 50 percent of the surface area showing white mycelium (pH of 7-7.5) most probably infection flinches and terminate around. Mushroom spawn is added to casing for increasing the yield process (7,8). Thereafter, it takes a week for fungus to start pinning, or producing mushroom fruiting with precursors (9).

In vitro study of *Pseudomonas tolaasii* against Aconite Napellus and Belladonna

Isolation of *Pseudomonas tolasi from infected Mushroom*: One gram of infected mushroom sample grown in group I, II, III and IV individually diluted with 90 ml of sterile distilled water and mixed well. Serial dilutions were prepared till 10-5 and spread plate technique was used on appropriate selective media. Kings Medium B Base is recommended for non-selective isolation, cultivation and pigment production of Pseudomonas species. Plates were made by driving (15mL) sterilized Kings agar medium and allowed to solidify for a few minutes in aseptic condition. A volume of 0.1 ml

of prepared dilutions were poured into each plate, with the help of L-shaped glass rod spreader, the dispensed inoculums blowout on whole surface of agar uniformly.

Antimicrobial activity of *Pseudomonas tolaasii* against Aconite Napellus, Belladonna.

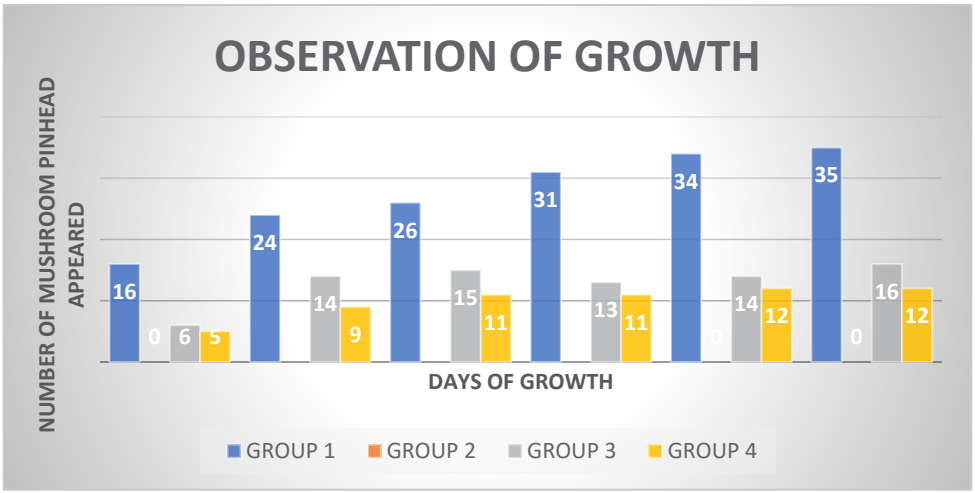
Filter paper discs of six mm diameter loaded with 10µL of selected Aconite (10,11), Belladonna, ethanol independently remained and positioned on the surface of bacteria seeded nutrient agar medium in the respective labelled area. All the plates existed and incubated in an inverted position for 24 hrs at 37°C. After incubation, the clear zone surrounding each disc (zone of inhibition) was measured with the help of measuring scale.

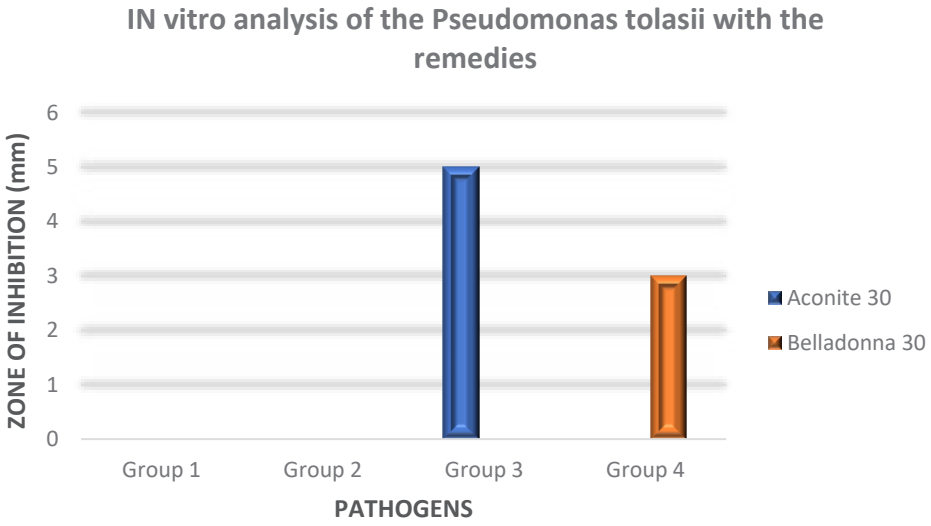
Results and Discussion:

The mushroom groups were endorsed and detected from the day 15 to 20th, all the samples presented with approximately buds growth except in first and second group in which negative control and the mushroom spawns were soaked with entire Pseudomonas culture. On the end of the day, other groups which indicated as the growth of bud are detained, therefore outcomes are pragmatic, notorious in Group III in which the spawn was soaked with Aconite Napellus (12) was not affected with the bacterial infection and it displayed, enhanced and enriched with growth buds while comparing with the other samples given in table:1.

Table 1: Observation of growth of mushroom

	Group 1 Negative control (Spawn only)	Group II Spawn + Culture	Group III Spawn + Culture + **Aconite**	Group IV + Spawn + Culture + **Belladonna**
15th day	16	No growth seen	6	5
16th day	24	No growth seen	14	9
17th day	26	Mushroom bed became yellowish in colour.	15	11
18th day	31	Mushroom bed is destroyed with brownish yellow discoloration	13	11
19th day	34	Destroyed	14	12
20th day	35	Destroyed	16	12





Conclusion

IN vitro analysis of the Pseudomonas tolaasii with the Homoeopathic Remedies

MEDICINES	GROUP 1	GROUP 2	GROUP 3	GROUP 4
ACONITE 200	0	0	5	0
BELLADONNA 200	0	0	0	3

Group III in which the spawn was soaked with Aconite was not affected with the bacterial infection and it manifest better improvement growth in the buds indicated with zone of 5 mm against *Pseudomonas tolaasii* while comparing with other samples. Thus Homoeopathic medicines plays a major role in rectifying the fungal infections (13,14) caused by various pathogens and it promotes the farmer's economic development by mushroom cultivation in numerous aspect of prosperous progressions. (15,16).

References:

1. Sheeba, S., Kumar, M. M., Raju, J., & Krishna, K. G. (2025). The properties of breastfeeding on the mother-dyad's health are vital: Further challenging to succeed. International Journal of Homoeopathic Sciences, 9(1), 642–644. https://doi.org/10.33545/26164485.2025.v9.i1.I.1417
2. Moreno. N, Awash. R Agro-Homeopathy – An Alternative for Agriculture. December. 2008 .http://hpathy.com/homeopathy-papers/agro-homeopathy-an-alternative-for agriculture /
3. The Application of medicines in Homoeopathy. National Journal of Homoeopathy: 1994 March/April Volume III No.2. Patro K. C. Materia Medica.
4. Sheeba, S., Merlin, A. B., & Suwaamy Naathan, K. (2024). Antibacterial effect of homoeopathic medicine Fucus Vesiculosus against various bacterial pathogens. African Journal of Biological Sciences, 6(14), 2851–2857. https://doi.org/10.48047/AFJBS.6.14.2024.2851-2857
5. Srinivasarao, C.H. "A study on long term manuring and fertilizer effects on depletion of soil organic "land degradation and development 25.2 (2011): 173-183.
6. Sahani M. Principles and practice of Homoeopathic Pharmacy for Students. 1st ed. B Jain Publishers (P) Ltd; 2007.
7. European Committee of Homeopathy. Homeopathic Drug Proving's Guidelines Version Available from: http: // www .homeopathy Europe. Org /publications/ guidelines/homeopathic- proving's /ECH_Proving_ Guidelines_v1.pdf [Last accessed on 2015 Feb 16]. Back to cited text no. 9.
8. Sheeba, S. (2024). Innovative advances in homeopathy: Based on Nano particles exploration. Nano medicine & Nanotechnology Open Access, 9(4), 1–5. https://doi.org/10.23880/nnoa-160003333
9. Hahnemann Samuel. The Chronic Disease Their Peculiar Nature and Homoeopathic Cure. 2005 edition. New Delhi: Kuldeep Jain, B. Jain Publishers (p) LTD; 2005.
10. Nash.E.B. Leaders in Homoeopathic Therapeutics with Grouping and Classification. New Delhi. Kuldeep Jain, B. Jain Publishers (P) LTD; 2002;
11. Sheeba S, Sylum SSV, Reghu R, Sanju S, Ramya SS, Krishna KG, Chenthik JPS. Decoding Homoeopathy: Nanoparticle Evidence and its Therapeutic Implications. Nano medicine & Nanotechnology Open Access. 2024;9(4):000323. doi:10.23880/nnoa-16000323
12. Kent J.T. Lectures on homoeopathic Materia Medica: together with Kent's" New Remedies" Incorporated and arranged in one alphabetical order. B. Jain Publishers; 1984.
13. Clarke JH. A dictionary of practical Materia Medica. Homoeopathic publishing Company; Fourth Edition;

Jain Publishers (P) LTD.1902.
14. Riley DS. Extracting symptoms from homoeopathic drug proving. Br. Homoeopathic J Fourth Edition; Jain Publishers (P) LTD. 1997.
15. Devika C, Arjun S, Indhumathi M, Sibin R and Sheeba S. Modern advances in nanoparticle: Based strategies for protagonist defensive and beneficial tactics against COVID-19. International Journal of Homoeopathic Sciences. 2025;9(3):965-968.
16. S. Sheeba, K. Gokul Krishna, S.M. Vipin Das, A.L. Mahadevi, K. Suwaamy naathan and Bright Cherian. Examining Kalmia latifolia's antifungal properties in the context of homoeopathic medicine: an in vitro study. Chinese Journal of Evidence-Based Medicine. https://doi.org/10.33472/AFJBS.6.6.2024.