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CASE SERIES

Novel Use of Cotrimoxazole in the Management of Fungal Infections in Household Plants

Sagarika Basavaraj[1*], Yugandhara Ghodke[2], Ganesh Pentewar[3], Anita Basavaraj[4], Sanjana Basavaraj[5]

[1]*Junior Resident, Department of Pharmacology, MAEER'S MIT Pune's MIMER Medical College and BSTR Hospital, Maharashtra, India*

[2]*Assistant Professor, Department of Pharmacology, MAEER'S MIT Pune's MIMER Medical College and BSTR Hospital, Pune, Maharashtra*

[3]*Head of Department and Professor, Department of Pharmacology, MAEER'S MIT Pune's MIMER Medical College and BSTR Hospital, Maharashtra, India*

[4]*Professor, Department of Medicine, B. J. Government Medical College, Maharashtra, India*

[5]*MBBS Student, Dr D. Y. Patil Medical College and Hospital, Pune, Maharashtra, India*

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** Corresponding author.*
Sagarika Basavaraj
sagarikabasavaraj7613@gmail.com

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ABSTRACT

The objective of the study is to document and evaluate the effects of cotrimoxazole combined with beclomethasone lotion on fungal infections in three household plants: bamboo (*Bambusoideae*), money plant (*Epipremnum aureum*), and hibiscus (*Hibiscus rosa-sinensis*). Three household plants with visible fungal infections were treated with a topical application of cotrimoxazole and beclomethasone lotion: **Case 1 -** Bamboo developed black fungal growth along one stem. Treatment daily for two weeks halted fungal spread; the middle section was removed, while the upper and lower segments recovered. **Case 2 -** Money plant exhibited white powdery fungal coating. Treatment twice weekly for three weeks led to complete resolution, with new healthy shoots and no recurrence. **Case 3 -** Hibiscus presented with dark circular fungal spots and reduced flowering. Weekly treatment for one month resulted in leaf recovery and resumption of flowering. All three plants showed suppression of fungal growth, preservation of healthy tissue, and partial or complete recovery. Bamboo survived despite partial stem loss, money plant fully recovered, and hibiscus regained both foliage and flowering capacity. Cotrimoxazole combined with beclomethasone lotion may offer a novel, unconventional approach for controlling fungal infections in household plants. Early intervention appears critical for full recovery. While anecdotal and uncontrolled, these observations suggest potential avenues for experimental plant pharmacology and warrant further controlled studies.

Keywords: Plant fungal infection, Cotrimoxazole, Beclomethasone, Bamboo, Money plant, Hibiscus, Case series, Plant pharmacology

INTRODUCTION

Plant health is constantly challenged by a wide range of fungal infections, especially during the rainy season when excess humidity creates the perfect breeding ground. [1] These infections not only ruin the beauty and vitality of ornamental plants but can also lead to significant losses in crops. [2] Among the common culprits are fungi such as *Aspergillus*, *Alternaria*, *Fusarium*, and powdery mildew, all of which are notorious for damaging leaves, stems, and roots. [3]

Traditionally, these problems are managed using chemical antifungal sprays, including copper-based mixtures, carbendazim, mancozeb, and triazoles. [4] While effective, these treatments are not without drawbacks, such as fungal resistance, environmental toxicity, and rising costs have become real concerns for farmers and home gardeners alike. [5] This has created a need for newer, safer, and more innovative solutions.

One surprising possibility is the repurposing of medicines originally made for humans. Cotrimoxazole (a combination of trimethoprim and sulfamethoxazole) is a well-known antibacterial drug that works by blocking folate metabolism in microbes. [6] Although it is rarely considered for fungal infections, some recent scientific explorations suggest that drug repurposing can open unexpected doors. [7] Alongside this, beclomethasone, a corticosteroid commonly used in dermatology for its anti-inflammatory effects, may have a role in reducing stress reactions in plants exposed to infection.

When used together, these two medicines could act in more than one way: cotrimoxazole may disrupt microbial communities that help fungi thrive, while beclomethasone might protect plant tissues from further damage. Although unconventional, such a combination raises interesting questions about whether human medicines might have unexplored benefits in plant health.

In this context, the following case series documents three instances that are bamboo, money plant, and hibiscus, where fungal infections were managed with cotrimoxazole and beclomethasone lotion, with promising outcomes.

CASE PRESENTATIONS

Case 1: bamboo (*bambusoideae*)

The first case concerned an indoor bamboo plant with 5 stems kept near the window. During the monsoon season, persistent rains led to heavy black fungal growth along one of the five stems of the bamboo plant. The affected region became soft and discoloured, with fragile tissues that threatened the stem's structural stability.

Intervention

A mixture of cotrimoxazole and beclomethasone lotion was applied directly to the infected portion every day for a period of two weeks.

Outcome

- The middle section of the plant was irreversibly damaged.
- The upper and lower segments regained colour after applying medication after 3 days.
- After the middle portion was removed, the lower stalk regained colour and continued to grow healthy.

This case demonstrated a significant success: while the infected region could not be salvaged, the intervention preserved plant life and enabled regrowth. Without treatment, a complete loss of the bamboo plant was likely.

Case 2: money plant (*epipremnum aureum*)

The second case involved a common indoor money plant grown in a hydroponic setup. The plant developed a fine white powdery coating across stems and leaf undersides. Leaves began yellowing and drooping, suggesting progressive fungal invasion.

Intervention

The cotrimoxazole and beclomethasone lotion mixture was diluted in water and lightly applied to affected regions twice weekly for three weeks.

Outcome

- By day 10, the fungal coating had reduced dramatically, exposing green stem surfaces.
- Leaves regained turgor, and drooping ceased.
- Within a month, new healthy shoots appeared, with no recurrence of fungal growth.

This case was notable for the complete recovery of the money plant, which transitioned from near-death to healthy, vibrant growth after treatment.

Case 3: hibiscus (*hibiscus rosa-sinensis*)

The final case involved a hibiscus plant that had been a long-time source of bright red blossoms. With the onset of rains, it developed dark circular fungal spots across multiple leaves. The leaves curled, dried prematurely, and fell, while flower production decreased dramatically.

Intervention

A diluted solution of cotrimoxazole with beclomethasone was sprayed evenly across infected leaves and stems once a week.

Outcome

- Within two weeks, infected leaves dried and fell naturally.
- New leaves grew in, fresh and disease-free.
- After a month, the plant resumed flowering, producing multiple healthy blossoms.

This case was especially encouraging because it not only controlled fungal spread but also restored functional vitality the plant’s ability to flower once again.

Table 1. Summary of case series: cotrimoxazole + beclomethasone in household plant fungal infections

Case	Plant (Species)	Presentation	Intervention	Outcome
1	Bamboo (*Bambusoideae*)	Black fungal growth along one stem, tissue softening and discolouration	Topical cotrimoxazole + beclomethasone lotion applied daily for 2 weeks	Middle portion irreversibly damaged; upper and lower segments recovered; overall plant survival achieved
2	Money plant (*Epipremnum aureum*)	White powdery coating on stems and leaves, yellowing and drooping foliage	Diluted cotrimoxazole + beclomethasone applied twice weekly for 3 weeks	Complete recovery: fungal coating resolved, leaves regained turgor, new healthy shoots, no recurrence
3	Hibiscus (*Hibiscus rosa-sinensis*)	Dark circular fungal spots on leaves, leaf curling, premature drying, and reduced flowering	Diluted cotrimoxazole + beclomethasone sprayed weekly for 1 month	Fungal spots resolved, fresh leaf regrowth, resumption of healthy flowering

DISCUSSION

Despite belonging to different species (bamboo, money plant, hibiscus), all responded positively to cotrimoxazole-based treatment. This hints at a mechanism beyond species-specific effects. Cotrimoxazole action is traditionally antibacterial, it interferes with folate pathways that some fungi also depend upon. Another hypothesis is that it eliminated bacterial co-pathogens that may have promoted fungal colonisation. Beclomethasone, although not antifungal, may have reduced inflammatory-like plant stress responses (such as oxidative injury), preserving surrounding tissues and allowing recovery. Together, may have provided microbial suppression plus tissue protection.

In bamboo (late treatment), the infection destroyed part of the plant but spared the rest. In the money plant (early treatment), recovery was near complete. In hibiscus (intermediate timing), recovery was good, with restoration of function. This highlights that early recognition and timely intervention remain crucial in plant fungal infections, as in human medicine.

Standard antifungal sprays are designed specifically for such conditions, yet here a human medicine offered comparable benefit. The accessibility of cotrimoxazole in household medicine kits may explain why it was tried, underscoring the role of curiosity and improvisation in plant care.

Limitations

These cases are uncontrolled observations, lacking microbiological confirmation of fungal species. Long-term effects of cotrimoxazole or beclomethasone on plant physiology are unknown. Not all plant fungi may respond; these results cannot yet be generalised to agriculture or large-scale horticulture.

Future Directions

- **Experimental validation:** Controlled trials comparing cotrimoxazole to standard antifungals.
- **Mechanistic studies:** Exploring how exactly cotrimoxazole interacts with plant pathogens.
- **Formulation studies:** Designing safer, plant-compatible formulations inspired by these preliminary observations.
- **Citizen science:** Encouraging plant enthusiasts to document similar experiences systematically.

CONCLUSION

This case series highlights three real-world experiences where cotrimoxazole combined with beclomethasone lotion unexpectedly helped control fungal infections in bamboo, money plant, and hibiscus. While unconventional and anecdotal, these outcomes open the door to new possibilities in plant pharmacology and experimental horticulture. Plants, much like humans, sometimes respond to unexpected therapies, and the repurposing of medicines across species deserves further attention.

Until larger studies provide evidence, such use remains experimental, but the experiences described here serve as a fascinating reminder of how innovation often begins at the margins of established practice.

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