

Abstract

# Potential Risk of Cyclopiazonic Acid Toxicity in Kodo Millet (*Paspalum scrobiculatum* L.) Poisoning <sup>†</sup>

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**Abstract:** Kodo millet, a staple food in North India, is frequently consumed, but its consumption can lead to intoxication and poisoning. Kodo millet is a rich source of nutrition, with anti-oxidant and medicinal properties, and is typically cultivated in dry and semi-arid regions. It is often infected by fungal species rather than bacterial and virus pathogens, causing economic crop loss and adversely affecting grain and fodder yield. Ergot, a parasitic fungal endophyte found in Kodo millet ear heads, can cause poisoning when consumed. Moreover, Kodo millet grains are frequently infested with *Aspergillus tamarii* Kita, which produces a significant amount of the mycotoxin cyclopiazonic acid (CPA). Cyclopiazonic acid (CPA) is a neurotoxin produced by certain *A. flavus* and *Aspergillus oryzae* strains, which produce aflatoxins. Mycotoxicosis outbreaks in humans are not well characterized, and the direct correlation between mycotoxin consumption and toxic effects In Vivo is not well established. CPA, a specific inhibitor of sarcoplasmic reticulum Ca<sup>2+</sup>-ATPase, can adversely affect broiler chicken health, as demonstrated by toxicological evaluation of aflatoxins and CPA alone or in combination. Most toxins have reported acute and chronic effects in prokaryotic and eukaryotic systems, including humans, despite the fact that their specific modes of action are unclear. This review explores fungal pathogens, the toxicity of CPA to animals and humans, both by itself and in combination with other mycotoxins, as well as biocontrol strategies and storage methods for better utilization of Kodo grains post harvest.

**Keywords:** Kodo poisoning; cyclopiazonic acid (CPA); mycotoxin; toxicity; *Paspalum scrobiculatum* L.



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