



Antifungal activity of Popular Indian herbs against *Aspergillus flavus*

• Preeti • Rashi Sinha • Lucky Rani
• Arti Kumari

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Corresponding Author : Arti Kumari

Abstract : *Aspergillus* belongs to the kingdom Fungi are filamentous fungi which have a wide species diversity. Among the pathogenic species of *Aspergillus* are *Aspergillus fumigatus*, *Aspergillus niger* and *Aspergillus flavus*. *Aspergillus flavus* is cosmopolitan in distribution and causes pre-harvest and post-harvest infections. It produces a toxic compound known as mycotoxin which when consumed by humans and animals is toxic. The current research was focused on isolation and identification of *Aspergillus flavus* from the stored peanut and other food materials and its control using some medicinally important plant extracts such as

Syzygium aromaticum, *Ocimum basilicum*, *Azadirachta indica*, and *Glycyrrhiza glabra*. All extracts were effective against *Aspergillus flavus* and were able to reduce the mycelial growth at 1% concentration and also they were able to reduce the production of secondary metabolite, aflatoxin as observed by thin layer chromatography (TLC). The most effective extract was clove ethanolic extract which completely diminished mycelia growth at 1% concentration.

Keywords: *Aspergillus flavus*, Mycotoxin, aflatoxin, Thin layer chromatography (TLC)

Preeti

B.Sc. III year, Industrial Microbiology (Hons.),
Session: 2017-2020, Patna Women's College,
Patna University, Patna, Bihar, India

Rashi Sinha

B.Sc. III year, Industrial Microbiology (Hons.),
Session: 2017-2020, Patna Women's College,
Patna University, Patna, Bihar, India

Lucky Rani

B.Sc. III year, Industrial Microbiology (Hons.),
Session: 2017-2020, Patna Women's College,
Patna University, Patna, Bihar, India

Arti Kumari

Assistant Professor, Deptt. of Industrial Microbiology,
Patna Women's College, Bailey Road,
Patna-800 001, Bihar, India
E-mail : artikumari231008@gmail.com

Introduction:

Aspergillus flavus belongs to the kingdom Fungi and it is a saprophytic and pathogenic (Machida et al., 2010) fungus which has a cosmopolitan distribution (Ramirez-Camejo et al., 2012). It is widely known for its colonization on cereal grains, legumes and tree nuts. *Aspergillus flavus* is a thermotolerant fungus, therefore, it can survive at temperatures that other fungi cannot (Hedayati et al., 2007). The optimum temperature for the growth of *Aspergillus flavus* is 37°C. The minimum and the maximum growth temperatures are 12°C and 48°C, respectively (Agrios et al., 2005). *Aspergillus flavus* in addition to causing pre-harvest and post-harvest infections, also produces significant quantities of toxic compound known as mycotoxin which when consumed by humans and animals is toxic (Agrios et al., 2005).

Aflatoxins are ubiquitous and they have been isolated from different food and feed used for human and animal consumption (Sinha et al., 1989). They are