

Annual Congress on

Mycology and Fungal Infections

November 16-17, 2017 Atlanta, Georgia, USA

Ergotism and the ergot fungus in Ethiopia

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Ergotism is a current human health problem on the Ethiopian highlands. A few outbreaks of ergotism in the country have been documented in the last few decades. The problem continues to date and a multi-purpose research was undertaken. Field studies showed that the problem is prevalent on highlands between 2,300- 3,000 m above sea level and where barley and wild oats (*Avena abyssinica*) are grown as major crops. It was found that *A. abyssinica* is the only cereal host for the Ethiopian ergot fungus. Based on molecular mycological studies, the fungus is characterized as a pathovar of *Claviceps purpurea*. Both gangrenous and convulsive ergotism are apparent in affected village communities with symptoms typical of ergotism. It was noted that extensive invasion by the fungus and development of the sclerotia on wild oats in farmers' fields and the consequent outbreak of ergotism in Ethiopia is unpredictable in time and space. Farmers, unfortunately, are not aware of the source and cause of the problem. Chemical analysis of ergot sclerotium showed that a cocktail of 16 toxic ergot alkaloids including ergocornine, ergocryptine, ergometrine, ergosine and lysergic acid derivatives are contained in the sclerotium. From studies based on affected communities, it was apparent that ingestion of the sclerotium from ergot infested oats is the cause of the problem. Prevention and control of ergot toxicosis requires a deeper understanding of environmental variables and a systematic ecological study.

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