**Research Article**

# Assessment the Incidence and Per cent Infection of Anthracnose *(Colletotrichum capsici)* in Dry Chilli Fruit Samples

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**Abstract**

Anthracnose of chilli caused by *Colletotrichum capsici* (Sydow) Butler and Bisby is an economically important disease of chilli affecting both fruit and seed quality. To determine the per cent seed infection, germination and per cent micro-flora associated with seeds of twelve dry red chilli samples were collected from twelve locations belonging to seven states of India *viz*., Rajasthan, Himachal Pradesh, Assam, Karnataka, Gujarat, Madhya Pradesh and Andhra Pradesh. These seed samples were subjected to assess the incidence of anthracnose experiment was conducted in the laboratory by growing on blotter paper. The results revealed that anthracnose severities in these samples were ranged from 4.1 per cent in "Guntur-Teja" of Andhra Pradesh to 34.0 per cent in "Pusa Jwala" from Jaipur (Rajasthan). Infected chilli seeds were subjecting to blotter method showed significant variations in seed germination and yielded various fungi. The maximum seed germination 85.0 per cent was recorded in Guntur-Teja while, minimum 52.5 per cent was in Pusa Jwala and Fatki chilli respectively. It was also recorded that the maximum (30.0%) fungal seed association was of *C. capsici* followed by *Aspergillus* (6.46%), *Cercospora* sp (5.0%), *Alternaria* sp (4.17%) and 3.96% by *Penicillium* sp across different chilli cultivar seeds.

**Key words:** Anthracnose, *Colletotrichum capsici*, chilli, micro-flora

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Anthracnose or ripe fruit rot of chillies (*Capsicum annuum* L) caused by *Colletotrichum capsici* (Syd.) Butler & Bisby has been reported as a major threat to sustainable cultivation of chilli throughout the world. In India, in severe cases, pre harvest and post-harvest losses may go more than 50 per cent (Pakdeevaraporn et al 2005; Than et al 2008). Recently, Hasyim et al (2014) reported the chilli anthracnose caused by *Colletotrichum* species can cause marketable yield loss from 10 to 80 per cent in some developing countries, particularly in Indonesia. The disease drastically reduces the quality and yield of fruit resulting in low returns to farmers. About 80 per cent of marketable yield is reduced in Thailand (Poonpolgul and Kumphai 2007), about 13 per cent in Korea (Yoon et al 2004). A perusal of available literature revealed that the pathogen *C. capsici* is seed transmitted in chilli in the form of acervuli and micro sclerotia and can also survive on plant debris and rotten chilli fruits in the field and other solanaceous or leguminous crops, (Pring et al 1995; Perenzny et al 2003). The symptoms of die back/ fruit rot/ anthracnose is seen on mature fruits resulting in both pre harvest and post harvest fruit loss (Bosland and Votava 2003). The present study is pertaining to assessment of incidence caused by anthracnose in dry chilli and the different microflora are responsible to increase the incidence in the storage.

## Materials and Methods

To assess the extent incidence of anthracnose in dry chilli the surveys were conducted in vegetable and fruit markets and spices market/mandies of Udaipur district and other states. Five hundred gram healthy as well as anthracnose infected chilli fruit samples were randomly collected from chilli stockists/ merchants belongs to different places of different states *viz*., Rajasthan (Jodhpur, Jaipur, Jhalawar and Udaipur districts), Himachal Pradesh, Assam,