



Research Article

Promising activity of kresoxim-methyl against turcicum leaf blight and rust of maize (*Zea mays* L.)

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ABSTRACT

Field experiment was conducted during the *Kharif* season of 2009 and 2010 to evaluate the efficacy of new fungicidal formulation, Ergon 44.3 per cent (w/w) SC (kresoxim-methyl 500 g/l SC) *vis-à-vis* Contaf (hexaconazole 5 % EC) and Indofil M-45 (mancozeb 75% WP) for the management of maize diseases of primary interest *viz.*, turcicum leaf blight incited by *Exserohilum turcicum* (Pass.) Leonard and Suggs. (Syn. *Helminthosporium turcicum* Pass.) and common rust incited by *Puccinia sorghi* Schw. Treatments that received Ergon twice @ 0.1 per cent, first at 30 days after sowing and second at cob initiation stage of the crop and, single spray of Ergon @ 0.1 per cent at cob initiation, tended to have the lowest disease severity and, subsequently, the highest grain yield and improved starch content of grain.

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INTRODUCTION

In Indian agriculture, maize (*Zea mays* L.) occupies an important place. It is not only utilized as a staple food by the lower strata of the society, but it is also a crop par excellence for industrial use. With the introduction of high yielding hybrids, both indigenous and exotic, and use of fertilizers, there has been a phenomenal increase in the area and production, but at the same time, it is prone to several foliar and stalk rot diseases (Payak and Sharma, 1980). According to Reis *et al.* (2004) and Pioneer (2007), among the main leaf diseases, that can reduce grain yield of maize, are the polysora rust (*Puccinia polysora*) and the common helminthosporiose (*Exserohilum turcicum*).

MATERIALS AND METHODS

The turcicum leaf blight also called as northern leaf blight caused by *Exserohilum turcicum* (Pass.) Leonard and Suggs. (Syn. *Helminthosporium turcicum* Pass.) is of worldwide importance (Carlos, 1997). In India, although as many as 18 foliar diseases are reported to occur on maize, turcicum leaf blight is the most serious disease and is prevalent in almost all the maize growing areas of country. Severe losses in grain

yield due to epiphytotics have been reported in several parts of India and these losses vary from 25 to 90 per cent depending upon severity of the disease (Chenulu and Hora, 1962; Jha, 1993). Apart from yield loss, the disease causes qualitative changes in the seed resulting in decreased sugar content and germination capacity, and severely infected plants are predisposed to stalk rot (Gowda *et al.*, 1992; Cardwell *et al.*, 1997). The disease causes leaf necrosis and premature death of foliage, which reduce the fodder value (Payak and Renfro, 1968; Payak and Sharma, 1985).

Common rust of maize caused by *Puccinia sorghi* Schw. is a common fungal disease of maize in Kolhapur region of Maharashtra. The disease causes extensive yellowing and premature desiccation of maize foliage resulting in leaf necrosis and complete destruction of photosynthetic areas. On an average, common rust reduces yield by up to 40 per cent (Danson *et al.*, 2008). The disease is widely distributed in India during *Kharif* and *Rabi* seasons, and becomes more conspicuous when plants approach tasseling stage. The yield losses under experimental conditions in susceptible cultivar have been observed up to 32 per cent (Harlapur and Wali, 2003).