

Sustainable Management of Fieldpea Rust through Induced Resistance

Deepak Singh¹, Ashish Kumar², Ajoy Kumar Singh³, H.S. Tripathi⁴

¹*Subject Matter Specialist (Plant Protection), Krishi Vigyan Kendra, Sitamarhi- 843 320 (Bihar), India
deepaksingh_pp@yahoo.com*

²*Senoir Scientist (Plant Pathology), Indian Agricultural Research Institute, Regional Station, Pusa, Samastipur- 848 125 (Bihar), India*

³*Zonal Project Director, Zonal Project Directorate, Zone-2, Kolkata-700097(W.B),India*

⁴*Centre of Advanced Studies in Plant Pathology, College of Agriculture, G.B. Pant University of Agriculture and Technology, Pantnagar- 263145, U.S. Nagar, Uttarakhand, India*

ABSTRACT

Field pea rust caused by *Uromyces viciae-fabae* (Pers.) de Bary is one of the most important disease adversely affecting its yield in India. The present investigation was conducted to find out some common, inexpensive, non-toxic and simple chemical compounds as abiotic elicitors of *Pisum sativum* L. cv. 'Aparana' in relation to active defense response as possible alternative in the management of fieldpea rust. Forty-three chemicals alone and their combinations were tested as spray/ basal treatment in Randomized Block Design with 03 replications during the year 2000-2003 to find out their role in induction of resistance. Out of 15 micronutrients tested only CuSO_4 and $\text{Na}_2\text{B}_4\text{O}_7$ were found most effective with 72-78 per cent reduction in rust severity, 38-57 per cent reduction in size of pustules and 83-92 per cent reduction in number of pustules per leaf of pea. Among micronutrients combinations A+ $\text{KAl}(\text{SO}_4)_2$ + CuSO_4 followed by A+ CuSO_4 + $\text{Ca}(\text{NO}_3)_2$ + $\text{KAl}(\text{SO}_4)_2$ were best in reducing disease severity in comparison to control. Among tested chloride form of micronutrient, organic acid and chemical the KCl, CuCl_2 , sodium azide and sucrose were found most efficient in respect to seed yield and reduction in rust severity. The results of the present study showed a strong possibility to protect fieldpea through their natural defense system by using inducer chemicals as integration in sustainable plant disease management strategy.