

First report of Chickpea Rust from Chhattisgarh

K P VERMA AND H. K. SINGH



J. Mycopathol, Res, 57(2) : 125-126, 2019;
ISSN 0971-3719

© Indian Mycological Society,
Department of Botany,
University of Calcutta,
Kolkata 700 019, India

This article is protected by copyright and all other rights under the jurisdiction of the Indian Mycological Society. The copy is provided to the author(s) for internal non-commercial research and educational purposes.

SHORT COMMUNICATION

First report of Chickpea Rust from Chhattisgarh

K. P. VERMA AND H. K. SINGH*

*Department of Plant Pathology, College of Agriculture, Indira Gandhi Krishi Vishwavidyalaya,
Krishak Nagar, Raipur 4920121, Chhattisgarh*

Received : 20.05.2019

Accepted : 22.05.2019

Published : 29.07.2019

Chickpea rust disease caused by *Uromyces ciceris-arietini* is being reported for the first time from Chhattisgarh state. Its symptomatology and microscopic examination are being studied.

Key words: Chickpea rust, Chhattisgarh, *Uromyces ciceris-arietini*, Urediniospores

Chickpea (*Cicer arietinum*), being rich source of protein forms an integral part of vegetarian diet in India. Through biological nitrogen fixation, it maintains soil fertility and thus important for marginal farmers with poor resources. The crop is grown on 280930 ha area with production of 218850 metric tonne in Chhattisgarh (Directorate of Agriculture, Chhattisgarh, 2015-16).

Vaibhav variety of chickpea is being cultivated extensively in Chhattisgarh. Small, round to oval, cinnamon brown powdery pustules (Fig. 1) were seen on leaves of few plants of vaibhav variety. Symptomatically disease appears to be chickpea rust caused by *Uromyces ciceris-arietini* (Nene *et al.* 2012). On microscopic examination of pustules,



Fig.1: Pustules on leaves



Fig.2: Urediniospores

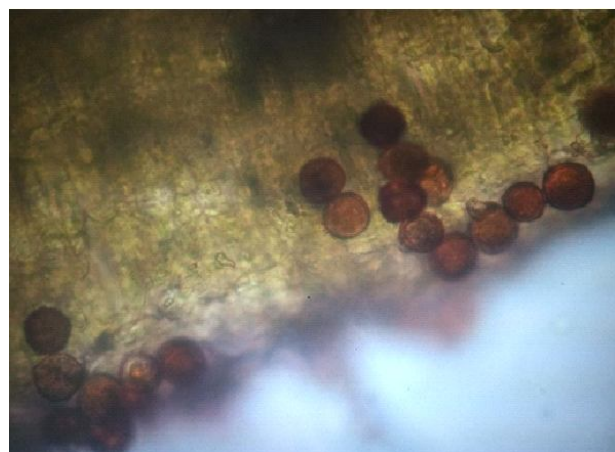


Fig.3: Urediniospores

*Corresponding author : harry.0452@gmail.com

urediniospores were observed. Urediniospores observed were globose, subglobose to broadly ellipsoid with echinulate surface walls and yellow to yellowish-brown to cinnamon brown colour(Fig.2,3).

Stuteville *et al.* (2010) observed uredinia of *Uromyces ciceris-arietini* as foliicolous and amphigenous or caulicolous, scattered to crowded, abundant, erumpent becoming pulverulent and cinnamon brown. Urediniospores were globose, subglobose to broadly ellipsoid or irregular; 23-31 × 20-23 μm; surface echinulate; walls variable in thickness from two to four μm with predominately six or seven scattered pores covered by hyaline caps, yellow to yellowish-brown to cinnamon brown.

Symptomatically as well as microscopically the disease confirms as chickpea rust caused by *Uromyces ciceris-arietini* (Order- Uridinales, Class-Urediniomycetes, Family-Pucciniaceae) . This is the first report of chickpea rust from Chhattisgarh state.

Nargund *et al.* (2011) surveyed and reported that during 2009-10 *rabi* season chickpea suffered heavily due to rust caused by *U. ciceris arietini*. This disease was noticed in 2006-07 on Bhima genotype in a sporadic manner in Dharwad location. During 2009-10 the severity of the disease was so severe that all the genotypes

grown at Main Agriculture Research Station, Dharwad encompassing germplasm lines, ICRIASAT collections, segregating populations and F1 of several crosses showed highly susceptible reaction to rust.

Even though chickpea rust is not known to cause as widespread damage on chickpea, it can occasionally be serious when conditions during the cropping season favour early epidemics. In a particularly favourable year, an epidemic of rust on Bengal gram in Karnataka, India, caused incidences of up to 90-100%.

Extensive survey as well as assessment of loss across the state has to be done to know the incidence and severity of the disease.

REFERENCES

- Nargund, V. B., Benagi, V.I., Salimath, P. M., Rao, M.S.L., Nagaraju. P. and Basavarajappa, M.P., 2011, *Effect of climate change in relation to severity of chickpea rust in northern Karnataka*. National Symposium on Integrated Disease Management Strategies in Relation to Climate Change in South India. October 14-15, 2011, Dharwad, Karnataka.
- Nene, Y.L, Reddy, M.V., Haware, M.P., Ghanekar, A.M., Amin, K.S., Pande, S. and Sharma, M. 2012. *Field Diagnosis of Chickpea Diseases and their Control. Information Bulletin No. 28 (revised)*. Patancheru, A.P. 502 324, India: International Crops Research Institute for the Semi-Arid Tropics. 60 pp. ISBN 92-9066-199-2. Order code: IBE: 028.
- Stuteville, D. L., Graves, W. L., Dixon, L. J., Castlebury, L. A., and Minnis, A. M. 2010. *Uromyces ciceris-arietini*, the cause of chickpea rust: New hosts in the Trifolieae, Fabaceae. *Plant Dis.*, **94**:293-297.