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PRELIMINARY SCREENING OF EXOTIC WHEAT GERMPLASM FOR RUST AND POWDERY MILDEW DISEASES

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Of the various constraints of wheat production, diseases such as yellow rust, brown rust and powdery mildew cause significant loss in yield. Although a large number of chemicals are available in the market for controlling the diseases but they are costly and local farmer sane not able to purchase them. Hence the cultivation of resistant and tolerant varieties is the only alternative to achieve good harvest. The present study reports the field reaction of some elite lines to yellow rust, brown rust and powdery mildew.

Seventy two accessions of exotic material in wheat germplasm were screened under epiphytotic conditions at NBPGR Regional Station, Bhowali during Rabi 2001-2002, which is known as "hot – spot" for rust and several other wheat diseases. The accessions were sown in three rows apart 2 meter with 10 cm x 23 cm spacing. Normal dosages of manures, fertilizers and other cultural practices were used. The outbreak and scoring of diseases were recorded under natural infestation. This centre provides good feasibility for effective screening the germplasm of wheat especially for yellow rust (*Puccinia striiformis*), brown rust (*Puccinia recondita*)and powdery mildew (*Erysiphe graminis* var. *tritici*) because of the appearance of the disease in sufficient spectrum. Percentage of leaf covered by yellow rust, brown rust, and powdery mildew were calculated, taking 10 hills from each microplots randomly at fortnightly intervals beginning 45 days after sowing. The disease intensity was also recorded simultaneously on a 0-9 scale.

Wheat is popularly grown in *Rabi* season in rainfed and irrigated areas of Uttaranchal due to its increased demand for food as well as low cost of cultivation. Powdery mildew of wheat is essentially a disease of the hills where it appears in severe form. Of late, it has been reported in plains also but so far its incidence is not high. At times it is reported from isolated places in Tarai areas.

Out of the Seventy two accessions Based on disease intensity , 06 entries for yellow rust 05 entries for brown rust and 09 entries for powdery mildew respectively were found highly resistant (<1 score) are listed below:

Yellow rust	:	EC-313752, EC-313755, EC-313766, EC-313757, EC-374964, PI-322278.
Brown rust	:	EC-313752, EC-313755, EC-374977, PI-347983, PI-348983.
Powdery mildew	:	EC-374112, EC-374970, EC-339630, EC-374912, PI-430057, PI-430062, PI-430083, PI-430092, PI-430130.

These accessions showed a good promise for multiple resistance to various diseases for the wheat and can be utilized for evolving disease resistant varieties. Breeding for disease resistant cultivars has been taken up by different centers under the All- India Co-ordinated Wheat Improvement Project. Therefore, the present results will be quite useful to the wheat breeders of the country.

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