range in their expression, which indicated the scope of improvement in these characters through selection. The maximum plant height was recorded in genotype Mysore Local (253.02 cm) and minimum in NBRI Sel. (209.19). EC-178313 (61.32) and NBRI Sel. (49.17) recorded the maximum and minimum numbers of pods/ plant, respectively. AKWB-1 was the earliest and took 79.89 days to come to 50 % flowering stage whereas the latest flowering took place in 84.66 days in EC-178331. The maximum and minimum weight of pod were recorded in AKWB-1 (17.38 g) and Mysore Local (14.06 g), respectively. In respect of green pod yield, AKWB-1 (1.1 kg/ plant; 183.33q/ ha) and EC-142665 (1.08 kg/ plant; 180q/ ha) were the top performing entries. Khurana *et al.* (1990) similarly evaluated 12 introduced winged bean lines at Hisar (Haryana) and reported the maximum green pod yield >100 q/ ha. In respect of pod shape, flat on sides, rectangular and semi-flat shaped pods were produced by four, three and two lines, respectively. The green, semi-flat podded line AKWB-1 was the earliest (79.89 days) and topped in respect of green pod yield (183.33 q/ ha) and green pod weight (17.38 g).The line also exhibited better performance in respect of plant height (233.45 cm), pod length (16.74 cm), pod breadth (2.29 cm) and number of pods/ plant (59.92). The green, flat podded line EC-142665 also exhibited better performance over general mean in respect of green pod yield (180 q/ ha), plant height (242.01 cm), pod length (17.52 cm), pod weight (16.80 g) and number of pods/ plant (60.96). Hence, the promising winged bean germplasm lines AKWB-1 and EC-142665 can be promoted for cultivation among the vegetable growers of Chhotanagpur region of Jharkhand to ensure nutritional security to the people of this region through large-scale production and consumption of this protein rich leguminous vegetable.

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Screening of ICARDA's Lentil Material for Rust Resistance in India

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Lentil (*Lens culinaris* Medik.) is an important pulse crop grown worldwide. Its ability to thrive well on relatively poor soils under diverse agro-climatic conditions has ensured its survival as a crop species to the present day. High protein content coupled with unique aroma of its culinary preparations impart a special position to human diet world over. The Indian subcontinent is the largest lentil-producing region in the world. However, the productivity of lentil has remained static for the past several years. In the recent years the severe incidence of rust in major lentil growing areas has been identified as a main production constraint of lentil. The lentil rust is caused by the fungus *Uromyces fabae* (Pers) de Bary. Under epidemic conditions it can cause up to 70-100% yield losses (Accatio, 1963-64, Sepluveda, 1985). Although effective chemical control measures are available to the some extent, development of resistant varieties is the most economic and eco-friendly means to control the disease. The systematic evaluation of germplasm and advanced breeding lines are essential component of resistance breeding. Therefore, the present work was conducted to evaluate diverse lentil genetic materials received from ICARDA, Syria.

A set of 255 lentil accessions was received from ICARDA, Syria in the form different nurseries (LIEN–L-04, LIEN–S-04, LIEN-E-04, LIDTN-04, LIABN-04, LIRN- 04) during *rabi* 2003-04. Another 55 accessions comprising earlier introduced materials from ICARDA and a few local varieties were also included in the experiment. Thus, total 305 accessions were evaluated at HPKV Regional Research Station, Dhaula Kuan, H.P., which is a hot spot for lentil rust. All the materials were grown in a single row plot of 2.5 m length along with checks in augmented plot design. With a view to facilitate proper screening, the row-to-row spacing was kept as 50 cm while plant-to-plant distance was maintained as 3-4 cm. The recommended agronomical practices were followed to raise a good crop except the application of any measures of disease control. Additionally, an infector variety was planted all around the experimental block to ensure enough inoculum for rust development. The natural epidemics of disease have been exploited for screening against rust. The disease started appearing in the first week of February, as yellowing white (muddy coloured) pycnia and aecial cups developed on lower leaf surface. The first week of March 2004 disease symptoms were clearly visible. Therefore, data on rust incidence were recorded twice, initially on 12.3.2004 and finally on 31.3.2004, as per standard procedures.

The dynamics of rust development on selected accessions revealed that the rust incidence varied from free (F) to 100S in the materials under study. A wide spectrum of rust incidence indicated the presence of adequate inoculum load, and, therefore, the data can be accepted for comparison. It was interesting to note that many genotypes which showed free reaction on initial screening (12.3.2004) were turned highly susceptible later (31.3.2004). These genotypes may be considered as fast rusting type. Some of such genotypes included ILL 9893, ILL 9845, ILL 9913, ILL 9112, ILL 9888, ILL 9844, ILL 4401, ILL 7207, L 4649, L 7706, and L 7711 etc. Likewise some of the genotypes exhibited moderate scores initially but attained highly susceptible response later. These genotypes can also be put under fast rusting group. Some of such genotypes were ILL 9891, ILL 9862, ILL 7979, ILL 9967, ILL 10000, ILL 8090, ILL 9958, ILL 9861, ILL 9945, ILL 9976, ILL 9924, ILL 10019, ILL 7618, ILL 9830, ILL 2580, ILL 7127, ILL 590, ILL 4401 etc. On the other hand few genotypes could maintain a very low level of rust incidence at both the stages. These can be considered as slow rusters. Some slow rusting genotypes included ILL 8184, ILL 9907, ILL 9926, ILL 9969, ILL 9921, ILL 7547, ILL 6821, ILL 9941, ILL 7177, L 7669, L 7510 and L 7512. Out of 305 genotypes evaluated, only 102 genotypes (33.4%) exhibited free reaction indicating the availability of very few rust resistant genotypes in lentil. However, some of these genotypes can be effectively used in lentil breeding for rust resistance based on their merit regarding other agronomic characters. Few other workers have also evaluated lentil materials for rust reaction and have reported almost similar results (Singh and Sandhu, 1988; Kumar *et al* 1997). It can also be emphasized that some of the popular varieties have also shown susceptible response. Therefore, immediate attention is required to develop rust resistant varieties. Another fact also needs a mention that the disease scoring should be done at appropriate stage (preferably two scorings) to avoid wrong classification of the genotypes.

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