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## Agrobiodiversity of potato (*Solanum tuberosum* L.) in Kashmir valley

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**Abstract :** Four local germplasm lines of potato (*Solanum tuberosum* L.) were evaluated at Experimental Farm of Division of Olericulture SKUAST-K Shalimar Srinagar during *Kharif* 2009. The analysis of variance revealed highly significant differences among genotypes for most of the traits. Different germplasm lines exhibited maximum values for different parameters studied. No single line exhibited maximum values for all the traits. The morphological features of tubers of Gulmarg Special being shallow tuber eyes, smooth tuber surface, flat tuber shape, yellowish light brown tuber skin colour and white flesh colour; of Hirpora being deep tuber eyes, smooth tuber surface, round tuber shape, reddish pink tuber skin colour and yellowish flesh colour; of Gurez Local being very deep tuber eyes, corrugated tuber surface, round tuber shape, deep red tuber skin colour and yellowish flesh colour while of Pahalgam Local being medium deep tuber eyes, smooth tuber surface, round tuber shape, yellowish light brown tuber skin colour and yellowish flesh colour. The PCV and GCV were high for all the traits under study except plant height, petiole length, tuber length, tuber diameter, average tuber weight and dry matter content of tubers. Heritability (bs) was high for all the traits under study except petiole length (very low heritability) and tuber diameter (moderate heritability). The values of genetic gain were moderate to high for all the traits except petiole length, tuber diameter and dry matter content of tubers. The characters that exhibited high heritability and moderate to high genetic gain *viz.*, plant height, number of shoots plant<sup>-1</sup>, average shoot weight, number of nodes plant<sup>-1</sup>, stem thickness, tuber length and average tuber weight indicate the predominance of additive gene effect, hence simple selection could be effective for crop improvement.

**Key words :** Characterization, Genetic variability, PCV, GCV, Heritability, Genetic gain, Potato, Genetic resources

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Potato (*Solanum tuberosum* L.) is one of the most valuable non cereal food crops grown in different parts of the world. It is a unique crop which can supplement the food needs of the countries like India, because of the fact that potato is a versatile, carbohydrate rich, contributing maximum dry-matter, protein and other nutrients per unit area and per unit time. Moreover in many developing countries and especially in urban areas, rising levels of income are driving a nutrition transition towards more energy dense foods and prepared food products. As a part of that transition, demand for potato is increasing. Kashmir valley which falls in the temperate zone, has a marked variation in temperature, precipitation and varied topography which offers a congenial habitat

for genetic diversity in various agri-horticultural crops including potato. A discussion on the plant genetic resources of potato (*Solanum tuberosum* L.) in Kashmir can generate a way to reduce the shrinking bio diversity. Inventorization and documentation of the crop is a pre requisite for long term conservation and planned breeding programme. The present article on the native genetic resource (Gulmarg Special, Hirpora, Pahalgam Local, Aadoo Local, Gurez Local, Tulail Local, Budnambal Local) of potato focuses mainly the traditional varieties that are being grown in this region with the exceptionally good quality and disease resistance traits that has suited through ages to the local consumers although the introduced varieties (Kufri Jyoti, Kufri Giriraj, Kufri