PP43: Effect of post-emergence herbicide metribuzin application on morpho-physiological traits, yield and yield components in lentil (*Lens culinaris* Medik.)

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Lentil (*Lens culinaris* Medik.) is an important cool season grain legume cultivated extensively in India, Canada, Turkey, Bangladesh, Iran, China, Nepal and Syria. It is the second most important cool season food legume crop next only to chickpea in India, and is grown on about 1.42 million hectares with a production of 1.13 million tonnes. It is a poor weed competitor and most annual grasses and broadleaf weeds compete with it throughout the growing season for nutrients, water, and light, and thus reducing crop yields (20-80%) and grain quality and also harbour insect-pests and diseases. At presently there is no suitable post-emergence herbicide for weed control as the lentil is sensitive. Thus, a set of 180 diverse lentil genotypes was screened against post-emergence herbicide metribuzin applied @ 250 g ha^{-1} at 50 days after sowing to identify tolerant genotypes. Based on preliminary screening, 30 lines including tolerant, moderately tolerant, sensitive and highly sensitive lines were selected for further evaluation on larger plot using same herbicide dose to see the effect of herbicide on morpho-physiological traits, yield and yield components. Herbicide metribuzin application showed adverse effect on most of the traits including yield of lentil genotypes. In herbicide treated plots, 50% flowering and pod initiation was delayed, while plant height, biomass accumulation, leaf area index, specific leaf weight, crop growth rate and chlorophyll content were reduced as compared to untreated plots. The 100-seed weight, pods $plant^{-1}$ and seed yield were also reduced in herbicide treated plots. Overall, six genotypes namely LL699, LL931, LL1383, LL1384, LL1385 and LL1367 showed less reduction (<19%) for seed yield and for other traits, while two genotypes LL1365 and LL1393 showed more reduction for seed yield and other traits as compared to untreated plots.