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Induced immune defense in *Brassica juncea* (L.) Czern. against *Lipaphis erysimi* (Kalt.) *via* altered photosynthetic and enzymatic levels

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Deviations in the biochemical composition and the formation of secondary metabolites have all been linked to the metabolic fluxes that underlie plant resistance. The current investigation was undertaken to know the induced defence against *Lipaphis erysimi* (Kalt.) *via* altered metabolic flux in *Brassica juncea* (L.) Czern. Pusa Mustard 30, RH 749, NRCHB 101, DRMR 150-35, RH 0406, Pusa Mustard 27 and Pusa Vijay had higher levels constitutive photosynthetic pigments, activity of constitutive enzymes and total glucosinolates, except in a few cases. However, due to infestation by the *L. erysimi*, the levels of photosynthetic pigments and total glucosinolates significantly decreased, while the activity of antioxidative enzymes and myrosinase increased. However, decrease in the photosynthetic pigments was significantly higher in NRCHB 101, RLC 3, DRMR 150-35, Chattisgarh Sarson and Pusa Double Zero Mustard 31, except in a few cases. Further, RH 725, Pusa Mustard 26, DRMR 150-35, NRCHB 101 and RH 0406 displayed significant enhancement in the antioxidative enzymes, except in a few cases. Total glucosinolate content reduced significantly in Pusa Mustard 26, DRMRIJ 16-38, NRCHB 101, DRMR 150-35 and RH 749, while the activity of myrosinase enhance notably in Pusa Vijay, Pusa Double Zero Mustard 31, Pusa Mustard 25 and NRCHB 101. Present study displayed phytochemicals defence against *L. erysimi* through shift in the levels of various pigments, enzymes and glucosinolate content. Cultivars RH 725, Pusa Mustard 26, DRMR 150-35, NRCHB 101 and RH 0406 showed significant variation the induced levels of various phytochemicals and enzymes, thus cane be used in *Brassica* breeding programme.

Keywords: Chlorophyll, Carotenoids, Enzymatic defence, Glucosinolate-myrosinase, Mustard aphid, Photosynthetic pigments