

Concomitant Exposure of Bacoside A and Bromelain Relieves Dichlorvos Toxicity in Mice Serum

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Abstract : Current study emphasizes the toxic effects of dichlorvos on serum in terms of oxidative stress. Meanwhile, a protective action of bacoside A and bromelain was investigated against the biochemical alterations in serum. The experimental design included six groups of mice: saline was given as a vehicle to the control mice (group I). Mice belonging to groups II, III and IV, were administered with dichlorvos (40 mg/kg b.w.), bromelain and bacoside A, respectively. The fifth group received a combination of bromelain and bacoside A. In group VI, Bacoside A, and bromelain were administered 20 minutes prior to exposure of dichlorvos. Thiobarbituric acid reactive substances (TBARS), protein carbonyl content (PCC), catalase (CAT), superoxide dismutase (SOD), glutathione peroxidase (GPx) and reduced glutathione (GSH) level were used as biochemical test of toxic action for dichlorvos intoxication. Significantly increased TBARS and PCC level in second group suggests that dichlorvos enhances the production of free radicals in serum of mice ($p < 0.05$). Antioxidants treatment significantly decreased the levels of TBARS and PCC ($p < 0.05$). Dichlorvos administration causes a significant reduction in the level of CAT, SOD, GPx and GSH ($p < 0.05$) which was restored significantly by co-administration of bromelain and Bacoside A in dichlorvos exposed mice ($p < 0.05$). Treatment of bromelain and Bacoside A in combination served as better scavengers of toxicity induced by dichlorvos.

Keywords : bacoside A, bromelain, dichlorvos, serum

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