



Abstract

Excessive use of synthetic pesticides has become a major cause of population decline of farmland birds. Synthetic pesticides harm the birds either directly or indirectly. The eating of pesticide coated seeds not only causes mortality in birds but also affects the survival of insectivorous birds through their toxic constituents in food. Present study was designed to evaluate the impact of imidacloprid on feeding behavior and physiology of birds, using domestic pigeon as a model bird. Twenty five mature birds were divided into five groups. Control group was provided with imidacloprid untreated seeds. However, experimental groups were fed with imidacloprid treated seeds. Another choice and no choice experiment was performed to record the avoidance behavior of pigeons. For this purpose, experimental groups were given choice either to feed on imidacloprid treated seeds or untreated seeds. Birds when given choice to feed on either untreated seeds or imidacloprid treated seeds. Birds showed feed aversion behavior from imidacloprid treated seeds and preferred eating untreated seeds. However, experimental birds which were only allowed to feed on imidacloprid treated seeds, showed a significant increased level of superoxide dismutase (SOD) enzyme activity than control group. Moreover, a significant increase in the level of Aspartate Aminotransferase (AST) and Alkaline Phosphatase (ALP) was observed than the control. However, there was non-significant increase in the level of Alanine aminotransferase (ALT), Bilirubin, Creatinine and Blood urea nitrogen (BUN) in treated birds. The examined tissues of heart, liver and kidney revealed histo-morphological alterations in treated groups as compared to control. It is concluded that imidacloprid treated seeds induced oxidative stress and damaging effects in heart, liver and kidney of exposed pigeons. Thus use of imidacloprid should be prohibited in agricultural fields.