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Pesticide Residue Analysis in Hilly Pea Samples by Coupling Quechers Technique with Gc-ms

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Abstract

Pea is most popular and widely grown, annual pulse grain playing an important role in the upliftment of the economy of hilly area farmers. The application of chemical pesticides have increased in recent time, but has gradually contributed to increased environmental hazards, soil deterioration, thus disturbing the beneficial microbes and biological balance, leading to various dreadful diseases like cancer. Keeping in view the above burning criteria, the studies were conducted focusing on the in-conversion phase of a chemical cultivation system to an organic cultivation system. The results highlight the various parameters like soil health and pesticide residual analysis and their differential behaviour in both the systems (Chemical and Organic). A baseline survey was conducted for comparing differences in behaviour of farmers towards in-conversion phase for which SOGG group (Salogara Organic Growing Group) of Solan-HP was taken in to account, whereas Basal area farmers were selected or chemical cultivation pattern of pea cultivation. A comparative analysis was drawn between two systems. The GCMS analysis highlightes that the residue of Dinocap (0.58 ppm) in market pea sample and Propiconazole (0.037ppm) in chemical pea sample were above the MRL limits and no pesticide residues were found in organic pea samples. The pesticide residues were not found in the organic samples and they were above the limit or at par in the chemical pea samples and market pea samples. It can be concluded from the present studies that by adopting appropriate combination of organic production technologies, productivity levels comparable to those under conventional practices can be achieved in tomato with better quality produce, improved soil health and nutrient status.

Key words: In-conversion farming, soil health, pesticide residue, QuEChERS, GCMS

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