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P83: PERSISTENCE OF HERBICIDES IN SOIL

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Herbicides are the most commonly used method in our country and worldwide for the control of weed due to easy application, getting the result in a short time, having long lasting and powerful effect. Herbicides usage firstly started in 1940's and have nowadays increasingly become the most important and indispensable control method in agricultural production. Herbicides used for long times to increase the production of agricultural activities and to provide the sustainability lead to persistence problems in soil and also contamination of both underground and surface waters. Herein; it is aimed to point out the contamination of soil which is important for agriculture and sustainability by herbicides and to evaluate the factors affecting the soil persistence of herbicides.

Duration of time herbicides remain active in soil is called "soil persistence" or "soil residual life". Soil persistency of herbicides depends on the chemical composition of herbicides, soil properties, climatic conditions and each one strongly interact with one another. Soil properties are of three types as physical composition, soil chemistry and microbial activity. Climatic factors affecting soil persistency of herbicides are moisture, temperature and sunlight. Factors affecting herbicide persistence and concentration in soil include mainly microbial degradation, chemical degradation, soil adsorption, volatilization, photodegradation, plant uptake and metabolism, leaching and surface runoff.

Residues of herbicides in soils, at which agricultural plants are grown, affect human health adversely by being taken the herbicide by the roots of the cultural plant itself and the subsequent plant; correspondingly through nutrition of humans, lead to perish soil microorganisms and worms partially or totally, mix underground water by seepage or into air by volatilization. Application methods of herbicides play important role for preventing these problems. Therefore, especially label information, chemical properties, formulation, dose before using herbicides; soil properties, climatic conditions and calibration during application should be paid attention.

Keywords: Degradation, Herbicide persistency, Leaching, Soil, Volatilization