

Project title: Determination of Agricultural Nitrate and Phosphorus Pollution Using ArcSWAT Method in Menemen Plain - Example of Seyrek Secondary Irrigation Area

Research Area	Sustainable Soil and Water Management
Research Program	Soil Health (Quality) and GIS
Executive Institute	International Agricultural Research and Training Center
Supporting Institute/s	
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Research Period	01/01/2020 – 31/12/2020
Project Summary: <p>Sustainability in agricultural production depends not only on the optimum use of soil and water resources but also on the pollution of the resources. The sustainability of agricultural production constitutes an important production ring of healthy food chain and food safety. The determination of the source of pollution that causes pollution of natural resources depends on the existence of these resources.</p> <p>With this project, it is aimed to determine the nitrate and phosphorus pollution of agricultural origin in the Seyrek secondary irrigation field by using the ArcSWAT (Soil and Water Assessment Tool) method. ArcSWAT required many GIS (Geographic Information Systems)-based physical substrates parameters which are digital elevation map, land use map, soil map, meteorological data and agricultural applications in the study area.</p> <p>Grid system will be applied to the study area in GIS and 0,5 km x 0,5 km of soil samples will be made, and the coordinates will be determined for each point. In addition, land use and coordinates will be recorded at the land sampling points.</p> <p>Water samples will be taken from the strategically important surface and ground water bodies and both the lower basin outlet point and the source properties.</p> <p>The number of producers to represent the whole area will be determined, and information on the agricultural activities will be collected.</p> <p>As a result of all studies, agricultural-based nitrate and phosphorus pollution in Seyrek secondary irrigation area will be modeled and current situation will be determined, and appropriate management plans will be developed accordingly.</p> <p>Key words: Seyrek Secondary Irrigation Area, Agricultural nitrate and phosphorus pollution, ArcSWAT, Geographic Information Systems</p>	