**Developing a Potential Hazard Index for Nitrate in the Southwest States**

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Surface and ground waters in southwestern states are often impaired by nutrient runoff and leaching from irrigated agriculture. While action to enhance the quality of surface waters will be addressed through TMDLs, degradation of aquifers under agricultural lands is a growing problem. Adoption of best management practices (BMPs) is the most effective way to prevent both surface and ground water quality degradation from agricultural operations. However, an assessment of potential problems in management practices should be conducted before BMP(s) are chosen or implemented. Several nitrogen indices have been developed to help growers assess nitrate leaching potential, but they are not directly applicable to irrigated agricultural lands found in the Southwest.

The goals of this project are to develop a nitrate hazard index (HI) specific for irrigated agriculture, and to provide education and training to help advisors, consultants, and growers use the index to improve water quality. The HI will assign a hazard value based on leaching and denitrification potential of the soil, root system of the crop, and irrigation system(s) used. Computer models such as NLEAP or ENVIRO-GRO will be used to validate the ranking method. The hazard index approach will aid growers in the assessment of their management practices and identification of appropriate BMPs for the reduction of nitrate leaching.