Phosphorous Best Management Practices in the North Bosque River Basin using APEX Manure Management Component. (S06-saleh134615-Oral)

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Abstract:

The long-term effectiveness of selected phosphorus (P) best management practices (BMPs) in reducing phosphorus concentrations and loadings to surface waters and within soils was evaluated using the Agricultural Policy and Environmental Extender (APEX) model. The model was calibrated to field data and applied to major soils and crops in common use within the North Bosque River watershed. APEX modeling evaluated two general scenarios. The baseline scenario considered nutrient management based primarily on the N agronomic needs of the crop, until the soil reached a level of 200 ppm extractable P in the 0-15 cm (0-6 in) layer, at which time, manure was applied at the P agronomic rate. The BMP scenario implemented manure management based on the P agronomic needs of the crop versus the P level in the soil. Three cropping systems and three soil types were simulated for period of 30 years. The APEX results indicated a decrease of PO4-P and total phosphorus (TP) loads of between 40 and 60 percent from edge-of-field runoff across cropping systems and soil types. Particulate phosphorus (PP) loads generally decreased in the BMP scenario compared to the baseline.

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