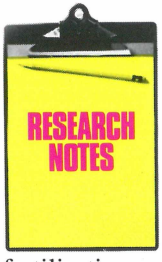
and surface water deserves a much lower priority for national concern about the environment than it is receiving. Surely there are environmental concerns about water quality that deserve more national concern. For those who feel that a "high phosphate" environment is of paramount concern, I would invite you to visit Kentucky's Bluegrass or Tennessee's Central Basin regions and see for yourself what existence is like in a naturally high phosphate environment.

As an epilogue, I would point out that I do not advocate overuse of fertilizer, point-source disposal of manure, or soil erosion. What I'm really suggesting is use of some common sense in development of national issues to which regulatory responses can often unduly affect our nation's agricultural system.

I'll close with two challenges: 1) If there is a great nationwide concern about this situation by the scientific community, the Council on Agricultural Science and Technology (CAST) should be asked to develop a white paper assessing the situation to ascertain its importance. 2) Before implementing a "Phosphorus Index" for soils into its Technical Guides in the U.S., the SCS should widely field test this index and obtain "ground truth" of its validity and effects it may have on prevalent and recommended agricultural practices. ■

Oklahoma



Ammonium and Nitrate Nitrogen in Soil Profiles of Long-Term Winter Wheat Fertilization Experiments

OBJECTIVES OF THIS STUDY were to evaluate the long-term response of winter wheat to nitrogen (N) fertilization and to determine the accumulation of ammonium-N (NH_4-N) and nitrate-N (NO_3-N) in the soil profile.

Four long-term experiments (greater than 18 years) on soils that had received selected annual N fertilization were sampled. Soils were either silt loam or clay loam in texture. At each location, one soil core 1.75 inches in diameter and to a depth of 8 feet was taken from plots receiving variable N rates. Each core was segmented into 12-inch increments and analyzed for NH_4-N and NO_3-N. Results were as follows:

- At all locations, NH_4-N levels were not significantly different from the zero N treatment when N was applied at or below yield goal requirements (80 to 40 lb/A N). Similar results were obtained for NO_3-N.
- When N rates exceeded 80 lb/A, NH_4-N levels in the upper 6 inches increased above the zero N treatment, while there were no differences in subsurface layers. At the excessive N rate, NO_3-N did accumulate at depths greater than 12 inches.

In summary, researchers found that N accumulation . . . either as NH_4-N or NO_3-N . . . is not a problem in soils where recommended N fertilizer rates are applied. ■

Source: Westerman, R.L., R.K. Boman, W.R. Raun and G.V. Johnson. 1994. Agron. J. 86:94-99.