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NUMERIC NUTRIENT CRITERIA FOR WATER QUALITY— ARE YOU AWARE OF RECENT EPA ACTIVITIES?

States and tribal agencies have had the responsibility in the USA to establish nutrient criteria for water quality protection, based on the Clean Water Act. According to the U.S. Environmental Protection Agency (EPA), over 10,000 nutrient and nutrient-related water quality impairments have been listed among 49 states. Some states and tribes have made progress in moving from “narrative” nutrient criteria to “numeric” criteria for the protection of surface water resources, while others have faced more challenges. Learn more at this website: <http://www.epa.gov/waterscience/criteria/nutrient/strategy/status.html>. Because of well-recognized regional water quality issues such as the Chesapeake Bay and the northern Gulf of Mexico, and prominent coastal issues as in Florida and California, there are increasing pressures to advance establishment of numeric criteria for surface waters. Numeric nutrient criteria may be used to establish standards, which enable determination of Total Maximum Daily Loads (TMDLs).

The EPA has initiated the formation of an ad hoc technical committee to advise the Ecological Processes and Effects Committee (EPEC) of its Science Advisory Board (SAB). Website: <http://yosemite.epa.gov/sab/sabpeople.nsf/WebCommitteesSubcommittees/Ecological%20Processes%20and%20Effects%20Committee>. This new ad hoc nutrient criteria committee is being asked “To augment the expertise of the EPEC”... “with specialized knowledge in the use of empirically-derived stressor-response relationships as the basis for developing nutrient assessment endpoints and criteria for the protection of aquatic life”. A “short-list” of 27 nominees for the nutrient criteria committee has been formed, listed at this site: <http://yosemite.epa.gov/sab/sabproduct.nsf/02ad90b136fc21ef85256eba00436459/5972e2a88464d45e85257591006649d0!OpenDocument&TableRow=2.1#2>

In the absence of state and tribal numeric water quality nutrient criteria, the EPA has advocated since 2001 ecoregional criteria for N and P. Website: <http://www.epa.gov/waterscience/criteria/nutrient/ecoregions/>. The criteria are largely based on a simple statistical approach using overlapping data from monitored vs. selected “reference” waters. This newly-formed EPA science committee may establish new numeric nutrient (e.g. N and P) criteria for lakes, reservoirs, rivers, streams, and wetlands in fourteen ecoregions, based on the risk of biological impacts of nutrients. If states and tribes have not established numeric criteria, or have not sufficiently addressed development of numeric criteria, EPA’s ecoregional nutrient criteria may be imposed.

In addition to these actions, the EPA will soon release a report of its Integrated Nitrogen Committee, which will be calling for more control of the human-induced releases of reactive N (basically, all N forms other than atmospheric N₂, which makes up 78% of the air we breathe) into the environment. Taken collectively, these water quality actions by EPA underscore the need for intensified efforts by farmers, as well as the urban public (homeowners, turf managers, etc.) to embrace and to implement fertilizer best management practices (BMPs) based on the 4R Nutrient Stewardship encouraged by the fertilizer industry. If you are not familiar with the BMPs that support the 4R principles (right source, right rate, at the right time and right place), talk with your Certified Crop Adviser, ag consultant, Extension educator, or fertilizer industry representative to learn more. Expanded implementation of 4R Nutrient Stewardship to protect water quality, while enhancing crop production and efficient nutrient recovery, may help prevent the risk of undesirable regulatory actions.

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Abbreviations: N = nitrogen; P = phosphorus; BMPs = best management practices.