Big Pine Creek Watershed Project

Best Management Practices Fact Sheet

Nutrient Management

Nutrient Management is management of the amount or rate, source, placement or method of application, and timing of plant nutrients and soil amendments. Nutrient management is an essential part of effectively managing crops for maximum productivity. Limiting crop nutrition, especially during critical times throughout the season, will only have detrimental impacts on plant health and will ultimately have negative impacts on yield. The goal with sound nutrient management is to ensure that the crop has access to the optimum nutrition at the right time for maximum productivity. Principles of the 4Rs of nutrient stewardship (http://www.nutrientstewardship.com/what-are-4rs) can provide examples of best practices that can optimize nutrient use efficiency and decrease instances of negative off-site impacts of nutrient applications.

Purposes of sound nutrient planning include, but are not limited to:

- Providing the right nutrient source, at the right time, in the right place and at the right rate to maximize plant nutrition, ensure plant health, and maximize yield
- Reducing off-farm impacts by only applying enough fertilizer to meet crop nutrient needs using principles identified in the 4Rs of nutrient stewardship to minimize losses to the environment

Examples of nutrient management practices that can help to improve nutrient use efficiency by the crop include, but are not limited to:

- Altering the timing of nitrogen application to a corn crop so that smaller doses of nitrogen are being applied at various crop growth stages that correspond with crop nutrient needs.
    - Example – reducing fall nitrogen applications and moving to either a split application that uses 50% of N application in the fall and 50% in the spring, a 100% spring application, or a 50% spring application of nitrogen with a 50% rate side-dress after crop emergence.
- Using time-release products that help to manage the timing of nitrogen release that better correspond to the nitrogen needs of the crop and can increase nutrient use efficiency.
    - These kinds of products can be either a nitrification inhibitor (N-serve for anhydrous ammonia or Instinct for manure) or coated products (like ESN Smart Nitrogen, or Agrotain for dry products)
- Using a high-boy sprayer and crop canopy sensor that can detect nitrogen needs in a standing crop using the crop color as the basis for a late season nitrogen application.
- Ensuring that proper soil testing procedures are taking place on a regular schedule to provide evidence of available crop nutrients resident in the soil so that additional nutrient applications can be planned to augment available soil nutrients and reduce over-application.
- Taking credit for manure applications when planning soil nutrient applications, and ensuring that proper nutrient testing is taking place for manure to identify the nutrient content.
- Using soil types or soil sampling to identify management zones within a farm, and using variable rate technology to better target nutrient needs to each management zone. This will work to minimize over-application of nutrients to those areas of a farm that do not have high yield

Contact Info for the Soil & Water Conservation Districts in the Big Pine Creek Watershed

Benton County: Jon Charlesworth	*765-884-1090 x3*	*jon.charlesworth@in.usda.gov*
Warren County: Deb Lane	*765-762-2443 x3*	*debra.lane@in.nacdnet.net*
White County: Sharon Watson	*574-583-5962 x3*	*sharon.watson@in.nacdnet.net*

- potential and will target higher applications to those management zones that do have a higher yield potential.
- Banding nutrients between crop rows as opposed to broadcasting them across a field to improve placement, which will facilitate more efficient crop uptake of those nutrients.
- Using cover crops over the winter months to help capture and fix nutrients that can be used by the following year's cash crop.

Available financial assistance**:**

The Big Pine Creek Watershed group will be offering cost-share incentives to help producers adopt best management practices (BMPs) aimed at reducing the amount of nutrients, sediment and bacteria entering our surface waters. **Nutrient Management** is one of the BMPs we want to encourage. The financial incentive for nutrient management will come in the form of reimbursement of 75% of the total nutrient management planning costs based on USDA – NRCS cost estimates. The reimbursement will be capped at a total of 300 acres per application.

- Applications for cost share assistance are available from the Soil & Water Conservation District offices in Benton, Warren and White counties.
- Closing dates for ranking periods are still to be determined. Please check the watershed group's webpage which can be accessed via the Benton County SWCD website bentoncountyswcd.org
- Applications will be ranked based on merit. Pairing nutrient management planning with other conservation practices such as no-till/strip till, filter strips or cover crops will increase the ranking score of the application.
- Successful applicants will sign a contract outlining out the terms of the cost-share agreement.
- Cost share for nutrient management planning will go towards the cost of equipment upgrades that will enable more efficient nutrient management, or agronomic assistance to complete a comprehensive nutrient management plan that identifies crop rotations, crop nutrient needs and defines appropriate nutrient sources application rates, timing and placement strategies based off of sound nutrient management planning principles.
- All nutrient management plans will be reviewed to ensure that they meet USDA – NRCS standards and specifications as identified in the Indiana nutrient management practice standard (Practice Code 590). This standard can be found online at http://efotg.sc.egov.usda.gov/references/public/IN/590_Nutrient_Management.pdf.