

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION**

590 - NUTRIENT MANAGEMENT - TREE AND VINE CROPS

I. SCOPE

This specification is applicable to long-term plantings such as apples, cherries, peaches, grapes, etc., and semi permanent crops that typically receive nutrients annually. Annually planted crops such as corn, dry beans, onions, or small grains, and pasture, alfalfa, or other hay crops, are not eligible.

II. PLANNING REQUIREMENTS

A. Plant Tissue, Soil and Organic Nutrient Sampling Plan

1. Provide a tissue, soil and organic nutrient sampling plan to NRCS. Tissue sampling is required for nutrient applications other than nitrogen. The plan should be compatible with CSU recommendations where current and available. Where CSU guidelines are not available or modified to account for new or localized conditions, work with local CSU Extension and other local experts as needed to establish appropriate guidelines for sampling. Consider macronutrients and micronutrients in the sampling plan.
2. A soil sample is required for new plantings, fields that require soil amendments to improve nutrient availability, fields where nutrient applications include organic materials such as manure, or if the current soil sample for the site is more than 5 years old. Analyze soil samples for primary nutrients, secondary nutrients as applicable, pH, salinity parameters and organic matter, as a minimum.
3. Soil test laboratories acceptable to NRCS participate in the North American Proficiency Testing Program (Soil Science Society of America).
<http://www.naptprogram.org/about/participants/>
4. Organic nutrient sampling is required for application of manure, compost or other organic nutrients and other organic by-products to determine nutrient content.

B. Nutrient Application Plan

1. Provide a nutrient application plan to NRCS that considers both macronutrients and micronutrients. List all planned nutrient applications by field. Show amount, form, approximate timing and methods of applications. Account for nutrients available in the soil, irrigation water, and other significant sources, as appropriate. Use annual tissue tests, yield data and other appropriate considerations to set fertilization rates. Where existing CSU guidelines are unavailable or modified to account for new or localized conditions, work with local CSU Extension staff and other local experts as needed, to establish guidelines for fertilizer applications.
2. Evaluate the mid-season nitrate concentrations of irrigation water sources to estimate the nitrogen delivered with irrigation water by sampling, or with analyses provided by an irrigation water provider. Consider the amount of nitrogen supplied by the irrigation water when planning nitrogen applications.
3. Provide a field specific phosphorus runoff risk assessment to NRCS for nutrient application plans that include organic nutrients such as manure or compost. Document risk assessment results with the Colorado Phosphorus Index.
http://efotg.nrcs.usda.gov/references/public/CO/COATN_95.pdf

4. Approval by a Certified Nutrient Management Specialist is required for nutrient application plans. Certification programs acceptable to NRCS in Colorado include the American Society of Agronomy Certified Crop Advisor Program (<https://www.certifiedcropadviser.org/find/>), and National Alliance of Independent Crop Consultants (<http://www.naicc.org/Dir/CPCC.cfm>)

C. Irrigation Water Management

1. Irrigation Water Management consistent with NRCS practice standard 449 planning criteria is required for irrigated sites for the site year that corresponds with the Nutrient Application Plan. Good water management is essential for efficient nutrient management.

D. Document Plan Implementation

1. Provide NRCS with field specific records to complete the nutrient management plan.
 - a. Field ID, crop, and yield
 - b. Laboratory nutrient analysis of plant tissues, soils and organic nutrients as required. Organic nutrients include manure, compost, other organic by-products and commercial organic fertilizers. Certified nutrient content is acceptable for commercial organic fertilizers.
 - c. Quantities of all fertilizers, manure, nitrogen applied with irrigation water, and other nutrient applications including dates, amounts, forms and methods of applications
 - d. Irrigation dates and amounts applied
2. Provide NRCS with a post harvest evaluation of the nutrient management program. Post harvest evaluations should consider total nutrients applied, yields, observations of nutrient deficiency or excess, and describe planned changes for the following year.
3. All records must be clear, legible and easily associated with the correct field. Producers must retain copies of all records for a minimum of five years.

III. OPERATION AND MAINTENANCE

The owner/client is responsible for safe operation and maintenance of this practice including all equipment. Address the following activities in the Operation and Maintenance guidance provided to the producer with the plan.

- Schedule periodic plan reviews to consider adjustments or modifications. As a minimum, review and revise plans with each soil test cycle.
- Significant changes in animal numbers and/or feed management will necessitate additional manure sampling and analyses.
- Protect fertilizer and organic by-product storage facilities from weather and accidental leakage or spillage.
- Calibrate application equipment to ensure uniform distribution of material at planned rates.
- Document the actual nutrient application rates. When actual rates differ from the planned rates, indicate the reasons for the differences on the 590 Job Sheet for Tree and Vine Crops.

Protect workers from and avoid unnecessary contact with plant nutrient sources. Use additional caution when handling ammoniacal nutrient sources, and when dealing with organic wastes stored in unventilated enclosures.

Utilize material generated from cleaning nutrient application equipment in an environmentally safe manner. Collect and store excess materials or field-apply in an appropriate manner.

Recycle nutrient containers in compliance with state and local guidelines or regulations.