Information Sources for Nitrogen Management Plan worksheet *(OCT 2016)*

Item #9: N Recommended

Fertility management guidance via Fertilizer Research and Education Program (FREP)

http://apps.cdfa.ca.gov/frep/docs/Guidelines.html

These guidelines are based on research results from studies carried out in California and elsewhere. Detailed information is summarized in a user-friendly, easily searched interactive database. Information for alfalfa, barley, broccoli, cauliflower, corn, cotton, lettuce, potato, rice, strawberries, processing tomatoes, wheat, almonds, citrus, grapevines, peach/nectarine, pistachio, prune/plum, and walnut is available now. Crops will continue to be added.

University of California Resources

UC Nutrient Management for Fruit, Nut, and Vegetable Crops

http://ucanr.edu/sites/nm/

Can search by crop or by topic for information. Links to UC publications with nutrient management guidance prepared by UC Farm Advisors and Researchers.

Specific Crops:

UC Fruit and Nut Research and Information Center: http://fruitsandnuts.ucdavis.edu/

UC Vegetable Research and Information Center: http://vric.ucdavis.edu/

Item #13: N Removed in Crop (NOT REQUIRED TO BE COMPLETED BY GROWER)

USDA Tool to Calculate Nutrient (N, P, K) Removal by Harvested Crop

Crop Nutrient Tool at following website has information about N, P, and sometimes K of crop residues. Need to input yield and know what the harvested portion is.

http://plants.usda.gov/npk/main

International Plant Nutrition Institute Crop Nutrient Removal Calculator app for i-Phone or i-Pad

Download the free app from App Store or i-Tunes to your i-Phone or i-Pad. About 80 crops are available, but be aware that some are listed in components (such as sugarbeet tops and sugarbeet roots) that you would need to add together if all components are removed from the field.

https://itunes.apple.com/us/app/crop-nutrient-removal-calculator/id914110406?mt=8

Items #18-19: Nitrogen Fertilizers

Amount of Available N in Dry/Liquid Fertilizers (Q5)

The available nitrogen (N) in commercial fertilizer products (dry, liquid or foliar) is printed on fertilizer labels by the manufacturer/supplier as part of the Guaranteed Analysis or Grade, as required by State Law.

The amount of N in a product is expressed as a percentage by weight of the product for all dry and liquid fertilizer products. For liquid fertilizers, the product density must be known and is listed as pounds per gallon (lbs/gal) of the fertilizer product. The first three numbers of the Guaranteed Analysis describe the nitrogen, phosphorus and potash content of the product. Examples:

The granular fertilizer product 21-7-14 has 21% nitrogen by weight or 21 lbs of N per 100 pounds of product. It also contains 7% P_2O_5, and 14% K_2O.

The liquid product CAN 17 has 17% nitrogen by weight and a product density of 12.64 lbs/gal. Thus, each gallon of this product contains 2.15 lbs of nitrogen. A fertilizer supplier or Certified Crop Advisor (CCA) can provide assistance in determining the amount of N in commercial fertilizer.

IPNI Nutrient Source Specifics are fact sheets on common synthetic fertilizer materials.

http://www.ipni.net/specifics-en

Western Fertilizer Handbook

A comprehensive reference and resource for nutrient management theory and practical information. Includes chapters on soils, water, plant growth as well as fertilizer materials, application methods, and management topics. Find it on Amazon for about $45.

Item #21: Manure/compost (organic amendments)

Oregon State online calculator

This free Excel spreadsheet allows you to calculate nutrient additions from various organic sources. You can also enter test results from your own compost/manure lab analysis. Cover crop contributions can be calculated as well.

http://smallfarms.oregonstate.edu/calculator

Western Fertilizer Handbook (see above)

UCANR Publication: "Organic Soil Amendments and Fertilizers"

Can be purchased at http://anrcatalog.ucdavis.edu/Items.aspx?search=organic%20soil or at your local UC Cooperative Extension office for $5.

Item #24: Soil N

Rule of thumb: 20-40 lb N per acre for each 1% Soil Organic Matter (SOM)

Soil test results for NO_3-N: lb N/ac = Soil NO_3-N (ppm) × 4

Item #25: Equations for N in irrigation water

$$\text{Inches applied} = \frac{(\text{Flow in cfs}) \times (\text{Irrigation set time in hours})}{(\text{Irrigated acres})}$$

$$\text{Inches applied} = \frac{(\text{Flow in gpm} \div 449) \times (\text{Irrigation set time in hours})}{(\text{Irrigated acres})}$$

N in Water conversions:

ppm (NO_3-N) = ppm(NO_3) x 0.226

ppm (NO_3) = ppm (NO_3-N) x 4.43

lbs N/ac-in = ppm (NO_3) x 0.052

lbs N/ac-in = ppm (NO_3-N) x 0.23