

FREQUENTLY ASKED QUESTIONS

CVILC Irrigation and Nitrogen Management Plan Worksheet (INMP Worksheet)

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Is the INMP Worksheet required?

- a. Yes. The General Order requires that all growers keep a copy of their Irrigation and Nitrogen Management Plan (INMP) Worksheet on farm to be presented in the case of an inspection by the Regional Water Board staff.

Do I still need to fill out an INMP Worksheet even if I do not apply fertilizer?

- a. Yes, regardless of fertilizer use, you must fill out an INMP Worksheet and Summary Report.
- b. Because you are not applying nitrogen, you can fill in any nitrogen use as zero. The crop and amount of yield harvested are still required.

What is a Management Unit?

- a. Management Units are a way to group the data you report for your farm operations. When reporting on a portion of a parcel or multiple parcels, Management units allow you to group together management practice and crop results when the land is operated in the same way and has the same yield:
- b. Management Units for a particular piece of a parcel or group of parcels must:
 - a. be planted to the same crop,
 - b. include crops of the same age category (age categories are 1 year, 2 years, 3 years, 4 years, and greater than 4 years),
 - c. include the same amount of nitrogen applied,
 - d. have the same yield,
 - e. have the same irrigation method(s), and
 - f. have the same management efficiencies.
 - g. Portal – the Management Description must also be the same for the portal to recognize/group management units.

What year do I use in my INMP Worksheet?

- a. The Irrigation and Nitrogen Management Plan Worksheet is a forward-looking document and used as a planning tool for the upcoming crop year. The INMP Worksheet takes into account what you and/or your CCA/agronomist plan to apply as nitrogen for optimal production; these are your “expected” values in the Worksheet. The amount of nitrogen that you actually applied is then recorded throughout the year and reported to the Coalition as an INMP Summary Report; these are the “actual” values that can also be listed in the worksheet.
- b. At the beginning of the year, complete all boxes on the worksheet that pertain to a plan or recommendation, and includes pre-season planning, irrigation methods and irrigation and nitrogen efficiency management practices.
- c. At the end of the year, fill out the “actual” column of the worksheet, based on actual amounts of nitrogen applied and production from the field in pounds per acre. The **actuals for N applied and Yield are what are reported on the INMP Summary Report.**

When must the INMP Worksheet be completed?

- a. Worksheets must be completed by March 1 every year. The Worksheet is to remain on-farm and therefore the due date refers to the date your plan should be completed and on file at the farm.

- b. Please note that the INMP **Summary Report** is different from the INMP Worksheet and does need to be returned to the Coalition by **February 1** and reports *actual values from the previous crop year*.

Do I return my INMP Worksheet to the Coalition?

- a. No. Irrigation and Nitrogen Management Plan Worksheets are to be kept on-farm, NOT returned to the Coalition. Please keep them where they are easily accessible in case of an inspection by the Regional Water Board.
- b. Please note that the INMP **Summary Report** is different from the INMP Worksheet and does need to be returned to the Coalition by **February 1** and reports *actual values from the previous crop year*.

How do I report the crop age for an orchard/vineyard with mixed ages?

- a. Depending on your situation you can give the age of the majority of trees or estimate the acreage associated with a particular age category (see below), and report with separate Management Units. If you have areas/sections of your farm that are of a similar age, you can separate out that information by acreage. Wherever possible, try to report areas with differences in yields separately, such as immature sections that are not in full production.
- b. Age categories are 1 year, 2 years, 3 years, 4 years, and greater than 4 years.
 - i. Example of providing an age based on the majority of the acreage:
 - a) A 100-acre parcel with mostly 10-year-old trees has a small area with 6-year-old trees. The younger trees are mixed in with the older orchard which is still about 80% 10-year-old trees and nitrogen is applied based on the needs of the older trees. The age would be reported as “10 years”.
 - ii. Example of splitting out your information by acreage:
 - a) A 100-acre parcel contains 40 acres of 10-year-old trees, 20 acres of 6-year-old trees and 20 acres of immature trees (less than 4 years old). The nitrogen applied and the harvested yield would be reported for each of the acreages: 40 acres (10-year-old trees), 20 acres (6-year-old trees) and 20 acres (< 4-year-old trees [immature]).

How do I determine the amount of water I apply to a field in one crop year?

- a. If you do not have a water meter on your irrigation system, you can estimate the amount water applied throughout the growing season. Your local University of California Cooperative Extension specialist has information on the amount of water needed to produce most crops grown in the region. The amount of water applied multiplied by the level of nitrate in the water gives you an estimate of nitrate in irrigation water that can be used by the crop.
- b. You can also use information from the [California Irrigation Management Information System \(CIMIS\)](https://cimis.water.ca.gov/) (https://cimis.water.ca.gov/) to estimate water demand based on evapotranspiration (ET).

How do I calculate crop evapotranspiration?

- a. Evapotranspiration (ET) is an estimate of the amount of water used by your crop throughout the season. It can be calculated using this formula: $ET_c = K_c \times ET_o$
- b. ET_c = Crop ET is the result of multiplying your crop coefficient with the reference evapotranspiration for your region. This is the final number you will put for question #2.
- c. K_c = crop coefficient and can be found [here](#).
- d. ET_o = reference evapotranspiration. Reference ET_o for general California zones can be found [here](#).

What does “N in irrigation water” refer to?

- a. The “N in Irrigation Water” field of the worksheet or the portal refers to the amount of nitrogen in the irrigation water BEFORE any synthetic fertilizer is added, i.e., it is not referring to “fertigation” practices. Rather, it is the amount of nitrogen in the water when it is delivered from the irrigation district or directly from the irrigation well.

Do I need to test my irrigation water for nitrate?

- a. This is considered a Best Management Practice and is recommended but not required. If irrigation water contains high nitrate levels, you can apply less fertilizer as the nitrate in irrigation water provides usable nutrients for the crop. While testing is not required, a reasonably accurate estimate of the amount of nitrogen contained in and subsequently applied in irrigation water is a requirement for completing the INMP.
 - i. Estimates of irrigation water nitrate can be obtained by sending samples to a laboratory, by using hand-held nitrate meters, or by using at-home test kits (available at many pet and aquarium supply stores).
 - ii. If you irrigate with canal water, your water district may be able to give you an estimate of the nitrate typically found in their canals.
 - iii. NOTE: #4 of the worksheet asks for the concentration of Nitrogen in your irrigation water, and #10 asks for the annual Nitrogen input from your irrigation water. To calculate the N in irrigation water contribution (#10), take the N concentration value (#4) and the anticipated crop irrigation (#3) and utilize them in one of the formulas below. The formula is dependent on which unit of N concentration you are utilizing.

To calculate pounds of nitrogen applied per acre with irrigation water if your nitrate concentration is reported in **nitrate-nitrogen (NO₃-N)** use the following formula:

$$\text{NO}_3\text{-N concentration (mg/L or ppm)} \times \text{anticipated crop irrigation in ac-ft. per acre} \times 2.72 \\ = \text{pounds N applied per acre}$$

Example:

Average nitrate concentration = 8 mg/L or 8 ppm as NO₃-N

Anticipated crop irrigation = 1.6 ac-ft. per acre

$$8 \text{ mg/L(or ppm)} \times 1.6 \text{ ac-ft. per acre} \times 2.72 = 34.82 \text{ pounds N applied per acre}$$

To calculate pounds of nitrogen applied per acre with irrigation water if your nitrate concentration is reported in **nitrate-nitrate (NO₃-NO₃)** use the following formula:

$$\text{NO}_3\text{-NO}_3 \text{ concentration (mg/L or ppm)} \times \text{anticipated crop irrigation in ac-ft. per acre} \times 0.62 \\ = \text{pounds N applied per acre}$$

Example:

Average nitrate concentration = 20 mg/L or 20 ppm as NO₃-NO₃

Anticipated crop irrigation = 1.41 ac-ft. per acre

$$20 \text{ mg/L(or ppm)} \times 1.41 \text{ ac-ft. per acre} \times 0.62 = 17.48 \text{ pounds N applied per acre}$$

How do I report for a nursery operation?

- a. Nursery operations should utilize the “Nursery, Potted” and/or “Nursery, Bare Root” crop options for reporting. Nurseries should not be reported by the individual commodities that are grown.
 - i. Growers should approach reporting nitrogen and yield on a best effort basis as it is understood it is difficult to report these values for nurseries.
 - ii. Yield should be reported as a best estimate of units sold and management units can be built around this estimate.

Do I need to test my soil for nitrogen carryover?

- a. Soil testing is a Best Management Practice and is recommended but not required. If you do have your soil tested and there is available nitrogen, it could be usable by the crop and you may be able to apply less dry/liquid and foliar applications during the growing season.

Who to contact if you need help?

- a. Our staff is happy to answer any questions you have via phone or email. Call 530- 756-5200 ext. 1010, or email contact.us@cvilc.org.