
Nutrient Management for Pacific Island Farms

USDA NRCS Practice (590)



Use cover crops, compost, animal manures, fertilizers, and other soil amendments to nourish your plants.

What is nutrient management?

When farmers base their fertilizer, cover crop, compost, and manure applications on crop needs, they are using **nutrient management**. Nutrient management is a way to feed crops without wasting money and without contaminating water supplies.

Why use nutrient management?

Pacific Island farmers can benefit from applying nutrient management on their farm. Using this practice can:

- economically provide plant nutrients.
- re-cycle animal wastes for plant nutrients.
- improve the soil with organic matter (from cover crops, compost, and manures).
- protect water sources (wells) and water bodies (streams, rivers, ocean) from nutrient pollution.

Where is nutrient management used?

- On all farmlands where plant nutrients are applied.

Plan for nutrient management

To grow a healthy, high yielding and high quality crop, use cover crops, compost, animal manures, fertilizers, and other soil amendments to nourish your plants. Your local Cooperative Extension Service (CES) is a good source of information for local farmers about crop production questions. They will work with you to be sure you understand what nutrients your crops need, how much natural fertility there is in your soil, and different ways to get nutrients to your crops.

Deciding the Right Amount

Learn what nutrients your crops need to grow well (available from CES). Learn what nutrients are already available in your soil by doing a soil test or plant tissue test, also available from CES. The test results will tell you what to apply and how much. Don't waste your time and money – apply just enough to meet your crop's needs.

Sources of Plant Nutrients

Commercial Fertilizers

After you get your test results, buy a fertilizer that matches your crop needs. The standard fertilizer mixes with fixed amounts of nitrogen, phosphorous, and potassium, like 15-15-15 (often called "triple fifteen") or 10-30-10, may not be what your crop requires. These fertilizer mixes can result in over-fertilizing your plants. Too much or the wrong kind of fertilizer can cause an imbalance in the soil, making your crops more prone to disease, plus wasting your money. Ask for single-nutrient fertilizers like urea, super phosphate, or potash, and blend your own mixture that will meet your crop's needs.

Organic Nutrient Sources

Commercial fertilizers are not the only source of nutrients for your crops. Other nutrient sources commonly available are cover crops (green manure), compost, animal manure and aquaculture wastewater.



Learn what nutrients are already available in your soil by doing a soil test.





Learn when your crops need nutrients during the growing season. If nutrients are applied when the crops aren't ready to use them, they will be wasted.

Organic materials contain different amounts of nitrogen, potassium, and phosphorous just like chemical fertilizer mixes. Find out the nutrient levels of your organic fertilizers. CES and NRCS can help you find standards (also called “book values”) for common manures and other organic nutrient sources. The best way to know what you are using is to have the material tested for nutrient content. Often CES can provide this service.

When should you apply nutrients?

Consult with CES to determine when your crops need nutrients during the growing season. If nutrients are applied when the crops aren't ready to use them, they will be wasted or leached into the underground drinking water supply. You may need to use several smaller fertilizer applications (known as split applications) during the growing season or use a slow-release fertilizer to apply nutrients as plants need them.

Don't waste valuable time and money by applying soluble fertilizers or manures right before heavy rains. They will wash away and may pollute water supplies.

Nutrient Placement

- Calibrate your equipment to be sure you are applying the correct amount of fertilizer.
- Instead of broadcasting nutrients, you may need to put fertilizer in a band next to the plants to get the best nutrient uptake.

- Don't use fertilizers near wells and public water supplies, drainage ditches, ponds, streams, rivers, or wetland areas.

Record Keeping

A large part of good nutrient management is record keeping. Write down what you apply, when, and how much. Make note of other field observations, like crop yield and pest problems. Keep a file with your notes, fertilizer bag labels, and other information. All of this will help you tailor your nutrient management plan for what is right for your crops, your soil, and the environment.



For the best results, combine **nutrient management** with other conservation practices:

- **Cover Crops (340):** growing legumes, grasses or grains for nutrients and weed control
- **Filter Strips (393):** A band of vegetation planted between working lands and environmentally sensitive areas

On sloping fields:

- **Contour Farming for Cropland (330):** carrying out farm operations across the slope
- **Contour Farming for Orchards (331):** carrying out farm operations across the slope
- **Hillside Ditch (423):** digging a small ditch across the slope to divert rainwater
- **Vegetative Barriers (601):** growing small strips of stiff plants across the slope
- **Alley Cropping (311):** growing strips of trees across the slope between areas where crops are planted

Additional information on nutrient management and other conservation practices is available from your local USDA Service Center or at www.pb.nrcs.usda.gov and www.hi.nrcs.usda.gov.