



College of Rural Alaska

**Cooperative Extension Service**

# The Compost Heap in Alaska

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Alaska's cool soil and air temperatures are not very conducive to composting organic materials. Organic matter decomposition takes place by bacterial and fungal action under moist, warm conditions. These conditions are only partially met in Alaska, so the breakdown process needed for good compost development occurs slowly. However, the benefits of a good compost heap will be achieved by those willing to do a little extra work and willing to wait the necessary time for decomposition. In most areas, decomposition will take a minimum of one to two years and often three. This depends largely on how favorable the site chosen for the heap is, and what practices are employed to hasten decomposition.

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## **THE VALUE OF COMPOST**

Good compost consists of a small amount of soil along with decomposed plant and animal residues. As a soil additive, compost improves both the physical condition and fertility.

Compost is especially useful in soils with low organic matter. Physical benefits include improved aeration, root penetration, and water infiltration, as well as reduced crusting of the soil surface. Increased water holding capability in sandy soils is also beneficial.

Although compost contains nutrients, its greatest benefit is in improving the soil's physical characteristics. Therefore, it should not be considered a complete fertilizer. In most cases, additional fertilizer will be necessary for maximum plant growth and production. Nutrient content analysis of compost can be done in the same way that soil is analyzed.

## **BUILDING THE PILE**

**SITE:** the choice of site may make a year's difference in the time it takes for the organic material to decay. A protected, well drained area, receiving maximum heat from the sun, should be selected. Building the pile within a tight wooden or cement box or utilizing a pit (methods often used in warmer climates) should be avoided in Alaska. The boxed method retains so much liquid that the bottom of the pile may become a solid block of ice and may not completely thaw during Alaska summers. The pit method is impractical since our cold soils actually inhibit decomposition.

## **STARTING THE HEAP**

The first thing to remember is that indiscriminate piling of trash does not make good compost. Start a neat pile with layers of uniform thickness. A width of four feet should be a maximum in cold climates. The length is not important and usual depth is about three feet.

Coarse materials are used in the first layer and should be approximately six inches deep for a good foundation. Tall weeds or old flower stalks can be used. Lay the foundation layer with some order over the full width of the intended pile. This will aid in a uniform breakdown and ease the repiling later. Diseased or pest laden plants should not be used. Pests may survive in incompletely composted material.

The second layer should be three inches deep and composed of a finer material. Manure is recommended, but leaves or grass clippings are quite satisfactory. Kelp may also be used. Dried kelp will require additional moisture to insure decomposition.

At this point start to build the sides and ends of the pile slightly higher than the center, continuing this practice throughout the construction. This will gradually form a dish-shaped top surface which tends to hold the added water.

The third layer should be a sprinkling of commercial fertilizer. One pound (pint) to 10 square feet is about right. 10-20-10, 8-32-16; any other formula readily available is quite satisfactory.

The fourth layer should be an inch of good garden loam.

After the fourth layer, begin the process over with #1, coarse material. Repeat until the desired height is reached.

A short pile, completely built over a short time, will develop into a uniform compost heap that is ready for use quicker than a long pile.

**WETTING:** If properly built, the top of the heap should be dish-shaped. Wet the pile thoroughly. Some people drench the pile with warm water when it is first built. This may increase initial bacterial action but is not necessary in very cool regions. Organisms that decompose organic matter thrive in a moist environment. Avoid conditions that are too wet or too dry.

**COVERING:** The use of clear (milky) plastic polyvinylchloride has proven satisfactory in hastening the breakdown of organic matter and will maintain optimum moisture levels in the heap. The clear plastic cover allows the sun's rays to pass through and warm the heap while helping retain the heat from decomposition. Moisture levels remain more constant since the clear plastic cover prevents evaporation and sheds rainfall.

Cover the pile completely with a single large sheet of clear plastic. Let the plastic touch the ground all around, fastening the lower edge of the plastic securely to prevent wind from blowing it away. Let the covered pile stand undisturbed for 2 to 3 weeks.

**TURNING:** To help make a uniform compost and to keep it functioning aerobically, the pile should be forked over after 2 or 3 weeks. Mark an area about the same size as the original. In repiling the material, place the edge and end material in the center of the new heap. Repile with squared-up sides and dished top as before. You can sprinkle a little additional fertilizer through the heap as it is repiled.

This repiling should be repeated every 7 to 10 days to maintain and complete aerobic composting. If a new heap is started each summer, you will have a plentiful supply of compost on hand each year.

**USE:** When the new material is to be used, remove the compost from the bottom to top rather than forking off the top. For potting soil or seed flat use, screen the compost through a coarse ¼ - inch screen, returning the larger material to the pile. Rubbing the compost vigorously will make most of the material pass through the screen.

**PASTEURIZATION TREATMENT:** Heating soil at 140 degrees Fahrenheit for one hour will destroy many harmful organisms. It should be remembered that completely composted organic matter needs no further treatment before use. If the above suggestions are followed, your compost heap will turn out as well as those in warmer climates. Pasteurization may only be necessary if the compost is to be used for seeding production.

### **WHAT MATERIAL MAY BE COMPOSTED?**

A compost pile can effectively decompose many materials but it should not be regarded as a general purpose garbage pile. Organic materials such as sod, grass clippings, leaves, weeds, manures (livestock), sawdust, shredded newspapers, wood ashes, hedge clippings, and garden plant refuse all can be used for composting. Unleached wood ashes contain about 5 to 7% potash, 1.5 to 2% phosphoric acid, and 25 to 30% calcium. It can be added to the compost pile in relatively large amounts due to its low nutrient levels, but it will raise the PH of the soil that it is applied to, so consider this if you are going to use compost for acid loving plants. Layers of ashes should not be more than three inches thick to facilitate overall decomposition of the pile. The calcium in wood ashes increases the efficiency of decomposition.

Diseased plants should be avoided since the disease organisms may be returned to the garden. Weed seeds usually do not completely decompose so it may not be desirable to include seed-laden weeds.

Garbage can be added to the compost pile but you should avoid grease, fat, meat scraps, and bones. These can attract dogs and other animals and may develop an odor during decomposition. In addition, fats are slow to break down. If attracting animals and producing odors are not problems, then fish wastes can also be added to the list. Avoid large items such as branches because they decompose very slowly.

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