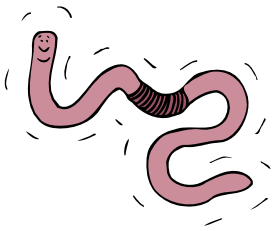
Composting



What is it?

Composting is **returning wastes to the earth**. It is a natural process that turns organic material into a dark nutrient-rich substance. In the lower-48, it is a **very popular** method now. Of course-- our Native cultures were using composting a long time ago!

Why compost?

Good for plants

Adding compost to your garden will make your plants grow bigger and better because it contains many nutrients. Adding compost to your soil also increases its water holding capacity.

Reduces garbage that goes to the dump

Composting saves space in your dump/landfill! It can also save you money if you pay for trash removal because it reduces your amount of trash. Composting organic material can also reduce potential odors and pest problems at the dump/landfill. Any compost produced can be used to cover trash at the dump/landfill. Covering trash can reduce odors, vectors, litter, and can make your dump look nicer!

Reduces greenhouse gas emissions

When sealed in landfills without oxygen, organic materials release methane, a potent heat-trapping gas, as they decompose. Methane is one of several greenhouse gases that contribute to global climate change.

What you can and cannot compost

What you CAN compost

There are two categories of organic material ("greens" and "browns") that you can compost. Examples are listed below.

Greens

- Kitchen waste: vegetable/fruit peelings and scraps, spoiled food, coffee grounds (with filter), tea bags, crushed egg shells, breads; cooked pasta and rice
- Green leaves
- Grass
- Farm-type Manure (rabbits, chickens, duck, geese, etc.)
- Weeds, flowers, garden waste (only use weeds before they go to seed)
- Seaweed or kelp
- Fish waste

Browns

- Dry leaves
- Bark chips
- Straw
- Prunings and cuttings
- Evergreen needles
- Dryer/vacuum lint
- Hair
- Cardboard/paper
- Sawdust

What you CAN'T compost

There are some things that shouldn't put into compost piles because of things like toxins, plant or human diseases, or weed troubles. Avoid composting the following materials:

- Meat, bones, fatty food wastes such as butter, cheese, oil and salad dressing
- Dairy products
- Weeds with mature seeds, destructive weeds (morning glory, sheep sorrel, ivy, etc.) (may re-sprout in your compost pile!)
- Human waste (can contain disease organisms)
- Pet waste (separate non-food compost is possible, but see note at end of document)
- Walnut shells
- Plants or grass clippings that were treated with chemicals
- Chemically-treated wood products (may contain arsenic!)
- Diseased or insect-infected plants
- Charcoal or coal ashes

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Basics of composting

Composting is really very simple and you can put as much work (or not) into it as you want to. Here are the basic requirements for composting:

Composting environment

Compost is made by billions of microbes (tiny bugs, fungi, etc.) that digest the food you give to them. Worms, insects, and their relatives will often also help out the microbes. Like people, these living things need air, water, and food. If you give them these basic things, they will happily turn your organic waste into compost.

Food

As mentioned above, there are two major categories of food that composting microbes need.

'Greens' are fresh (and often green) and examples are given above in the "what you can compost" section. Greens have a higher amount of nitrogen in them, compared to browns.

'Browns' are dry and dead plant materials and examples are given above in the "what you can't compost" section. Browns have a higher amount of carbon in them.

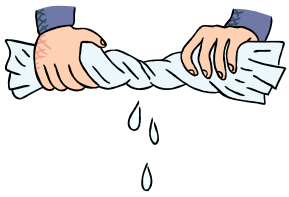
Composting requires a balance of nitrogen and carbon (i.e. of greens and browns) and the general rule is, **1 part greens to 3 parts browns**. This means you need to add three times the amount of browns than greens to your compost pile.

Air

Composting microbes are *aerobic* -- they don't work well unless they are provided with air. Without air, *anaerobic* (non-air needing) microbes take over. Anaerobic microbes do decompose your organic waste but very slowly and often with a rotting garbage smell! So it's important to make a lot of passageways for air in your compost pile. To make sure you have plenty of air in your compost pile ***turn*** the pile. Turning the pile means completely breaking it apart with a shovel or other tool you have around and then piling it back together in a more 'fluffed-up' condition.

Water

Ideally, your pile should be as moist as a wrung-out sponge for the microbes to be happy. If your pile is drier than this, the composting process will be very slow. If your pile is a lot wetter, the organics will be so heavy that they will tend to mat down and prevent air from getting into the pile, which will again slow the composting process down (and might even create anaerobic odor problems!). If it rains a lot in your community you might want to use a tarp to help keep the rain off the pile to prevent sogginess.



OK – so now I know the basics. How do I actually start composting?

Now that you've got your ingredients for composting, it's time to take action! There's a lot of great information out there about how to compost. Check out any of these websites for step by step tutorials on how to compost:
http://www.compost-info-guide.com/beginner_guide.htm
http://livinggreen.ifas.ufl.edu/waste/composting.html
http://www.extension.umn.edu/distribution/horticulture/DG3296.html#toc
http://www.ehow.com/how_7304436_compost-alaska.html

Composting in Alaska

Note that composting in Alaska is going to be a little different from composting in many places in the lower-48, due to the colder temperatures. The composting process will probably take more time due to the colder temperatures and may temporarily stop in the winter during freeze-up (but don't worry – it will start back up when springtime thaw comes). Two things in particular are important when composting in Alaska: the **location** and **size** of your composting pile.

Location - where to place your compost pile

Choose a convenient place to put your compost pile. Ideally it should be located on level ground. It should also be at a place that has access to a water supply. Microbes like heat, and since our winters are pretty cold, select a spot that receives **maximum heat and sunlight**. Don't put your compost pile right up against a wood building or tree because the wood will eventually decay.

Size of your composting system

The size of your compost pile needs to be **big enough to hold heat in** but still small enough to be able to turn to let air in. You can choose to build a bin (or buy a bin) to compost in, or just build your pile on the ground. For information about composting in a bin, see our Composting equipment section below. If you choose to compost without a bin and just build your pile on the ground, a good size for a compost pile is 3 feet long, 3 feet wide, and 3 feet high.

If you'll be compositing a lot of waste (for example collecting organic waste from most of your community) you might want to use the "windrow" method. The "windrow" method of composting is where food waste and a bulking agent (sawdust or wood chips) are mixed and then heaped in long rows. Gustavus, a southeast community in Alaska, composts food

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wastes from the community at their landfill and uses the windrow method as can be seen in these photos:

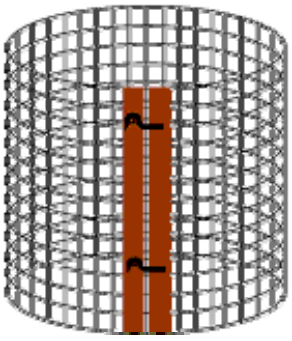
Composting equipment

As mentioned above, you can choose to compost in an open pile on the ground or in a bin. Composting in bins can save space, speed up decomposition and can keep your composting area neat. Bins can be very simple structures but need to be designed for a few things such as airflow etc. You can build your own bin or purchase one.

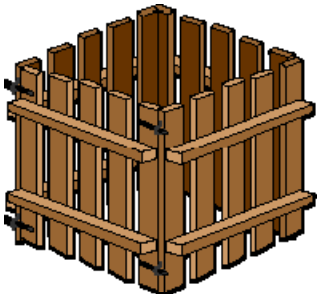
Build your own bin

To build your own bin, you can use any material that is convenient – wooden pallets, plywood, bricks, wire cage etc. Here are some examples of home-built composting bins and websites which describe how to build them:

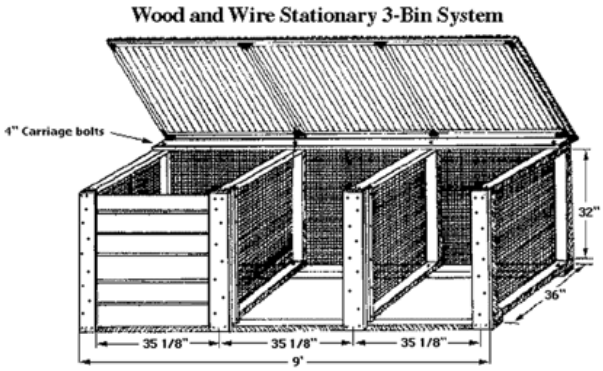
1) Wire Mesh Bin
http://www.digitalseed.com/composter/bins/wirebin.html



2) Wood Pallet Bin
http://www.digitalseed.com/composter/bins/palletbin.html



3) Three-Bin Wood Composter
http://www.solidwastedistrict.com/projects/bin_woodwire.html



Purchase a bin

Most commercial bins that you can purchase are made of plastic and are more expensive than do-it-yourself bins. The plastic does help to insulate the compost and allow decomposition later into the cold season, but not enough to really make them that much better than a homemade bin in terms of performance. However, if you don't have the resources to build your own bin, there are many different types of bins you can purchase.

Photo source: Alaska Mill and Feed

Where to purchase composting bins

Alaska Mill and Feed sells small worm composting units for composting kitchen scraps and urban compost tumblers ideal for yard, garden and kitchen wastes.
Contact: (907) 276-6016, 1501 E. 1st Avenue Anchorage, AK 99501
Email: info@alaskamillandfeed.com Web: http://www.alaskamillandfeed.com/

Engineered Compost Systems Phone 1 206-634-2625 http://www.compostsystems.com

Green Culture Phone: 1 (877) 204-7336 http://www.composters.com

Acme Worm Farm Phone: 520-750-8056 http://www.acmewormfarm.com/wormbins.html

Composting resources in Alaska

UAF/USDA Cooperative Extension Service

The Cooperative Extension has some great composting publications and a "how to compost video." They also offer composting workshops from time to time. Contact Julie Riley at 786-6306
To view a list of their composting publications, click on the following link http://www.uaf.edu/ces/pubs/catalog/ and search keyword "compost"

Alaskan Growers School

A new agriculture program out of UAF's Cooperative Extension Service with support from the USDA starts April 20, 2011. The Alaskan Growers School is a unique opportunity intended for Alaska Natives living in remote villages to gain the knowledge and skills to grow and raise food to complement a traditional, subsistence lifestyle. Although the program is open to anyone in Alaska, students from the Tanana Chiefs Conference region will be given priority for enrolling in the course as they are a partner on the grant. After students complete the course, they will gain the knowledge and skills necessary to grow enough food for themselves and 10 other families! Students will also gain a variety of other skills including raising bees, livestock, chickens, starting a business, marketing wild teas and other forest products, and much more!
For more information or to apply, please follow this link: www.uaf.edu/ces/ags

Mat-Su college

The Mat-Su college in Palmer Alaska offers a course on composting from time to time.
www.matsu.alaska.edu

Good Earth Garden School

The Good Earth Garden School has a wealth of information on everything composting. Contact Ellen Vande Visse answers@askmothernature.com or by phone at 745-0758.
www.goodearthgardenschool.com

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Anchorage Composting Facility

Alaska Waste began a commercial composting pilot program in 2009. Their state-of-the-art composting machine is 10 foot in diameter and is 32 feet long, with the capacity to process 16 cubic yards of material daily. With an initial input of vegetable waste from grocery stores and horse manure from Anchorage horse owners, the compost program will potentially divert 2,880 tons of compostable materials from the landfill annually, producing 4,320 yards of nutrient-rich natural fertilizer each year. Phone: 563-3717
www.alaskawaste.net/composting.htm

Alaska Master Gardener Association - Anchorage Chapter

Email your composting questions and get answers back! Go to:
http://www.alaskamastergardeners.org/QuestionsForMasterGardeners/MasterGardenerQuestions.html

Composting tips from the Alaska Master Gardener Association

"In Glennallen where -60 F degree temperatures are common December through February, try mulching with tundra moss. In the spring, add it to the compost heap or burn some of it--mosquitoes hate it. "
-Tom Thompson, Glennallen

"In Cordova, cold soils, a general absence of heat & a total lack of topsoil has encouraged me to search for new ways to compost. I make soil from composted peat, glacial sand & silt, old sawdust, vermiculite, etc."
-Ruth Fairall, Cordova

What about composting fish?

Fish composting requires a slightly different technique from regular composting due to the extreme odors.

To read more about fish composting check out these sites:

Wood and Fish Residuals Composting in Alaska
http://www.nrs.fs.fed.us/pubs/5378

Composting Fish Byproduct: An Experience from Ocean and Earth in Homer
http://www.afdf.org/wp/wp-content/uploads/composting_fish_byproducts.pdf

Converting Alaska Fish By-products into Compost
http://www.ars.usda.gov/research/publications/publications.htm?seq_no_115=242379

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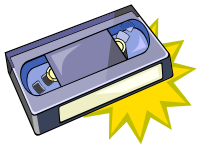
Sitka Tribe's Fish Waste Composting Project
http://www.sitkatribe.org/environment/compost_project.html



A really GREAT instructional video about fish waste composting is available from:
National Fisheries Institute
1525 Wilson Blvd., Suite 500 Arlington, VA 22209
Phone: 703-524-8880 *Give them a call to order a copy!*

For more information about fish and wood composting contact:
US Forest Service
Dave Nicholls , Anchorage Phone: 747-4312

Is dog waste compostable?

The average dog can produce 274 pounds of waste each year. Composting dog waste is a simple and inexpensive method for disposing of dog waste that can enhance the environment, but it does have some limitations.

Dog compost is a safe soil additive for re-vegetation and landscaping when it is composted properly but it should **NOT** be used on crops grown for human consumption as the waste can transmit parasites and infectious disease.

When used in a potting mix or flower beds, a 25 percent compost blend is recommended. The compost has a relatively high salinity and is not recommended for germinating seedlings.

For more information on dog waste composting, Alaska's Natural Resource Conservation Service has a great guide that can be downloaded from their website,
http://www.ak.nrcs.usda.gov/compost.html

Great composting examples in Alaska!

Gustavus

The Gustavus landfill (located in southeast Alaska) has had a great food waste composting program in place since 1996.
Community Contact: If you would like to talk to Gustavus about their composting program, call Paul Berry, Gustavus Dumpmaster at 697-2188 or email at: dumpmaster@gustavus-ak.us Also, you can check out their website for more photos of their program at:
http://cms.gustavus-ak.gov/services/DRC/photos/landfill_compost1.ppt/view

Cordova

The Copper River Watershed Project in Cordova created a homemade tumbler with materials on-hand using a model adapted from B & W Organics. Sawdust from a local sawmill and fish waste from a cannery are combined in the tumbler at a 3:1 ratio creating a nitrogen rich product that is sold to local gardeners.

At Cordova's high school, the students are composting their cafeteria's food scraps and using them in an experimental methane digester science project where once perfected cold loving microbes found in Eyak Lake's mud will turn the scraps into cooking fuel. The biogas project was funded by the Alaska Energy Authority's Emerging Technologies Grant through a partnership between the school district, the Cordova Electric Co-op and University of Alaska Fairbanks.

Community Contact: Copper River Watershed Project, Kristin Carpenter, Executive Director: crwp@copperriver.org or 424-3334

Akiak

In Akiak, compost is separated into three groups; dog scraps, rabbit scraps and worm scraps. The rabbits and worms provide excellent fertilizer for their vegetables and herbs grown in the community. Large plastic coffee cans and food cans are recycled to grow plants in them. The project is partially funded by the Alaska State Division of Behavioral Health.

Igiugig

Through a combination of funding sources including EPA IGAP, AK Food Coalition and AK Marketplace, Igiugig has started a community composting project. The Environmental program supplies the composting buckets. The village residents and local lodges then bring their compost to a centralized location. While they are still working out bear issues with their outside compost piles, the vermicomposting (using live worms) bins stay indoors and have been very successful. Food scraps, wood chips and chicken litter make a nutrient rich soil additive to use in their community greenhouse. Residents can sign up for a plot to grow their own vegetables and students help grow flowers for community beautification. Some of the herbs and vegetables grown are sold to local fishing lodges for their guests to enjoy fresh, locally grown produce.

Community Contact: Igiugig Village Council, Christina Salmon, Environmental Coordinator: 533-3211

Haines

Haines Sanitation Inc. (HSI) is currently using the first "in-vessel" municipal waste composting operation in Alaska in place since 2003. The process requires raw sewage and will decontaminate both solid waste and sewage. HSI is producing as close to a "Class A" compost as possible using municipal garbage!

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Community Contact: If you would like more information about Haines's composting project or other municipal composting programs, contact: Ed Emswiler, Alaska Department of Environmental Conservation at 465-5353 or by email at: Ed_Emswiler@dec.state.ak.us

Using Biodegradable and Compostable Products

Companies are now making biodegradable or compostable products to use in the food packaging or service industry such as coffee cups and lids, napkins, cutlery, and to go containers. The products are made from plant based materials that breakdown more quickly compared to the petroleum based plastic and offer a healthy alternative to Styrofoam. The products need a commercial composting facility to efficiently and effectively biodegrade into soil, but these products will break down in the landfill without leeching toxins. There are two distributors of compostable products in Alaska:

Green Alaska Solutions™ located in Anchorage, Phone: (907) 351-4195
E-mail: oleary@alaska.com www.greenwarealaska.com

Loopy Lupine LLC based out of Homer, Phone: (907) 235-5100
E-mail: loopy@loopylupine.com http://loopylupine.com/

Funding Sources

Unites States Department of Agriculture (USDA)

The USDA's Community Food Projects (CFP) Competitive Grants Program provides the major funding source for community-based food and agriculture projects nationwide.
http://www.foodsecurity.org/funding.html

Natural Resource Conservation Service

The Environmental Quality Incentives Program (EQIP) provides a voluntary conservation program that promotes agricultural production and environmental quality. EQIP offers financial and technical help to assist eligible participants install or implement structural and management conservation practices on eligible agricultural land.
http://www.nrcs.usda.gov/programs/eqip/index.html and
http://www.nrcs.usda.gov/programs/eqip/organic

NRCS offers Seasonal High Tunnel Systems through EQIP. Seasonal High Tunnels are polyethylene (plastic) covered structures that are used to cover crops to extend the growing season. For more information visit their website,

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http://www.ak.nrcs.usda.gov/programs/Seasonal%20HighTunnel%20QandA.html or contact your local NRCS Field office: http://www.ak.nrcs.usda.gov/contact/fieldoffices.html

Alaska Food Coalition Mini-grants

The Alaska Food Coalition offers mini-grants of up to $1,000. These grants help food and nutrition programs build their capacity to distribute food. To be eligible you must be an existing member. For information on becoming a member: http://www.alaskafood.org/membership.shtml

National Gardening Association

National Gardening Association's (NGA) grant and award programs are funded by generous corporations and foundations that share NGA's vision of a greener future and belief in the powerful impact gardening programs can have on the mental, physical, and psychological health of individuals. http://www.kidsgardening.com/grants.asp

Composting websites

http://www.epa.gov/epawaste/conserve/rrr/composting/index.htm
http://www.epa.gov/osw/wycd/tribal/pdftxt/twj-4.pdf
http://www.extension.umn.edu/distribution/horticulture/DG3296.html
http://www.compostguide.com./
http://www.aerho.org/projects/compost1.html
http://www.plantea.com/compost.htm

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