HAMPSHIRE COLLEGE
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Sustainable Food Purchasing Guide

Working Draft, 1/25/2013

Acknowledgements

Creation of the Sustainable Food Purchasing Guide was inspired and informed by the Yale University Sustainable Food Purchasing Guide [1]. Other schools with exceptional food sustainability guidelines that influenced this document include Emory University[2] and Pomona College[3].

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Introduction

The goal of Hampshire College's Healthy Food Transition, is "to change the enterprise of producing, preparing, consuming, and managing food on campus, using food as a means to teach students, communicate values, experiment with new models of food systems that solve problems, influence our peers, and serve our community"[4].

To promote this goal, this document lays out specific guidelines to strive toward when purchasing food for the College. Hampshire College recognizes that it may not be economically or logistically feasible to always purchase food meeting the ideal criteria, so the guidelines are organized as tiered priorities. Over time, Hampshire College will work with the dining services contractor and other campus operations to move more food purchases toward sustainable food, with a short-term goal of procuring 30% of all food through local sources.

Hampshire College defines **sustainable food** as food that is produced and procured in a way that

- minimizes negative impacts on the environment;
- supports the health, human rights, and economic security of the people producing, preparing, and eating the food;
- strengthens connections within and between communities;
- ensures humane treatment of livestock; and
- preserves environmental and biological resources for future generations.

The following General Priorities section of this document identifies Hampshire's priorities for sustainable food purchases within several categories of sustainability. The following section identifies these priorities by the specific types of food, such as fresh vegetables and dairy, and provides background information on the sustainability issues that drive those priorities.

General Priorities

The Hampshire Farm Center currently includes 15 acres of vegetable crops, a small herd of heritage-breed Dutch Belted cows, which produce high-quality, rich milk on a grass-feed diet, a brood of egg-laying hens, a drove of pigs, a pair of heritage-breed sheep, several hives of bees, and one very watchful llama. The farm is operated following USDA organic guidelines: vegetables are grown with organic fertilizers and no conventional pesticides; production crops are rotated with nitrogen-fixing cover crops; beef and dairy cows are pasture raised in summer and fed hay in winter; pork is milk-fed; chickens are pastured in summer and cage-free in winter, and fed organic feed. However, due to the expense of certification and knowledge of our own practices, Hampshire College Farm is not a USDA certified organic operation.

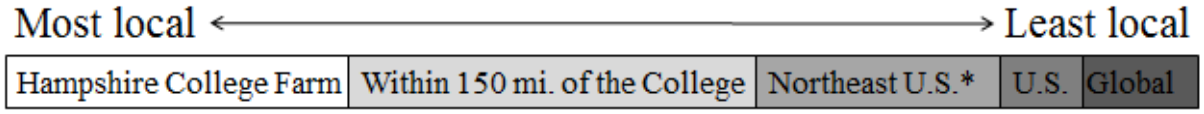
For food not procured directly from the Hampshire Farm Center, Hampshire College prioritizes local food and food that meets certain certifications, such as USDA Certified Organic, Fair Trade Certified, Certified Humane, or Marine Stewardship Council Certified[5], all of which will be described in the following sections. However, certifications are not the only answer when choosing sustainable food. For example, in many cases, conventional food produced

locally is preferable to certified organic food produced in California or internationally. Also, there are many small to mid-sized local growers who follow sustainable practices but do not seek official certifications due to the cost of achieving certain certifications and the paperwork required to maintain them. Over time, the College, with input form the dining service contractor, the campus community, and local agricultural organizations, such as Community Involved in Sustaining Agriculture (CISA), will establish relationships with local and regional farms as well as with farm cooperatives that promote sustainable practices for their producers.

The intent behind the priorities in this guide is to supply the campus community with healthy food, while supporting sustainable farm practices, small farm viability, just labor conditions, and humane treatment of animals. General food options within these categories are prioritized below to help with sustainable food purchasing decisions.

Local Food

The definition of local food varies from product to product. Some foods, such as salad greens, can be sourced as locally as the Hampshire College Farm, while others, such as citrus fruits, would be considered local if they are grown within the U.S., with a preference for produce closest to MA. Using the following scale as a guide, Hampshire College prioritizes sourcing food as far to the left as possible from local to international.



* The Northeast is defined as including the states CT, ME, MA, NH, RI, VT, NJ, NY, and PA

Purchasing food as locally as possible is considered more sustainable than shipping food from farther away because it reduces the amount of fuel needed to ship the food, thus reducing the climate impact. Additionally, purchasing food from small local farmers supports the economic viability of small farms and their surrounding rural communities.

Sustainable Farming Practices

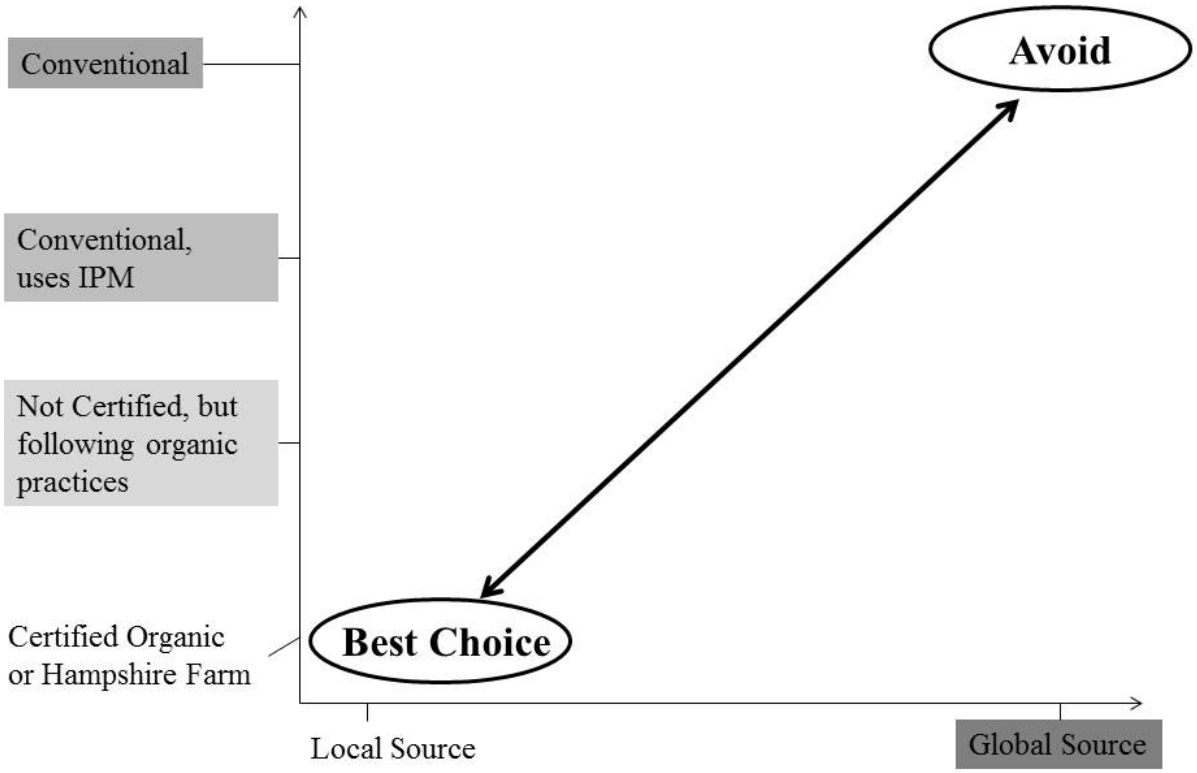
Sustainable farming practices minimize negative impacts on the environment, ensure humane treatment of livestock and preserve environmental and biological resources for future generations. The USDA has set practices for certified organic farms, which include rotating crops, limiting antibiotic use on livestock, and using only certain approved pesticides and fertilizers[6]. There are also farms that use sustainable practices, which, while not certified organic, meet the goals of sustainable farming. In fact, our own farm at Hampshire College, practices sustainable farming, following USDA organic guidelines without seeking the USDA organic certification at this time.

While there are terms other than certified organic which are used in sustainable food marketing, such as Eco and Natural, many of these terms are not regulated and provide little to no reliable information about the practices used in producing the product. Labels using these terms are not sufficient evidence to classify a product for purchase as sustainable food. However, if the College, the College's food service provider, or a trusted organization such as Community Involved in Sustaining Agriculture (CISA) has developed a relationship with a local

farm and is satisfied that that farm follows mostly organic practices, food purchased from that farm can be considered sustainable even if the farm is not USDA Certified Organic. Similarly, food purchased from farms in the transition period to Organic Certification can be considered sustainable.

Conventional is the term often used to describe farms that do not describe themselves as organic. However, many conventional farmers are committed to the sustainability of their practices and the health of their farms and customers. Integrated Pest Management (IPM) is one sustainable practice non-organic farms may employ. IPM is a system of pest management that emphasizes prevention of pest problems and employment of multiple pest management tools, so that pesticides are only one of many options. There is currently no third-party certification for IPM, so as with non-Certified farms that follow organic practices, developing relationships with farms and distributers is the best way to determine how much credibility to give claims of sustainability and IPM practices.

When prioritizing products on the scale from certified organic to conventional, consider the location of the farm as well. As noted previously, it can be preferable to choose a product from a local farm that is not certified organic but is known to be committed to sustainability rather than a certified organic product from a more distant and less well-known producer.



Small-to-Medium Farm and Rural Economic Viability

The goal of increasing small farm viability is based on the assumption that small farms are valuable to society. The USDA National Commission on Small Farms concluded in 1998 there are many public "benefits that result from a large number of farms under a system of widespread ownership, rather than concentration of our food supply in a few megafarms"[7]. A food system based on a multitude of small farms incorporates much more diversity, biological and cultural, than one dependent on a few large farms. Small farms that market directly to consumers increase people's connection to the food they eat and the importance of agriculture. Farmers who work their own land and intend to pass their farms on to their children and grandchildren have a stronger incentive to include long-term sustainability in their decision-making than large corporations which are often driven by the goal of maximizing shareholders' profits. Small farms drive the rural economy, providing opportunities for self-employment. Two studies cited in the USDA report found that when land ownership becomes concentrated in a few hands, the wealth distribution in rural communities becomes bi-modal, with a few wealthy land-owners and many poor laborers[8]. As the United Nations World Commission on Environment and Development has observed, although the world today produces more food per capita than ever before, hunger is still widespread. What is lacking is not more food but "policies to ensure that the food is produced where it is needed and in a manner that sustains the livelihoods of the rural poor"[9].

Hampshire College is committed to supporting small-to-medium sized farm viability by sourcing food served in its cafeteria from local farms, where possible, in support of the valuable societal and environmental benefits of a locally-based food system.

Just Labor Conditions

Hampshire College is committed to making food purchasing choices that support the human rights of farm laborers, including safe working conditions and fair wages. One way to accomplish this goal is to purchase food both domestically and internationally that meets Fair Trade Standards[10]. These standards include banning child and slave labor; requiring employers to provide a safe workplace; and charging a fair price that covers farmers' costs. Important goals to emphasize include supporting the economic viability of growing food and the human rights of farmers and farm-workers. Two particularly troubling problems in the United States are exploitation of migrant laborers[11,12,13] and exposure of farm workers to pesticides[14,15,16,17]. Farm workers in other countries face similar risks[18].

Exploitation of Migrant Laborers: The majority of hired farm laborers in the U.S. are immigrants (84% in 2001), many of whom lack legal documentation (53%)[19]. This marginalized status leaves many of the people who work in U.S. agriculture vulnerable to exploitation and intimidation[20,21]. Workers who lack legal status, knowledge of their rights, or English language skills or are indebted to recruiters who brought them to the U.S. often fear the consequences of speaking up against abuses, such as wage theft, harassment, or illegal working and living conditions[22]. In addition, enforcement of agricultural labor laws is poor, partially due to understaffing compared the large number of farm workers[23].

Pesticide exposure: The federal Worker Protection Standard (WPS) requires that all employers follow certain safety precautions, such as warning employees when and where pesticides are going to be sprayed, restricting entry to sprayed fields until a minimum time period has passed, and providing washing supplies and transport to emergency health care should an

employee be exposed to a pesticide[24]. Unfortunately, not all employers follow these requirements[25]. And even when WPS requirements are followed conscientiously, farm workers can be exposed to hazardous levels of pesticides[26].

Hampshire College is committed to purchasing food from farms that treat all their workers fairly, both domestically and internationally. Fair treatment should include livable wages; access to water, toilets, and washing facilities; and a safe working environment.

Humane Treatment of Animals

There are two third-party certifications in the U.S. for the humane treatment of animals: (1) American Humane Certified and (2) Certified Humane Raised and Handled. What livestock farming practices can be considered humane depends greatly on the type of animal, so more detail will be provided in Part 3 of this document. In general, the American Humane Association's "Five Freedoms of Animal Welfare" provide a good foundation for the philosophy behind these certifications, that animals raised for human consumption should have "freedom from hunger and thirst; freedom from discomfort; freedom from pain, injury, or disease; freedom from fear and distress; and freedom to express normal behaviors"[27].

Priorities by Type of Food

In the following sections, we consider priorities for each type of food, organized as

- Fresh Fruits and Vegetables
- Animal Products
- Seafood
- Dry, Preserved, and Prepared Foods

Each section below begins with a summary of priorities, followed by detail about each of the priorities, including desirable certifications, key issues to consider, and sustainable practices to look for when certified products are unavailable or when local non-certified products are an option.

Fresh Fruits and Vegetables

Priorities Summary

Hampshire College prioritizes seasonal, local produce that is grown using sustainable farming practices and under fair and safe working conditions. If conventionally grown produce is purchased, produce that tends to have low pesticide residues is preferred (see Table 4). The purpose of the following section is to provide information to help choose foods that meet these standards.

Hampshire Farm Center vegetables are grown using organic compost, organic fertilizers, organic pest management, and crop rotation, including winter and fallow-season nitrogen-fixing cover crops.

Table 1: Fresh Fruits and Vegetables Priorities Summary

		Best Choice	<----------	Avoid
Local, seasonal		Hampshire Farm, in season	See local scale on pg. 3	Imported and out of season
Farming Practices				
	Pest management	No conventional pesticides	IPM	Conventional pesticides only
	Fertility management	Combinations of compost, manure, N-fixing cover crops, organic fertilizers	Judicious use of NPK fertilizers	Conventional fertilizers
		Nutrient budget based on soil testing	Some soil testing	Fertilize regardless of soil tests
	Crop rotation	Plans rotation to complement pest and fertility management	Some conservation cropping	Monocropping
	Soil conservation	Cover crops in winter		Bare soil in winter
		Wind breaks, conservation buffers		
		Conservation tillage		Mold-board plow tillage, extensive tillage
Pesticide Residue (see Table 4)		Organic or IPM	Conventional, low-residue food	Conventional, high-residue food

Desirable certifications: USDA Certified Organic, Food Alliance Certified, Fair Trade International, Fair Trade USA

Local Food

The definition of local food varies from product to product. Some foods, such as salad greens, can be sourced as locally as the Hampshire College Farm, while others, such as citrus fruits, would be considered local if they are grown within the U.S., with a preference for produce closest to MA. The following table lists the closest area of production for general categories of fruits and vegetables.

Table 2: What is Local?

Type of produce	Most local available
Salad greens	Hampshire Farm; within 150 miles
Root vegetables	Hampshire Farm; within 150 miles
Onions, garlic, and other Alliums	Hampshire Farm; within 150 miles
Brassica vegetables	Hampshire Farm; within 150 miles
Solanum vegetables	Hampshire Farm; within 150 miles
Squash	Hampshire Farm; within 150 miles
Other vegetables	Hampshire Farm; within 150 miles
Herbs	Hampshire Farm; within 150 miles
Temperate fruits	Within 150 miles of Hampshire
Tropical fruits	Southeastern U.S.

Seasonality

When purchasing fresh local produce, seasonality becomes an important factor. Importing food from around the world makes many fruits and vegetables available year-round. However, paying attention to when local produce is in season allows one to plan menus that take advantage of the local supply of fresh, delicious food.

In the Northeast, sourcing local food in the winter is difficult, but with a little creativity and flexibility, it is possible to support local agriculture year-round. Season-extending farming practices, such as unheated high tunnels, are being used more and more to grow local winter greens[28]. These methods consume much less energy than heated greenhouse production. Local processing centers can be engaged to preserve or freeze fresh local produce in summer for consumption in winter[29]. Winter cold-storage of fruits and vegetables can be energy-intensive, sometimes resulting in a larger carbon footprint than out-of-season produce shipped in from somewhere warmer[30]. However, some pioneering growers have found ways to use renewable energy to make their produce storage carbon-neutral[31].

Finally, seasonality can be important even when choosing produce that is not available in the Northeast. For example, citrus fruit is in season in the southern U.S. in the winter. So purchasing citrus fruit mostly in the winter could enable the College to choose the most locally available produce and also have a winter replacement for some of the fruits and vegetables that are in season locally at other times of the year. Table 3, below, lists when different kinds of produce are in season most locally in the Northeast region.

Table 3: Seasonal Availability of Fruits and Vegetables[32,32,34,35,36, 37,38]

Type of produce	Season	Kinds available
Salad greens	Spring	"baby" and cool-season greens (lettuce, spinach, mustard greens, arugula, mizuna)
	Summer	heat-tolerant lettuce varieties
	Fall	cool-weather greens (**lettuce, spinach, mustard greens,** arugula, endive, escarole, radicchio) and cooking greens (**collard greens, kale, chard**)
	Winter	high-tunnel grown cool-season greens (lettuce, spinach, mustard greens, arugula, claytonia, endive, escarole, radicchio), forced Belgian endive
Root vegetables	Spring	very durable storage roots (parsnips, potatoes, rutabaga)
	Summer	beets, carrots, potatoes (new/small), radishes
	Fall	**beets**, **carrots**, **celeriac**, **daikon radishes**, potatoes, **sweet potatoes**, parsnips, radishes, **rutabaga, turnips**
	Winter	storage roots (beets, carrots, celeriac, Jerusalem artichoke, parsnips, potatoes, rutabaga, sweet potatoes, turnips)
Onions, garlic and other Alliums	Spring	garlic greens, scallions, stored onions and garlic
	Summer	onions
	Fall	onions, **garlic, leeks,** shallots, scallions,
	Winter	stored onions, garlic, shallots
Brassica vegetables	Spring	
	Summer	broccoli, cabbage, cauliflower
	Fall	**broccoli**, Brussels sprouts, **cabbage**, **cauliflower**
	Winter	Stored cabbage
Solanum vegetables	Spring	
	Summer	**eggplant, peppers (sweet and hot), tomatoes, tomatillos**
	Fall	**eggplant, peppers (sweet and hot), tomatoes, tomatillos**
	Winter	
Squash	Spring	
	Summer	summer squash (zuchinni, yellow squash, etc.), squash blossoms
	Fall	winter squash (**acorn, butternut,** hubbard, etc.), **pumpkins**
	Winter	winter squash (acorn, butternut, hubbard, etc.)
Other vegetables	Spring	artichokes*, asparagus, fiddleheads, mushrooms, peas, rhubarb, sprouts,
	Summer	celery, sweet corn, cucumber, bok choi, edamame, fennel, **green beans**, kohlrabi, mushrooms, okra, peas, sprouts, tat soi
	Fall	artichokes*, **bok choi, edamame, fennel,** horseradish**,** mushrooms, sprouts**, tat soi**
	Winter	mushrooms, sprouts
Herbs	Spring	chives, cilantro, dill, marjoram, mint, oregano, parsley, sage, thyme
	Summer	basil, cilantro, dill, marjoram, mint, parsley, rosemary, savory, tarragon
	Fall	**dill, parsley, rosemary**, dried herbs
	Winter	dried herbs
Temperate fruits	Spring	stored apples and pears
	Summer	apricots, blackberries, blueberries, cherries, currants, elderberries, gooseberries, melons, nectarines, peaches, plums, raspberries, strawberries
	Fall	apples, blueberries, pears, cranberries, grapes, kiwifruit (cold-hardy varieties), quince, raspberries
	Winter	stored fruits (apples, pears)
Tropical fruits*	Spring	pineapple
	Summer	mangoes
	Fall	pomegranate, figs, kiwifruit, mangoes
	Winter	citrus fruits (oranges, tangerines, etc.), avocado

*Not grown in the Northeast U.S., in season in the reason in which it is grown

Bold items are available from the Hampshire College Farm in this season

Sustainable farming practices

Pest management: Ideally, Hampshire College will purchase fruits and vegetables that were grown using pest management that does not employ conventional pesticides, due to their health risks to farm workers, and consumers, environmental impacts, and production cost in fossil fuels. When this is not feasible, fruits and vegetables grown using Integrated Pest Management (see General Priorities section for more details) are a good choice.

Fertility Management: Nitrogen, phosphorus, and potassium (NPK) are the main nutrients added in fertility management, but micronutrients and organic matter are also important. Compost, manure, and composted manure are considered sustainable because they re-use waste and improve soil quality by adding organic matter. Green manures are cover crops grown to add nitrogen to the farm system, in the case of legumes, or "catch" nutrients that might otherwise be leached from the soil or taken up by weeds, in the case of grasses. Green manures also build organic matter in the soil. Organic fertilizers include all other fertility amendments approved by organic standards. Conventional fertilizers are considered less sustainable because their production consumes large amounts of fossil fuels. Applying some conventional fertilizers to supplement organic amendments can be a middle ground between organic and conventional fertility management. Fertility application should be based on soil tests. Unnecessary over-application of fertility can result in surface and groundwater contamination and eutrophication of surface waters [39, 40].

Crop Rotation: Monoculture is the practice of planting the same crop year after year. It may also be referred to as "continuous" cropping. Crop rotation is preferable because it breaks up pest and disease cycles, varies the demands put on the soil, and improves biological diversity. Conservation cropping is a form of continuous cropping that incorporates cover crops and reduced tillage[41].

Soil Conservation: Although reduced tillage decreases soil erosion, it also can increase the need for chemical herbicides, because soil cultivation is an important weed control tool. There is often a trade-off between sustainable weed management and optimum soil conservation, although many farmers strive to use conservation tillage methods as much as possible.

Pesticide Residue

When purchasing conventional produce, it is important to remember that some pesticides pose more of a health risk than others, and that some produce reaches consumers with more pesticide residue than others. If a food tends to have high pesticide residue, it would be best to purchase that food from an organic or IPM source (see Table 4). For example, because conventional apples tend to have high pesticide residues, Hampshire prioritizes purchasing local apples from a source that uses minimal pesticides, such as the University of Massachusetts Cold Spring Orchard[42]. If produce is purchased from a conventional source, it would be best to choose foods that tend to have low pesticide residue. Generally, choosing conventional foods with a rind or peel that is removed before eating reduces ingestion of pesticide residues.

Table 4 ranks pesticide residue on washed, peeled fruits and vegetables, as determined by the Environmental Working Group (EWG). Starred items tested positive for particularly toxic pesticides. For information on other foods, or for updated information, consult the most recent EWG Shopper's Guide to Pesticides in Produce[43].

Table 4: Fruit and Vegetable Pesticide Residue

Source: Environmental Working Group (www.ewg.org)

Most pesticide after washing and peeling (prioritize purchasing these from organic or IPM farms) ↑	Apples
	Celery
	Sweet bell peppers*
	Peaches
	Strawberries
	Nectarines (imported)*
	Grapes
	Spinach
	Lettuce
	Cucumbers
	Blueberries (domestic)
	Potatoes
	Kale/collard greens*
	Cherries
	Hot peppers
	Pears
	Nectarines (domestic)*
	Green beans*
	Plums (imported)
	Blueberries (imported)
	Carrots
	Raspberries
	Summer squash
	Oranges
	Broccoli
	Green onions
	Bananas
	Honeydew melon
	Tomatoes
	Cantaloupe (imported)
	Cauliflower
	Papaya
	Plums (domestic)
	Winter squash
	Mushrooms
	Watermelon
	Grapefruit
	Sweet potatoes
	Cantaloupe (domestic)
	Kiwifruit
	Eggplant
	Mangoes
↓	Asparagus
	Sweet peas (frozen)
Least pesticide after washing and peeling (if purchasing some produce from conventional sources, start with these)	Cabbage
	Avocado
	Pineapples
	Sweet corn
	Onions

*Tests found residue from neurotoxic organophosphate insecticides

Animal Products

Priorities Summary

Hampshire College prioritizes locally produced meat, eggs, and dairy products that are produced using sustainable farming practices, humane animal treatment practices, and fair and safe working conditions. The purpose of the following section is to provide information to help choose foods that meet these standards.

The Hampshire College Farm produces eggs, pork, beef, and milk. The Farm has produced some lamb in the past, and is looking into producing poultry meat in the future. All animals are humanely raised. Chickens are raised cage-free, are pastured during the growing season, have access to the outdoors in the winter, and are fed 100% organic feed. Cows are grass fed (pasture in the growing season and hay in the winter). Pigs are milk fed[44].

Table 5: Animal Products Priorities Summary

Eggs and Poultry	**Best Choice**	**<----------->**	**Avoid**
Local	Hampshire Farm (eggs); within 150 mi. (poultry)	Northeast, U.S.	Global
Farming Practices:			
Feed	Pasture with grass and insects, plus Certified Organic feed, pre-consumer food scraps	Pasture with conventional feed	Conventional grain feed and no pasture
Antimicrobial Use	No sub-therapeutic use, USDA withdrawal period followed when therapeutic use is needed		Routine sub-therapeutic use for increased growth
Hormone Use	"No hormones added" labels misleading, because federally prohibited in poultry production.		
Humane Treatment	Free-range or cage-free, defined as grazing each day where they have access to grass and dirt	Kept indoors in space meeting AHC or CHRH minimum requirements	Confined to cages or crowded barn
	No debeaking, only certified trimming or tipping		Birds routinely debeaked

Beef and Dairy Products		Best Choice	<----------	Avoid
Local		Hampshire Farm	Within 150 mi., Northeast, U.S.	Global
Farming Practices:				
	Feed	AGA grass-fed certified: Pasture in summer, hay and silage in winter; certified organic grain	USDA-certified grass-fed or pasture in summer; conventional grain in winter	Conventional grain feed (may contain animal by-products)
	Antimicrobial Use	No sub-therapeutic use, USDA withdrawal period followed when therapeutic use is needed		Routine sub-therapeutic use for increased growth
	Hormone Use	No hormone growth-promoter use		Routine use of hormone growth-promoters
Humane Treatment		Pastured during growing season	Kept indoors in space meeting AHC or CHRH minimum requirements	Confined to feed lot (AFO or CAFO)

Pork		Best Choice	<----------	Avoid
Local		Hampshire Farm	Within 150 mi., Northeast, U.S.	Global
Farming Practices:				
	Feed	Pasture and certified organic feed, milk, some pre-consumer food scraps	Pasture and conventional grain	Conventional grain feed (may contain animal by-products)
	Antimicrobial Use	No sub-therapeutic use, USDA withdrawal period followed when therapeutic use is needed		Routine sub-therapeutic use for increased growth
	Hormone Use	"No hormones added" labels misleading, because federally prohibited in pork production.		
Humane Treatment		Pastured outside most of day, with soil to root in and grass	Kept indoors in space meeting AHC or CHRH minimum requirements	Confined to feed lot (AFO or CAFO)
		If raised in barn, plenty of space and bedding hay		Concrete floors and crowded pens in barns

Mutton and Lamb		Best Choice	<----------	Avoid
Local		Hampshire Farm; within 150 mi.	Northeast, U.S.	Global
Farming Practices:				
	Feed	AGA grass-fed certified: Pasture in summer, hay and silage in winter; certified organic grain	USDA-certified grass-fed; pasture and some conventional feed	Conventional grain feed (may contain animal by-products)
	Antimicrobial Use	No sub-therapeutic use, USDA withdrawal period followed when therapeutic use is needed		Routine sub-therapeutic use for increased growth
	Hormone Use	No hormone growth-promoter use		Routine use of hormone growth-promoters
Humane Treatment		Pastured as much as possible	Kept indoors in space meeting AHC or CHRH minimum requirements	Confined to feed lot (AFO or CAFO)
		Long tail-docking		Short tail-docking

Desirable Certifications: American Humane Certified, Certified Humane Raised and Handled, Fair Trade USA, USDA Certified Organic, Food Alliance Certified, American Grassfed Association Certified (best), USDA Verified Grass-fed (ok).

Local Food

Although local animal products are increasingly available, scale may be an issue when sourcing local meat for the College. It may be desirable to find farm cooperatives or local distributors to help source enough local meat in the quantities needed. Additionally, small farms sometimes find it difficult to meet USDA slaughter regulations for commercial sale, but initiatives are underway to improve small farms' access to USDA certified slaughter facilities[45].

Sustainable Farming Practices

Several issues are key to choosing sustainably raised animal products: feed source, antibiotic use, hormone use, and waste management. These issues are common to all types of livestock. However, best practices vary depending on the type of animal being raised and the type of food being produced.

Feed source: One of the benefits of raising livestock is their ability to graze on land that might not support crop production. Feeding grain to livestock negates this benefit, increasing the resources needed to produce meat, eggs, and dairy products. The best feed depends on the type of livestock, as listed in the Priorities Summary Tables for each type of livestock, above. There

are two certifications for grass-fed beef and lamb: USDA Certified Grass Fed and American Grassfed Association (AGA) Certified. The AGA certification standards are stricter than the USDA standards, which include animals confined in pens but fed grass or hay. The AGA standards are also third-party verified, but the USDA standards are just a federal definition of a labeling term and are not verified by the USDA.

Antimicrobial (antibiotic and antiretroviral) use: Scientists and health professionals are increasingly concerned about the widespread practice of routinely feeding livestock sub-therapeutic doses of antimicrobials. The purpose of this practice is to prevent infection and to increase animal growth. The danger is in increasing selection for resistant bacteria and viruses, which may then infect humans, making it much more difficult or impossible to treat than susceptible strains. Several studies have found increased antimicrobial resistance in bacteria in animals treated with sub-therapeutic antimicrobials[46]. Other studies have found resistant bacteria in retail meat[47].

Because of this problem, the European Union has banned using any antimicrobials to increase animal growth and has banned any use in animal agriculture of certain antimicrobials that have been deemed important to human health[48]. In the U.S. these practices are still generally allowed, but USDA Certified Organic standards forbid the administration of any drugs (with the exception of vaccines) to healthy animals. Under this standard, sick animals on organic farms may be treated with approved medications, although they may not then be sold as organically produced until a withdrawal period has passed. If a non-approved drug is used, the animal can never be sold as organically raised[49]. Hampshire College prioritizes purchasing animal products from producers who do not feed antimicrobials to healthy animals.

Hormone and Steroid use: Use of Recombinant Bovine Growth Hormone (rBGH) or steroid growth promoters has been banned in the European Union and is prohibited under the certification standards of USDA Organic, Food Alliance, American Humane, and Humane Raised and Handled.

Also called recombinant Bovine Somatotropin (rBST), rBGH is a man-made version of a hormone naturally produced by cows. It is administered to dairy cows to increase milk production. This practice has been shown to have adverse health effects on cows, such as increasing mastitis (udder infection)[50]. Concerns have also been raised about potential impacts on human health, whether from consuming milk from cows treated with rBGH or from environmental contamination through rBGH in animal waste. While studies of human health effects have been inconclusive, Hampshire College prefers to avoid milk and dairy products produced using rGBH.

Beef cattle are commonly treated with steroids to increase muscle growth[51]. These steroids are often referred to as "growth promoters," but that phrase is also sometimes applied to sub-therapeutic use of antimicrobials. Steroid use is federally prohibited in pork and poultry production[52]. This practice has so far been found to have a relatively small effect on the level of steroids in beef, but concerns remain about link between steroids excreted in urine and manure water supply contamination. Several studies have found increased steroid concentrations in water downstream of beef feedlots where artificial steroids are administered[53]. Other studies have found adverse effects of these increased steroid concentrations on fish living in contaminated waters[54].

Humane Treatment of Animals

To clarify the priorities listed at the beginning of the Animal Products section, some terms should be defined and practices described. Hampshire College aims to support farmers who treat livestock with respect and strive to use humane practices.

AFOs and CAFO: Animal Feeding Operations (AFO) and Concentrated Animal Feeding Operations (CAFO) are terms defined by the Environmental Protection Agency (EPA). An AFO is a livestock farm where animals are raised and fed in confinement, with little room to move and no access to pasture. A CAFO is a large AFO, with a certain minimum number of animals that depends on the type of livestock being raised[55]. These kinds of feedlots are considered inhumane by many animal rights organizations. In addition, concentrating animals in an area can lead to surface and groundwater contamination[56, 57].

Best practices for poultry and eggs: Birds raised for meat or eggs have an instinct to peck and scratch for insects. When confined too closely, they tend to peck and scratch each other more. AFOs and CAFOs often deal with this problem by removing the birds' beaks. A more humane option is to provide the birds with enough space to move and with free access to pasture. However, pecking and scratching can still be a significant problem in poultry flocks, so humane certifications allow limited beak trimming or tipping.

Best practices for beef and dairy: As noted previously, pasturing beef and dairy cows and feeding them hay or silage in winter is preferable for sustainability and food quality reasons. Pasturing is also more humane because it allows the animals plenty of space to move. Additionally, the hormones described above (rBGH or rBST and steroids) have adverse effects on animal health and welfare, and their use should be avoided.

Best practices for pork: Ideally, pigs should have access to pasture where they can root and forage. If pigs are raised indoors, their pens should meet American Humane or Humane Raised and Handled certification standards. Objections have been raised regarding the use of gestation crates (used to confine pregnant sows) and farrowing pens (used to confine nursing sows). However, their use is allowed under American Humane Certification Standards: gestation crates are allowed for a limited time to ascertain whether fertilization has succeeded and farrowing crates are allowed to prevent piglets from being crushed[58]. Alternative management tactics to decrease risk of crushing include decreasing concentration of animals by farrowing outdoors or separating piglets from sows in a heated area with a divider that allows nursing.

Best practices for mutton and lamb: Sheep tails are often docked (shortened) to prevent infestation with a parasite called fly-strike or wool maggots. American Humane Certified standards require that this practice be performed only when the risk of the animals suffering from fly-strike makes it unavoidable. When tail docking is performed, it is recommended that as little of the tail be removed as possible[59]. The Hampshire Farm Center uses the rubber band method to dock lamb tails, a practice which is recommended by the American Humane Certified standards.

Seafood

Priorities Summary

Hampshire College prioritizes purchasing seafood procured from sustainably-managed fisheries or farms, which is low in mercury and PCBs. The purpose of the following section is to provide information to help choose foods that meet these standards.

Table 6: Seafood Priorities Summary

This table was created by the Monterey Bay Aquarium Seafood Watch Program[60]. For seafood not listed here, check their more comprehensive Buyer's Guide[61]. Also check the Environmental Working Group rankings of seafood contamination with mercury and PCBs[62]. If a seafood in a recipe appears in the "Avoid" column below, check the Seafood Watch Alternatives chart[63].

BEST CHOICES	GOOD ALTERNATIVES	AVOID
Arctic Char (farmed)	Black Sea Bass (US Mid-Atlantic)	Caviar, Sturgeon* (imported wild)
Barramundi (US farmed)	Bluefish*	Chilean Seabass/Toothfish*
Catfish (US farmed)	Caviar, Sturgeon (US farmed)	Cod: Atlantic (Canada & US)
Clams, Mussels, Oysters (farmed)	Clams: Hard, Quahog, Surf (wild)	Crab: King (imported)
Clams: Softshell/Steamers (wild)	Cod: Atlantic (Gulf of Maine hook & line)	Flounders, Halibut, Soles (US Atlantic, except Summer Flounder)
Cobia (US farmed)	Cod: Atlantic (imported)	Hake: White
Cod: Atlantic (imported hook & line)	Crab: Blue*, Jonah, King (US), Snow	Mahi Mahi (imported longline)
Crab: Dungeness, Stone	Flounder: Summer (US Atlantic)*	Monkfish
Croaker: Atlantic*	Haddock (US trawled & Iceland)	Orange Roughy*
Haddock (US hook & line)	Hake: Offshore, Red & Silver	Pollock: Atlantic (Iceland trawled)
Halibut: Pacific (US)	Herring: Atlantic	Salmon (farmed, including Atlantic)*
Salmon (Alaska wild)	Lobster: American/Maine	Sharks* & Skates
Scallops (farmed)	Mahi Mahi (US)	Shrimp (imported)
Squid: Longfin (US)	Oysters (wild)	Snapper: Red
Striped Bass (farmed & wild*)	Pollock: Alaska (US)	Swordfish (imported)*
Swordfish (Canada & US, harpoon & handline)*	Pollock: Atlantic (Canada & US)	Tilapia (Asia farmed)
Tilapia (US farmed)	Scallops (wild)	Tilefish (US Southeast)*
Trout: Rainbow (US farmed)	Shrimp (US, Canada)	Tuna: All Canned, Albacore*, Skipjack, Tongol (except troll/pole)
Tuna: Albacore (Canada & US Pacific, troll/pole)	Swordfish (US)*	Tuna: Bigeye, Yellowfin (longline, except US Atlantic)*
Tuna: Skipjack, Yellowfin (US troll/pole)	Tilapia (Central & South America farmed)	Tuna: Bluefin*
Tuna: Bigeye (US Atlantic troll/pole)	Tilefish (US Mid-Atlantic)*	
	Tuna: Bigeye, Yellowfin (US Atlantic longline)*	

Support Ocean-Friendly Seafood

Best Choices are abundant, well-managed and caught or farmed in environmentally friendly ways.

Good Alternatives are an option, but there are concerns with how they're caught or farmed – or with the health of their habitat due to other human impacts.

Avoid for now as these items are overfished or caught or farmed in ways that harm other marine life or the environment.

Key

US Mid-Atlantic = North Carolina to New York
US Southeast = Texas to South Carolina
* Limit consumption due to concerns about mercury or other contaminants.
Visit www.edf.org/seafoodhealth
Contaminant information provided by:
ENVIRONMENTAL DEFENSE FUND

EDF

Seafood may appear in more than one column

Desirable Certifications: Marine Stewardship Council Certified, listed as Best Choice by Monterey Bay Aquarium Seafood Watch Program.

Sustainable Fisheries and Seafood Farming

For some types of seafood, wild-caught is most sustainable. For others, farmed options are best. And for some types of seafood, no sustainable options are available. These should be avoided altogether. The best resources for choosing sustainable seafood are the Monterey Bay Aquarium Seafood Watch rankings[64] and Marine Stewardship Council Certification.

In general, the most sustainable wild seafood fisheries aim to catch no more fish than what can be replaced the rate of reproduction of the wild population. Additionally, sustainable fisheries use methods, such mid-water-column trawling and modified hooks on long-lines, that have minimal impact on the ocean habitat and catch as few non-target organisms as possible. Seafood farming, or aquaculture, can reduce the pressure on wild populations, but only if sustainable farming methods are used. Farming herbivorous or filter-feeder seafood is generally more sustainable than farming carnivorous fish, because often farmed carnivorous fish are fed

wild-caught fish-meal. Similarly, fish that are wild-caught when young and then raised to market-size in fish-farms should be avoided, because this type of farming also reduces the wild populations. Land-based aquaculture is generally considered more sustainable than ocean-based net pens, because diseases, pollution, and escaped organisms are less likely to impact wild populations[65].

Contaminants in Seafood

The primary contaminants in seafood are mercury and polychlorinated biphenyls, or PCBs.

Mercury is a naturally occurring toxic element. Coal-burning power plants have increased its concentration in the atmosphere and water bodies by releasing mercury bound up in coal. Once in water, mercury is converted into methylmercury, which accumulates more easily in animal tissues than elemental mercury. Mercury and methylmercury are toxic to the nervous system and kidneys. Children are most at risk for brain damage from mercury exposure, because their nervous systems are still forming. Children and women of child-bearing age are particularly encouraged to avoid foods that may be contaminated with mercury[66].

PCBs have been used in many industrial products, such as hydraulic fluid. Their use has been banned in the U.S. since 1977, but they break down very slowly in the environment. According to the Environmental Protection Agency, chronic exposure to PCBs may be harmful, particularly to fetuses and young children [67].

Both mercury and PCBs tend to "bioaccumulate," or build up in an animal's tissue over its life-time. Contaminants that biomaccumulate tend to be found in increasing concentrations towards the top of the food chain. This means that predatory fish usually have the highest contamination by mercury and PCBs.

Dry, Preserved, and Prepared Foods

This category includes grains; flour; legumes; nuts; oils; coffee; tea; chocolate; soda; juice; and canned, frozen, and prepared foods.

Priorities Summary

Hampshire College prioritizes local, healthy, minimally processed food that is grown and prepared using sustainable practices and under fair and safe working conditions. The purpose of the following section is to provide information to help choose foods that meet these standards.

Desirable Certifications: USDA Certified Organic, Food Alliance Certified, Fair Trade International, Fair Trade USA, Bird Friendly (only applies to coffee)

Sustainability Issues

This category covers many varied types of food. The sustainable farming practices, fair labor practices, and local sourcing described in the General Priorities section remain important

when purchasing all the types of food covered in this section. Variations on these topics or sustainability issues unique to specific types of foods are described below.

Dry goods: grains, flour, pasta, legumes, nuts, etc.: Local grain production is experiencing a resurgence in the Northeast[68, 69]. As local production increases, partnering with local producers to supply Hampshire's grain and flour needs may become feasible. Dry beans may also be available from local farms, but, as with grains and flour, the scale of local production may not be large enough to be compatible with Hamsphire College's needs. Farm cooperatives may be developed over time. In the meantime, purchasing Certified Organic flour, grains, and beans is prioritized.

Whole grain flour (and pasta) contains more nutrients than white flour. This is because white flour is made by removing the outer parts of the grain (bran, endosperm, germ) which contain most of the valuable nutrients, leaving mostly starch behind. However, whole grain flour has a higher gluten content than white flour, which can make it more allergenic to certain people and changes its properties and flavors in baking.

Oils: Hampshire College prioritizes Certified Organic oils. Currently, used cooking grease is given to the Hampshire College Alternative Fuels Collective to be made into biofuel[70].

Sweeteners: sugar, syrup, honey: Maple syrup and honey are available as close as the Hampshire College Farm. Sugarcane is not grown locally, but organic, fair trade sources are available.

Canned and frozen foods: Hampshire College is interested in exploring the possibility of working with local processing facilities to can or freeze fresh local produce in the growing season for consumption in the winter[71]. When purchasing canned or frozen foods, Certified Organic products are prioritized.

Prepared foods: Hampshire prioritizes from-scratch food preparation. When prepared foods, such as baked goods or tofu, are purchased it may be possible to find a local source.

Coffee, tea, and chocolate: Local sources are not available, because coffee, tea, and chocolate are not grown in the Northeast U.S. However, Hampshire College prefers to support sustainable farming practices by purchasing certified organic products which also have a Fair Trade designation. Additionally, shade-grown coffee reduces the impact of coffee plantations on the surrounding rainforest, in many ecosystems. An additional shade-grown certification is available through the Bird Friendly label of the Smithsonian Migratory Bird Center[72].

Soda, juice, and bottled water: Hampshire prioritizes sodas and juices that are good sources of vitamins and minerals and are low in artificial sweeteners. Hampshire College prohibits the sale of bottled water on campus[73]. Bottled water safety regulations are less stringent and more laxly enforced than tap water regulations, while drinking bottled water creates more plastic waste than drinking tap water[74].

Index of Certifications

Consumer Reports Eco-Labels. A database and review of the trustworthiness of labels and certifications. http://www.greenerchoices.org/eco-labels/eco-home.cfm?redirect=1

American Grassfed Association Certified: http://www.americangrassfed.org/
American Humane Certified: http://www.humaneheartland.org/
Bird Friendly (shade-grown coffee): http://nationalzoo.si.edu/scbi/migratorybirds/coffee/
Certified Humane Raised and Handled: http://www.certifiedhumane.org/
Fair Trade International: http://www.fairtrade.net/
Fair Trade USA: http://fairtradeusa.org/
Food Alliance Certified: http://foodalliance.org/
Marine Stewardship Council Certified: http://www.msc.org/
Monterey Bay Aquarium Seafood Watch Recommendations: http://www.montereybayaquarium.org/cr/cr_seafoodwatch/sfw_recommendations.aspx
USDA Certified Organic http://www.usda.gov/wps/portal/usda/usdahome?navid=ORGANIC_CERTIFICATIO
USDA Verified Grass-fed: http://www.ams.usda.gov/AMSv1.0/ams.fetchTemplateData.do?template=TemplateU&page=Newsroom&topNav=Newsroom&leftNav=&rightNav1=LatestReleases&resultType=Details&dDocName=STELPRDC5063773&dID=81643&description=USDA+Establishes+Grass+%28Forage%29+Fed+Marketing+Claim+Standard Is there a better website for this?

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