

Organic Produce:

An Examination of its Feasibility in Dining Services
At the University of Michigan



A Report By

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Executive Summary

Organic foods can be introduced into the Residence Hall Dining Services here at the University of Michigan, and they should be. The ecological advantages of organic farming are profound; as opposed to conventional practices, organic farming prevents soil erosion, adds nutrients to the soil, avoids disruption of natural processes and operates without the widespread contamination of waterbasins, groundwater supplies, and the soil with harmful pesticides and synthetic fertilizers. Organic farming poses reduced risks to human health because organic products are not irradiated, genetically-engineered, or doused with billions of pounds of unsafe pesticides and herbicides. Organic farms follow the model of traditional America, knitting communities together and contributing to local economies.

Organic products are more expensive, generally, than conventional foods, although some organic products are cheaper. On average organic products appear to be 20% more expensive, but many options cost little more than the current produce that Dining Service purchases. It's possible that by buying organic produce over the summer months, when it's more plentiful, by investigating national distribution networks, or by using the University's considerable market power, these organic prices could be even further reduced.

More than a dozen other national colleges and universities have undertaken organic programs and overcome the challenges that organic foods present. Although most of these institutions are smaller than the University of Michigan, both the University of Wisconsin at Madison and Iowa State University's Memorial Union have successfully begun organic programs. Their experience shows that organic produce is often higher in quality, that slight changes in bidding practices can lead to successful relationships with local organic farms, and that the problems of dealing with local farms' differing organizational structures, unpredictability due to pest infestation and weather, and scattered communication, billing, and delivery structures can be overcome by contracting with farmers' cooperatives.

The budget of the University's Dining Services Department place tight restrictions on the costs of the food that it purchases. Despite this, there are many funding opportunities that can help to defray added organic costs; composting and food waste reduction programs help to reduce the amount of money the University currently pays for services, and grants are often available to help fund efforts.

Research shows that students want organic products in the residence halls, and that introducing these products can be done efficiently and cost-effectively. The University should make the commitments necessary to introduce organic products into the residence hall dining services.

Introduction

Before the "Green Revolution" when the use of man-made chemical fertilizers and pesticides became widespread, organic agriculture was the way people produced food. Now, after many farmers have become reliant on manufactured fertilizers and pesticides, organic agriculture has become an alternative, rather than the norm. Our group of five University of Michigan undergraduate students wanted to investigate the challenges involved and opportunities offered by introducing organic produce into the University of Michigan's Dining Services, which serve thousands of students daily. This report is a chronicle of our attempt.

There seems little doubt that our current system of agriculture has many problems. Traditional tilling practices lead to soil erosion of exposed topsoil through wind and rain. Water-intensive crops like cotton are grown in parched areas of the South and West, and poor irrigation and water conservation practices have led to predictions that our supplies of groundwater will run dry within a matter of decades. Billions of pounds of herbicides, insecticides, pesticides and fungicides are sprayed on our crops, but only rarely do these pesticides ever reach a pest. Some of these chemicals have been shown to cause grave health risks, but the extent of the danger is unknown, because the government is not required to test for safety before allowing chemicals on the market. The combinatory effects of the thousands of chemicals in use today can only be guessed at. And new genetically-engineered (GE) crops have been poorly studied, and pose unknown dangers to human health and the environment. Given all these problems, it's natural to ask if there are better alternatives.

Our group wanted to determine what the advantages of organic agriculture might be, and if organic products would fit in here at the University. The United States Department of Agriculture defines organic agriculture as, "*a production system that is managed by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.*" Organic produce is not irradiated, has not been sprayed with chemical pesticides, and does not include genetically-modified organisms.

Our first task was to investigate just what the social, moral, health, and environmental impacts of modern agriculture were and how organic agriculture might be better. This research is covered in Part One of this report. It is important to note that although local, sustainable, and non-GMO (Genetically-Modified Organism) crops can also offer advantages over traditional agriculture practices, these products were not directly investigated by our group. Often the products we investigated fit into one of these alternate categories, but this was merely coincidental.

Secondly we called a number of organic producers and distributors to determine, from an economic standpoint, how feasible it was to introduce organic foods here at the University. We compiled a list of organic products that were available and compared

their prices with those that the University currently pays for the products that it buys. The results of our analysis can be found in Part Two of this report.

We also investigated other colleges and universities that have already introduced organic products into their dining systems. Our group found thirteen such institutions that have experimented with organics, and we examined many of the challenges and successes that they faced in their innovative efforts. Drawing on their experience, our group attempted to apply these lessons to the University of Michigan. These investigations form Part Three of this report.

Financing is an important element to consider in any project, and we considered this aspect in Part Four of this report. Here our group examines many of the financial aspects involved in purchasing products for the University, ranging from the Dining Services to the M-Stores Purchasing Department. Several potential sources of funding are also evaluated in this section.

Part Five concludes this report. In this section we examine current staff and student receptiveness to organic foods, and potential educational programs that could help sustain and foster any organic introduction here at the University of Michigan. Following this section our group offers a list of actions that we think, based on our research, the University should take in relation to organic foods. This report is rounded out by a resource page that contains the contact information for many of the people that we spoke with through the course of our research, a short list of references, and the appendixes.

Our goals in completing this project were to find out just what the possibilities were for organic foods here at the University. After finishing our examination we believe that possibilities do exist, and that all that's really required to implement them is the commitment to do so.

Part One

The Organic Advantage

There are many reasons to introduce organic foods into a dining service program, issues that center around the environment, issues of human health, and generally issues of sustaining life on this planet for future generations. Organic farming, using “nature as the standard” for success has stood the test of time extending “back at least 2000 years before Jesus of Nazareth.”¹ (Page xii) In recent years organic crops have become agriculture’s fastest-growing segment, rising from a \$178 million market in 1980 to more than \$5.4 billion in 1998.² But the slice of the government’s research budget devoted to assist growers of organic crops, it says, is flat at 0.1%. The focus of this section is to examine the advantages of organically produced food in terms of ecological issues, health issues, moral/ethical issues, and social/community issues. Also included will be a segment that discusses the lack of accountability of modern pesticide agriculture towards the environment and a segment about the certification standards of organic foods.

Some Definitions

*Conventional food production*³—more appropriately referred to as “pesticide farming” or “modern agriculture.” Unlike organic farming modern practices are the product of the latter half of the 20th century. Modern agricultural practices are based on the use of “large amounts of pesticides” and intensive land use which cause erosion, pest resistance, lack of biodiversity, surface water and ground water contamination.⁴ (Page 196)

Organic food production—A production system that is managed in accordance with the 1990 Organic Food Production Act by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.⁵

Ecosystem—all living organisms in an area plus the physical environment with which materials and energy are exchanged.¹ (Page 85)

¹ Soule, Judith D. and Piper, John K. *Farming in Nature’s Image*. Washington, D.C.: Island, 1992

² Phillips, Jon C. and Peterson, Dr. Christopher. *Demand Overview for Organic Produce*. March, 2001.

³ In this report the terms conventional, modern, and pesticide agriculture will be used interchangeably to refer to the dominant farming practices that follow the definition above.

⁴ Creighton, Sarah Hammond. *Greening the Ivory Tower: Improving the Environmental Track Record of Universities, Colleges, and Other Institutions*. Cambridge, MA: MIT Press, 1998.

⁵ United States Department of Agriculture homepage. <http://www.ams.usda.gov/nop/> Viewed on March 29, 2001.

Sustainable Agriculture—farming practice that “ecologically sound, resource-conserving, and not environmentally degrading.”⁶ (Page 367) In other words agriculture that can meet the present needs of humanity without compromising the ability for future generations to meet their own needs.

Foods labeled as organic or organically grown have been raised and harvested without the use of synthetic pesticides or fertilizers. Organic farmers employ safer, more ecologically sound methods of farming such as crop rotation and diversification and the use of natural fertilizers & soil builders (compost, manure), beneficial insects,



biodegradable herbal sprays, and mulches.⁷ Some of the basic principles employed by organic farming include: nature as capital (there is a concern for finite resources and the preservation of nutrients, because they are given value), soil as the source of life (proper levels of organic matter are maintained and bacterial and biological activity is sustained), feeding the soil instead of the plant (healthy plants, animals, and humans are aided by balanced and biologically active soil), crop variation (monoculture is seen as unstable to the environment), and personal and community independence (releasing people from dependence on

commercial agricultural production and distribution systems). While organic farming is a means of ecologically friendly farming, it can also be a way of life. In its purest essence the aim of organic agriculture is to nurture nature, understanding that nature will provide nurturing in return.⁸ (Page 18).

Full-cost Accounting: Ecology and Economy

Environmental degradation and human illnesses can be byproducts of commercial, pesticide or conventional farming. Ultimately the full cost of mass-produced food includes “externalities” not included in the grocery store price. For example, producing cheap foods relies heavily on the nonrenewable fossil fuels responsible for increased levels of green house gases and acid rain. The runoff from farm chemicals often leads to local groundwater pollution, and increasing mechanization and imported food leads to worker displacement. As the cheapest means of production is focused on, exploitation of local migrant workers or citizens in developing countries increases. Pesticide use is also costly, poisoning thousands of workers, especially in countries with

⁶ Gliessman, Stephen ed. *Agroecology: Researching the Ecological Basis for Sustainable Agriculture*. New York: Springer-Verlag, 1990.

⁷ *Organic: What's It All About?* People's Food Co-op, 2001.

⁸ DeLind, Laura B. Editor. *Eating Organically: A Guide to Michigan's Organic Food Producers and Related Businesses*. Michigan Organic Food and Farm Alliance: Michigan State University, 1999.

few environmental standards and posing health risks to consumers. Finally hidden costs of agribusiness rest in the tax incentives and food subsidies paid to large agribusinesses and food corporations. Adding such “hidden” costs into the price of foods, should place the possible costs and inconveniences of organic farming in a new light.⁷ (Page18).

“Organic prices reflect the real costs of producing food. With most food we defer the costs by borrowing from the environment and the future.”

—Fred Kirschermann, North Dakota grain and livestock farmer

Certification

The 1990 National Organic Food Production Act was enacted to establish the criteria and certification regulations that would give uniformity and credibility to organic processes and products—to define the organic label across the U.S. The dissemination of these standards has been a contentious issue.⁵ In its final form the standards exclude irradiated and genetically-engineered foods from being labeled as organic products.⁵ Farms that produce organic foods must have been chemical-free for three years.⁵

Ethics of Organics

Today consumers have become increasingly disconnected from their food sources. Many people do not realize and understand the inputs and outputs of farming, whether organic or conventional. Organic farming, especially small locally-supported production, has the ability to connect people to their food supply. “We have a responsibility,” said Dr. Seyhan Ege, a Chemistry Professor at the University of Michigan, “to share the risk of the farmer, to support them in their venture to produce food for us.”⁹ For Ege, who participates in a local community supported farm in Ann Arbor, Michigan, it’s about “going against the grain,” not supporting the massive industrial farms that are already subsidized by the government. More importantly, it’s about feeling connected to the source of her food, aware of how it is produced and who is producing it. Organic farming is “how it used to be, and how it should be,” says Ege.



Health Advantages

The core principle of organic farming is the responsibility to avoid chemicals and synthetic fertilizers. Organic food is “fast shedding its counter-culture associations and moving into the mainstream,”¹⁰ largely due to concern over food safety among

⁹ Personal interview with Seyhan Ege, Professor of Chemistry, University of Michigan. April 11, 2000.

¹⁰ Ebenkamp, Becky. “Food Fear Thought.” Brandweek, New York, Jan 17, 2000.

consumers. “It has now replaced pharmaceuticals, consumer fraud and tobacco regulation as the second highest concern with consumers.”¹⁰

Health issues associated with conventional farming are a major issue for many organic produce customers. The nitrate content of groundwater is a worldwide problem caused by modern agriculture’s excessive use of fertilizers. On average around 50% of fertilizers applied to crops in the US never reach the plant. Instead they seep into rivers and drinking water supplies. Nitrates are toxic to infants at ten parts per million. At 45 parts per million they can cause fatal methemoglobinemia sickness or “blue-baby syndrome” when babies receive formula made from contaminated water. Use of pesticides and herbicides further exacerbate health problems caused by modern agriculture. Research has connected some pesticide use with health problems ranging from allergies to cancer. “Throughout rural America, agricultural chemical use is associated with elevated rates of certain cancers.”¹ (Page 37) Farmworkers are also routinely exposed to toxic chemicals in their daily work. Agriculture in the US ranks in the top three, with construction and mining, as having the worst records for injury and death. As if it were not bad enough already humans also run the risk of exposure to chemicals through eating contaminated food.¹ (Pages 39,42) “Foods grown by non-organic methods, using chemical fertilizers, pesticides and other artificial substances, have been shown to contain noticeable levels of toxic residues in all such produce.”¹¹ (Page 13) Concerns over pesticide use and human health levels have gone mainstream.¹¹ (Page 13) The long-term effects of diets that result from modern agricultural practices like the use pesticides and hormones “are essentially *unknown*.”⁴ (Page 196) A Surgeon General’s Report in 1988 on Nutrition and Health showed that as many as 10,000 cancer deaths could be caused by chemical food additives annually.⁴ (Page 196) Consumers today are constantly exposed to pesticides, herbicides, hormones, and antibiotics.⁴ (Page 198) Personal health concerns have become an important reason for consumers to buy organic food.

Enhancement of Community

Low food prices, high taxes and eager buyers often represent overwhelming incentives for farmers to sell land. Hence, any economic support of these farms through purchasing their products can be invaluable in terms of sustaining small farms, particularly small organic farms, within the community. Maintaining organic farmland helps ensure biodiversity, discourages runoff and maintains scenic beauty in a community.⁸



¹¹ Loveglo, Beau. *Why Panic? Eat Organic!!* Loveglo and Comfort: Tempe, 1989.

Ecological Sustainability

Organic farms operate as their own distinct ecosystem, much as a bioregion would in nature. Sustainable farming practices do not cause the nutrients on the farm to disappear, there is a constant recycling of crop wastes, and a rejuvenation of the soil using manures and compost. Most organic farms can also be seen as ecological agriculture since they “treat the farm as a living organism, community, or ecosystem.”¹² (Page 28) The essential practices which help a farm to operate ecologically include minimum tillage practices that maintain the root zone and hold organic matter, a proper ratio of livestock which provides nitrogen and other nutrients for high quality soil, crop rotations which also maintain the root zone and refurbish minerals to the soil, and soil preserving crops which prevent soil erosion and keep the nutrient layer intact.¹² (Pages 28-29)

According to the Organic Growers of Michigan the first major factor in synthetic-chemical-free agriculture is the quality and health of the soil. No synthetic materials can be used in food production, this means no synthetic fertilizers, pesticides, additives, hormones, or antibiotics are allowed.⁸ Conventional farming methods on the other hand “fail to sustain its own capital: living soil.”¹ (Page 12) There are many ecological



problems caused by modern or conventional agriculture—one of these is soil erosion. Every harvest causes more soil to be lost than is rebuilt. Billions of tons are washed or blown away each year. Soil is the essential medium for food production, and it takes between 300 and 1000 years for an inch of soil to be formed naturally. The same amount of soil can be eroded in less than 2 years using traditional practices. Erosion increases the risks of farming, making crops more vulnerable to insect damage, disease, and drought due to a loss of organic

matter. It thus increases the cost of farming as more fertilizers and pesticides must be used. Soil erosion also has significant impacts off the farm. Sediments build up in water bodies interfering with biotic life. Pesticides and fertilizers carried with the soil make problems worse. Nutrients from fertilizers create algal blooms that reduce oxygen supplies for fish and other aquatic life. Flooding caused by increased run-off from eroded landscapes is another serious issue.¹ (Pages 12-15)

A dominant theme in modern agriculture has been the reduction of diversity where limited genetic varieties have taken the place of a multitude of locally-adapted

¹² Korn, Larry; Snyder, Barbara; and Musick, Mark eds. *The Future is Abundant: A Guide to Sustainable Agriculture*. Tilth: Arlington, 1982.

strains. “Declining genetic and species (biotic) diversity threatens the sustainability of agriculture and the resiliency of the ecosphere.”¹ (Page 18) Because of this loss of diversity “plant populations are rarely self-reproducing or self-regulating.”⁶ (Page 7) This creates a dependency on human inputs. The danger of widespread use of single varieties of crops is that pests can more easily destroy vast crop systems. As farmers abandon diverse locally adapted varieties, the breeding base of crops is depleted.¹ (Pages 17-18)

Agriculture is essentially a process of gathering the sun’s energy into food and fibers through photosynthesis, but it would be “absurd to call modern agriculture a solar-powered enterprise.”¹ (Page 21) Modern agriculture is extremely dependent on fossil fuels and electricity. This has increased production but also inflated the picture of the earth’s capacity to support humans since it assumes an infinite supply of fossil fuel. Nearly all operations are energy-intensive from fertilizers and pesticides to transportation and tractor power. It has been calculated that for each unit of food energy produced by U.S. agriculture, two units of energy are used. Further if only food that is actually eaten is measured the ratio becomes three to one and if all energy costs are calculated (shipping, processing, and preparation) nearly ten units of energy are spent to create one unit of food energy in the U.S.¹ (Pages 21,23)

Only one-sixth of global cropland is irrigated. However those 680 million acres use close to three-quarters of human water consumption globally. Major farming regions are exceeding sustainable water use. Evidence can be found in dropping water tables, increasing reliance on “water mining,” and rivers that no longer reach the sea. In underground aquifers water is being pumped out faster than it can be refurbished by percolation through the soil. “In agricultural use, not only is a great deal of water lost to inefficiency, but very little of it is returned to the source for reuse.”¹ (Pages 29-30)

“In ecological terms, pesticides have created more pest problems than they have solved.”¹ (Page 46) Although the chemicals of the green revolution may have increased food production, by 1986 they also created hundreds of resistant pest species. R. Kowalski, in “Organic Farming—A Sound Basis for Pest Management?” writes that the introduction of chemical pesticides did little to change crop losses. Crop losses to insects doubled since the 1940s while insecticide use increased tenfold. Thus, while intensified pest outbreaks do not directly endanger human lives they have set up a dangerous perceived need for the increased use of chemicals in modern agriculture.¹ (Page 46)

On the other hand eating local and organic food encourages energy and waste conservation. One fifth of all petroleum used in the United States is now used in agriculture. Organic production systems do not rely upon the input of petroleum-derived fertilizers and pesticides, saving resources. Buying from local producers also conserves energy at the distribution level. Furthermore, most of the traditional foods in grocery stores are transported and displayed with energy-costing and waste-producing packaging and production. Buying food directly from farmers eliminates such excess packaging, cutting down energy use and waste production.

Dr. Seyhan Ege feels that organic farming will grow, as people become more interested in their food. For her organic production is significant because organic plants are well fed and thrive in a good quality soil medium. This gives plants strength and resistance against pests and disease. Organic matter is plowed back into the soil and less plant material is therefore wasted.⁹

Conclusion

Organic farming, in nature's image, is a sustainable process that preserves the ability for future generations to meet their own farming needs. Conventional agricultural systems do not achieve this goal. Humanity has become increasingly reliant on large scale agribusinesses that use excessive amounts of chemical fertilizers, energy, water, and land. Farming practices that eliminate these unnecessary inputs and internalize the negative externalities that come out of an agricultural system can reverse the legacy of ecological degradation and human illness. Furthermore, an agricultural system should connect people to the land and invigorate centralized communities as organic production does. These are all things that can be achieved through an organic agricultural system.

Part Two

The Costs of Organic Foods

Cost is an important issue in deciding what is purchased for the University of Michigan Dining Services. Therefore, a thorough analysis of organic and inorganic prices from a range of sources is necessary in order to make the best decision for the University. This section discusses the data pool that our group collected and offers an analysis of these organic prices. This analysis compares the information available for organic produce with the inorganic produce currently purchased by Dining Services and outlines the possibilities of buying organically at the University of Michigan.

This section outlines the data collected on prices of organic food from a small sampling of organic distributors. It is important to note that this is a sample from a small data pool and more information needs to be collected in order to give dining services a fuller picture of organic food prices. The data pool includes three Michigan distributors: Cascadian Home Farm, Blooming Prairie, and J.A. Besteman Co. These three companies are in a middle range in terms of size of organic producers and are not large, national corporations. The data collected represents a variety of food groups but does not include all of the produce available from these three distributors, because our group excluded organic products that may be available organically, but that the University of Michigan does not currently purchase. Further research into national distributors and their pricing systems may produce a different price list.

Our price chart lists a number of items that our group found were offered by area distributors. The inorganic prices shown in the attached price chart are current dining services purchasing prices for the spring of 2001. Their quantities are listed and costs compared with the organic products on a per-pound basis. Flat dollar differences and percentage differences in price are examined, and finally, their sources (which company) are given. The orange shaded rows indicate organic products that are within 20% of the cost of currently-purchased food products; yellow columns indicate foods that are actually *cheaper* than their inorganic counterparts. All products are divided into categories: Bread and grains in one, fruit in another, and vegetables in the third. The average additional cost of these categories in terms of flat dollar amounts and also in percentages are listed. Finally, similar comparisons are offered for each farm, and for all the organic products that we examined. The data from Cascadian Home Farm was current as of November, 2000, and the organic prices for Blooming Prairie and J.A. Besteman come from the April, 2001 price listings.

Our analysis found that organic bread and grain products are on average thirty-nine cents more expensive than inorganic products. This was an increase in price of almost 22%. Organic fruit, we found, was twenty-four cents more expensive as a whole, an increase of a little more than 24%. Vegetables averaged at thirty-one cents more expensive, or a little more than a 20% increase. We were surprised to find a wider differentiation among the three farms that we examined; on average Cascadian Home

Farm's produce was 32% more expensive, J.A Besteman's was 9% more expensive, and Blooming Prairie's was 1% more expensive. On the whole organic items averaged thirty-two more cents than conventional items, a 22% increase.

However, as illustrated in the price table following this section, many organic items can be purchased for less than inorganic items. Just as some organic items are cheaper, some are much more expensive. This skews the percentages and it is important to do an item by item analysis in order to get the full picture. The best possibility may be for Dining Services to purchase organically when it is less expensive or comparable in cost. For the very expensive organic items, it may be better for Dining Services to purchase inorganically.

Organic and inorganic produce prices also vary considerably with the seasons. Although the University of Michigan is primarily purchasing food products in the fall and



winter months, when traditional semesters are in session, a minimal amount of purchasing is done in the summer. It is possible that offering organic products in summer months, when quantities are more readily available, would be possible at a reduced cost. However the data is not sufficient to make a solid conclusion.

In addition to the three larger Michigan distributors, our group also contacted several small area farms. Only one of these, however, gave us data about their food prices, and then for only two items. Tantre Farm charges sixty cents per pound for squash and fifty cents per pound for potatoes. Our group does not feel that the data yield enough information to make a reliable conclusion the prices offered by small farm organic producers. Further and sustained research into this area is needed.

The University of Michigan, as a large institution, has a great deal of purchasing power. Although it is not as powerful in purchasing as national food chains, in the organic world of small farm production and local distributors, the University of Michigan would be a major player. Larger distributors, like the ones used for the price comparisons, have a lot more flexibility in their prices than do small farms. Therefore it's possible, because of the size of the University account and the amount of food it purchases, that distributors would be willing to alter their prices to better fit the University's budget constraints.

In conclusion, this information provides the start for a more in depth price analysis. More information must be collected to give the full picture. But, given the data provided, there is a good possibility for the University of Michigan to purchase

organically in certain cases. The size of the contracted supplier, seasonality, and purchasing power can all play a role in organic and inorganic produce prices, and to get a true picture of these effects, more data is necessary. However possibilities do exist of providing some organic produce to University of Michigan students through dining services, at little additional cost.

Part Three

Organic Food Service Operations At Other Institutions and What They Mean for the University of Michigan

Before planning any action it's usually helpful to find out if others have accomplished what you're trying to achieve, and how they fared. In this section we'll examine organic and locally-grown programs from thirteen different universities and colleges across the country. Drawing on their lessons and learning from their experiences, this group hopes to develop avenues for the University of Michigan to follow. How would an organic program functionally work here at the university? We hope to find some answers.

It should be noted that although the focus of this section is on other American colleges and universities, a diverse array of other institutions have experimented with organic food programs, with varying degrees of success. These include the University of Trier, in Germany; public school initiatives like Mothers and Others CORE Values Northeast project for apple growers, New York City public schools and the Berkeley school systems; and smaller institutions like Heartwood, a certified massage school in California.¹³ (Page 11) No doubt each of these initiatives has something to teach the interested observer, but given the time constraints within which this project has developed our group felt that our time was better spent in examining institutions as similar to the University of Michigan as possible.

The schools that we looked at included:

Bates College of Maine
Carleton College of Minnesota
Evergreen State College of Washington
Grinnell College of Iowa
Hendrix College of Arkansas
The Iowa State University Memorial Union
Northland College of Wisconsin
Oberlin College of Ohio
Potomac State College of West Virginia
College of St. Olaf of Minnesota
Tufts University of Massachusetts
University of Minnesota Earle Brown Center
University of Wisconsin at Madison

Just in looking at this list of colleges and universities we can gain some valuable insight. Most of these colleges are not from the South or West, areas with longer growing

¹³ *Something to Cheer About: National Trends and Prospects for Sustainable Agriculture Products in Food Service Operations of Colleges and Universities.* (1998). Johnson, Douglas; Stevenson, George; Hendrickson, John.

seasons and a history of agriculture production; instead they are Midwest institutions, like our own. At first this might seem surprising considering the shorter growing seasons that Midwest farmers enjoy, but even this bare list of institutions provides proof that the difficulties of season and produce storage can be managed and overcome by enterprising institutions. Many of the institutions we examined dealt with the problem by contracting with local farmers when produce was in season, and national distributors from warmer climates over the winter months.

Another interesting point to note is that nearly all of these colleges are small-enrollment, liberal art institutions. Only the University of Wisconsin at Madison approaches the University of Michigan in size, with some 41,000 enrollees, 28,500 of them undergraduates.¹⁴ The other large institution mentioned is the Iowa State University Memorial Union, which serves some 500,000 meals annually. What does this small college pattern tell us? Are smaller schools simply more suited to the introduction of organic produce than larger schools? Is any University of Michigan initiative destined to fail from the start? The authors of *Something to Cheer About: National Trends and Prospects for Sustainable Agriculture Products in Food Service Operations of Colleges and Universities* suggest that perhaps smaller colleges are better suited to organic programs because of their unique missions, their community-centered values, their stewardship tenets, and their limited supply requirements.¹ (Page 24) However the authors of this study point out that while larger programs are more difficult to develop, they can be done. Certainly the examples above stand in proof of this. Although these larger institutions may have more lessons to teach an institution like ours, our group believes that the lessons of smaller colleges should not be ignored, and we'll therefore make the attempt to document them here as well. It should be noted that our own university, like any university, is bound to present unique challenges in introducing organics that can't be found by looking elsewhere. The purpose of this section of our report therefore is not to develop a watertight blueprint, only a framework for organic food introduction.



The specifics of the various university programs are left for Appendixes Alpha and Beta; within the body of this report we'll examine several innovations that other institutions have made in their programs and attempt to apply these to our setting at the University of Michigan. Many of these innovations will apply to contracting with smaller, local organic farms. This is because most of the schools we examined used these farms as their first option for organic foods, and secondarily because traditional distribution networks pose fewer challenges to the institutional environment that would need to be overcome.

¹⁴ University of Wisconsin at Madison homepage. www.wisc.edu. Viewed March 10, 2001

Issues of Quality

Most universities test food products to determine their quality. Each institution has self-determined requirements that a prospective food producer must meet. The University of Michigan has developed specifications for its food, ranging from its tastiness to its nutritional value. Have organic producers met such standards in the past?

The food service at Bates College found that organic produce was qualitatively superior since it hadn't been "waxed, gassed, preserved, packed, shipped hundreds of miles, sized out, repacked, and otherwise jostled along its journey."¹⁵ (Page 90) In their study of food service operations at Oberlin College, *Got Local?* the authors note that this increase in quality came with a corresponding trade off: local produce was seldom uniform in size or shape, and this was disconcerting for patrons.¹⁶ (Page 17) However the executive chef of Bates College, Bradford Slye, took this in stride, remarking, "I guess you have to like the food as it is, not expect anything to be the size and shape of a golf ball."¹⁵ (Page 91) At Bates, these unusual sizes and shapes enabled chefs to display their creative talents.

Issues of Labor

When organic produce is mottled, scabbed, dimpled, unskinned or otherwise unprocessed, dining services staff may need to invest their time in addressing this. St. Benedict and Bates, for example, still peel their own potatoes; however many colleges suffer from labor shortages or struggle to remain within their food service budget, and so are disinclined to do things manually that could as easily be performed by a machine.¹³ (Page 27) Discussions between universities and farmers can sometimes be profitable in developing resolutions to these problems; some farmers have developed food-processing systems on-site. The extent to which such programs can be initiated understandably depends on the individual farmers and their willingness; this evaluation was outside the scope of our project. The extent to which these programs would be needed for individual foods also depends on the processing that current food purchases undergo and the time constraints within which dining staff must operate. These determinations for the University of Michigan were not assessed by our group members. Most of the universities that our group investigated avoided the problem by simply buying those products, like apples, that



¹⁵ Keniry, Julian. *Ecodemia: Campus Environmental Stewardship at the Turn of the 21st Century—Lessons in Smart Management from Administrators, Staff, and Students*. Washington, DC: National Wildlife Federation, 1995.

¹⁶ *Got Local? Environment and Society Final Project*. Dellorco, Adriane; Crane, Terence; Hamburg, Cambria; Kenney, Michael. May 4, 2000.

don't require intensive processing. The University of Wisconsin at Madison was no exception in this respect; the organic products that it has served to date at its "Home Grown Wisconsin" organic meals have not required cafeteria staff to invest any more time than usual in food preparation efforts.¹⁷ The University of Wisconsin has currently committed to buying all of its baking potatoes and apples from local, more organic and sustainable sources, according to Matthew Goldfarb, a graduate student researcher at the Center for Integrated Agricultural Studies College Food Project.¹⁸ They are currently looking for a source to supply them potatoes that are washed and prepared so that they can be pricked and baked like normally-purchased potatoes.¹⁸

Issues of Seasonality

Because of the short- to medium-length growing seasons of northern tier states, institutions often find that there is a mismatch between the local growing season and the school year. As a consequence many locally-grown, high-quality late spring and early summer vegetables and fruit are ill-timed for the institution's food service calendar. For example Northland College, on the shores of Lake Superior, rarely purchases any local organic salad greens because they're often not available until the students have left for summer break.¹³ (Page 27)

Nearly all of the colleges we investigated purchased organic fall root crops like potatoes, onions, carrots, and turnips. Bates, Northland, and St. Benedict's offer local organic apples when in season, and locally-produced organic dry beans and grains are regularly offered by Bates, Northland, and St. John's. St. John's also purchases wild rice from Native American farmers and processors, and the ISU Memorial Union and Bates also purchase local tomatoes.¹³ (Page 27) The ISU Memorial Union purchases organic products including cucumbers, zucchini, carrots, and chicken.¹⁹

Value-added organic products (such as tomato paste, bread, and salsa) are sometimes available, depending on location. For instance in Minnesota, where several of the listed colleges are located, locally-milled organic flour and pasta products are available.¹³ (Page 27) Our group did not investigate to what extent such products may be available here.

Purchases of organic products may continue during the summer months if the university food services operate during this time. The University of Michigan does remain open over the summer, although at dramatically reduced levels of enrolled students. Usually a single dining hall is sufficient to house and feed all students. Despite this food purchases do fluctuate dramatically over the summer months, depending on

¹⁷ *Research Brief #55*. January, 2001. Center for Integrated Agricultural Systems, University of Wisconsin at Madison College of Agricultural and Life Sciences.

¹⁸ Telephone interview with Matthew Goldfarb, Researcher for the Center for Integrated Agricultural Studies College Food Project. April 18, 2001.

¹⁹ *Food Systems Program Report*. Winter, 2001. Huber, Gary. Available at www.pfi.iastate.edu/Newsletter/FTF%20Report%202015_4.htm

whether conferences or special area events need to be serviced.²⁰ This provides both the opportunity for small-scale purchases of organic produce and introduces the difficulty of coordinating university needs and farmer's schedules.

An innovative solution offered at several colleges are partial-year bidding opportunities. These allow organic farmers to contract with institutions to supply their products only during the months in which these products are available, instead of having to supply the college year-round. In discussions with M-Stores, the wing of the University of Michigan Purchasing Department concerned with food services, our group found that such options are theoretically possible at this university, but difficult to practically manage. Darlene Abbott, the Interim Director of M-Stores, pointed out that regular suppliers may not be enthusiastic about bidding merely for the remainder of the calendar year that a partial-year contract left open for them.²¹ Such an exclusionary envisioning of partial-year bidding may also cause difficulties for organic suppliers; the organic capacity simply may not be there to supply all the university's needs during the period of their partial contract. However opportunities exist to draft contracts for organic farmers to supply only a portion of the university's demand during the local growing season. We believe these could be pursued.

Issues of Storage

Often root crops and other organic foodstuffs can be supplied to university food services well into the winter months if proper food storage procedures are in place. For example Bates College is working with farmers to establish a cold storage facility to enable long-term potato storage with the Maine Potato Grower's Association.¹³ (Page 27) The University of Michigan has no such facilities itself, but our group did not determine whether or not area organic farmers may have already developed such a system.

Regular storage of organic produce, once it's delivered, could be effected either at M-Stores or at the individual residence hall kitchens. An interview with Bill Durell, the Director of Dining Services at the University of Michigan, revealed that residence hall kitchens are currently at or near capacity for food storage.²⁰ However this may not be a problem, because the perishable fruits and vegetables that the organic foods would replace are also stored in these kitchens.

Storage at the M-Stores facility is also a possibility, but may be more expensive. Appendix Gamma reveals that the process for storing materials at the M-Stores facility requires a number of extra administrative steps that are not necessary when food is delivered directly to the kitchens on campus and stored there. At the same time added costs are involved when products are delivered directly to the residence kitchens. "It's a different type of receiving to initially bring in a product than it is to do receiving from M-Stores. We've got one person doing supplies to M-Stores receiving where if it was done out in the units it needs to be done by several different...the same aspect of receiving by

²⁰ Personal interview with Bill Durell, Director of Dining Services, University of Michigan. March 29, 2001.

several different people.”²¹ Our group did not determine which of these options was the most cost-effective.

Issues of Communication

Sustained and forthright communication between a college and its organic suppliers can often make the difference between a successful and an unsuccessful organic initiative. At Bates, local farmers consult with the chef and Food Service Director about pre-planting decisions and food handling, storage, and delivery logistics.¹³ (Page 21) The area farmers tell the chef what produce they will have available a week ahead of time, and he is able to plan his meals to incorporate these products. As the program there



progressed, farmers have gotten a clearer idea of exactly what quantities and types of products the college can use and their planting decisions have better reflected this.¹⁶

(Page 17) Effective communication can also address the fact that farmers tend to produce similar products; when the institution is working with multiple farmers it becomes important

to elaborate on exactly what foods are needed instead of simply expressing a preference for organic foods.¹⁶ (Page 15) Communication can also address farmers’ concerns that if they increase production they may be left with any excess supply the university doesn’t require. Establishing avenues of conversation can help to address problems effectively when they arise during the growing process.

Issues of Institutional Support

Colleges attempting organic initiatives have found time and again that in order for their programs to be a success, they must be supported by a number of administrators and staff. The organic program at Hendrix College was plagued with problems because of the unwillingness of its dining services staff to deal with organic produce.²² If an initiative’s base of support is entirely composed of temporary community members like student activists or a few select faculty members, it often ends in failure.

²¹ Personal interview with Darlene Abbott, Interim Director of M-Stores, University of Michigan. March 29, 2001.

²² E-mail interview with Erin Hartz, employee of Hendrix Dining Services. February 26, 2001.

Issues of Volume

It's unlikely that area organic producers would ever be able to supply the entire food needs of the University of Michigan, or even all the organic foods that it could use. However food service production need not be an all-or-nothing enterprise; what foods are produced can no doubt be used. In our investigations our group has found apprehensions both on the part of farmers and the university; farmers shy away from the idea of supplying a massive university with tremendous produce demands, while the university personnel are wary that local producers could never supply the scale of their needs. Our group believes these apprehensions are misplaced. Food service is not an all-or-nothing enterprise, and even if it were, organic produce need not be purchased merely from local farmers. For example Bates College supplements its organic needs with supplies from warmer and more distant locales.¹³ (Page 21) The University of Michigan can too.

Another concern that we discovered was whether or not the University would be able to leverage additional production by using its market power and committing to buy



it. Our conversations with Purchasing Department personnel such as Darlene Abbott revealed that the University of Michigan is no longer the major market force that it once was on the national scene, as restaurant chains and supermarkets have consolidated their buying practices. However our group does not feel that this is relevant in the organic marketplace; producers are often very small and receptive to new marketing opportunities. Even the organic distributors that we've contacted have been relatively small in scale compared to conventional distributors. Our

group therefore believes that the university can consequentially have even more market power in the organic sector than it does currently in the industrial sector, and that this can only be conducive to future organic relationships with the University of Michigan.

Issues of Insurance

Nearly all colleges require that their food service suppliers carry an insurance policy. The University of Michigan is no exception; it requires a blend of workman's compensation, general liability insurance, automotive liability and employer's liability insurance.²³ The exact University of Michigan requirements can be found in Appendix

²³ E-mail interview with Sandy Barkman, Senior Buyer for M-Stores, University of Michigan. April 7, 2001.

Delta. Often the required policies are rolled together into one. At Oberlin College, its food service provider Sodexo-Mariott required \$3 million liability from each firm it purchased food from. At Oberlin this worked out to approximately \$2700 to \$3000 per producer.¹⁶ (Page 6) The costs of liability insurance are high enough to ensure that almost any organic producer thinking of supplying the university is going to want assurances of a market before bearing the burden of an insurance policy. Unfortunately these commitments are rarely forthcoming until an insurance certificate is on file. Farmers can address this dilemma by forming themselves into a farmer's cooperative, a single entity that only requires one insurance plan so that the costs can be divided between the member farmers.

Issues of Supplier Base

Colleges and Universities are often loathe to deal with a large number of suppliers. Fewer suppliers mean less paperwork and reduced overhead. "If you can take five vendors and put them down to one, then you're no longer taking those added costs of people handling each one individually, and eliminated that because you only have one purchase order to update, and one person who places the order with the company... Also, with one manufacturer, you can buy a truckload, or 500 cases minimum, where if you could buy a number of products with that one vendor, then you don't have to worry about putting 20 pallets in the warehouse because you can buy three of this one and four of this product and five of this one."²¹ It can also be difficult to deal with scattered local producers because of their differing organizational structures, their unpredictability due to uncertain harvests, pest infestation, and weather, and the difficulty involved in tracking down one producer to fill in supply when another has failed. Communication of needs and expectations also becomes difficult as the supplier base grows, and university staff already pressed for time need to spend longer hours in managing these farmers.

However by organizing area farmers into a cooperative, organic producers can more easily offer one-call shopping, centralized storage, organized and timely delivery, and product quality assurance and consistency over time. Producers can pool their resources to hire sales and marketing professionals to handle their operations.¹³ (Page 17) The institutional concerns can be addressed. Co-ops have successfully serviced many of the institutions we investigated, including Northland College and the University of Minnesota Earle Brown Conference Center. The University of Wisconsin at Madison also uses cooperatives including Homegrown Wisconsin, a vegetable cooperative, and Wisconsin Pasturelands, a meat cooperative.¹⁸ The co-op that services Bates College has organized rotational delivery amongst the six participating farmers, and the university's invoices were billed to the cooperative, which then apportioned the costs amongst its members.¹⁶ (Page 17) Organic cooperatives have begun to service Oberlin College and an organic produce brokerage, Red Tomato, is organizing to service the operations of Tufts University's food services. The Red Tomato brokerage will not take possession of the products it vends but will simply foster the sale and direct delivery. At Iowa State University (ISU) Memorial Union, the Practical Farmers of Iowa's (PFI) brokering efforts allowed the college to use one contact for placing orders, though the college was willing to pay farmers individually and to take multiple deliveries.¹⁹ PFI met several

times with organic vegetable growers and helped identify when fruits and vegetables would be available and what farmers expected to be paid for their products.¹⁹ Using this information PFI helped to develop a seasonal menu and set single prices for the products that applied to all participating farmers.¹⁹ In order to facilitate purchasing PFI created an email system for placing orders.¹⁹ Working with ISU staff and the data that they supplied, PFI estimated how much of the various foods ISU could anticipate using to help area farmers balance supply with demand.¹⁹ And PFI worked with ISU staff on procedures that included a “heads-up” call so that they had ample time to fill the orders, email order forwarding from the college through PFI to the farmers themselves, direct deliveries and billings by the farmers, and direct payments to the farmers by ISU.¹⁹

Partnerships with an institution’s current distributors can also address institutional problems. Marketing organic or sustainable produce under a distributor’s liability insurance umbrella is a shortcut that can benefit both the producer and the distributor.¹³ (Page 33) St. Benedict’s and St. John’s both make the bulk of their local purchases with a local distributor which carries organic produce.¹³ (Page 25)

Internet opportunities can also help to make it easier for colleges to purchase organic foods. Producers surrounding Grinnell College are in the process of developing a web-based marketing format that the college can turn to for one-stop shopping of local organic foods.¹³ (Page 12) A similar project is in the final stages of completion here in Southeast Michigan; called OrganicTrader, the webpage will include an on-line order system and search engine to locate the nearest local producers for a product. Eric Thurston, its creator, hopes that the webpage will facilitate the development of local coops because it would “eliminate much of the marketing footwork necessary.”²⁴

The Cooperative Connection

Since our investigations revealed how valuable farmers cooperatives have been for other colleges and universities, our group decided to undertake some preliminary investigations as to what would be required to set one up to supply the University of Michigan’s needs. We contacted Chris Fullerton, Manager of the Tuscarora Organic Growers Cooperative of Hustontown, Pennsylvania. The Tuscarola Cooperative is mainly composed of Amish farmers and has serve the Washington, DC metropolitan area since 1988. Mr. Fullerton states that, “Marketing co-ops really only work when they emerge from a group of growers who have a problem or need that can only be addressed by working together.”²⁵ He cautions that, “In order to make a marketing co-op work, the operating funds have to come out of the prices paid. If the dining hall is paying \$1.00 per pound for tomatoes, anywhere from five cents to forty cents might have to be used to fund the operation of the co-op (a commission of 5-40%). There's such a wide range here because there's a lot of options when setting up a co-op, from bare-bones to full-service, and some cost more than others. So that means the growers would have to be satisfied receiving 60 to 95 cents a pound for their tomatoes. If the idea is to set up a co-op solely

²⁴ E-mail interview with Eric Thurston, Creator of www.organictrader.net. March 26, 2001.

²⁵ E-mail interview with Chris Fullerton, Manager of the Tuscarora Organic Growers Cooperative, Hustontown, Pennsylvania. April 4, 2001.

to supply the University, and you could generate some pretty good volume, you could probably get away with a commission on the low end of that spectrum.”²⁵

We spoke to the People’s Food Coop here in Ann Arbor to find out if they had ever considered expanding their cooperative to include farmers’ concerns. The PFC deals with a number of area farmers already (found in Appendix Epsilon) and about 50% of their total produce sales are organic through the spring and fall. Jessica Stanton, a Manager at the PFC, reports that last year the PFC did \$483,485 in sales of produce for the entire year.²⁶ She writes, “Matt, our produce manager, will talk with the local growers in the winter and determine what that they are growing we will carry in the store and approximate amounts. Then they will draw up a contract and the farmer will supply those items to the co-op, and the co-op will give preference to those items (unless the local farmer can't meet the needed supply.)”²⁶ However when we discussed the possibilities of forming a farmer’s cooperative here, Jessica said that the PFC was not currently interested and probably would not be for a very long time. They are currently a commercial cooperative, and the process of becoming a farmers’ cooperative would require drastic changes in the structure of their organization.²⁷ According to Jessica the PFC does have some interest in opening up organic vending machines within the university system or perhaps a small lunch counter within the School of Natural Resources and Environment to sell sandwiches and beverages, but nothing more.¹⁵



Late in our investigations Eric Thurston suggested that we investigate Zingerman’s as another cooperative possibility because “They have major warehouse facilities (out beyond Briarwood), they already own a produce market, they certainly have ample funding, they already are on the *same block* with a farmers market where local farmers already bring their produce two times per week every week almost twelve months per year (what more perfect shipping arrangement could they ask for), and they like to innovate.”²⁴ Unfortunately our group did not have the opportunity to follow up on this possibility, but we believe that it merits further investigation.

In the end, our group believes that a farmers’ cooperative will have to be the product of the area farmers’ initiative, and that there is only a limited role that interested students or the university itself can play in setting one up. We believe that if the

²⁶ E-mail interview with Jessica Stanton, Manager of the People’s Food Cooperative. April 3, 2001

²⁷ Personal interview with Jessica Stanton, Manager of the People’s Food Cooperative. March 20, 2001

university is interested in buying organic produce and believes that a farmers' cooperative will best serve its needs, it can aid the process of developing a cooperative in three ways. The first is to demonstrate conclusively to area organic farmers that the university is serious about buying organic foods by making a public commitment to purchasing, within a matter of years, 2% of its foodstuffs from organic producers, if the supply exists, quality and other specifications are met, and a farmer's cooperative has developed to facilitate the university-farmer relationship. The second is to work actively with organic farmers in developing any new cooperative so that the finished product will best serve the needs of both parties. The third is to make work-study funding available for students to work with the cooperative and help to manage its operations, reducing costs and providing students with valuable, hands-on ecological and business experience. The farmer's cooperative at Oberlin College, the Oberlin Sustainable Agriculture Project, is currently in the process of developing work-study positions in its operations.¹⁶ (Page 13) We believe the University of Michigan can offer the same possibilities to its students.

Conclusion

A number of American colleges and universities, large and small, have initiated organic purchasing programs and worked through the many issues that surround organic food introductions. Their examples provide a living record that the University can use to guide any efforts it decides to undertake in the future. Certainly difficulties exist, but solutions do as well; the challenges of organic foods can be overcome, if the will exists to do so.

Part Four

The Finance of Organic Foods

One of the major obstacles to overcome in implementing an organic food program at the University of Michigan is the matter of cost. Organic food, with the exception of a few items, is approximately 8-15% more expensive than products grown in a conventional manner. By looking at every step Dining Services takes to acquire its produce and canned goods (which could potentially be switched to organic products), money-saving possibilities may arise. Each major step is summarized below, and conveys the complexity and magnitude of purchasing at Michigan. Recommendations and suggestions for funding organic food follow the general information.

Dining Services' Budget

Concerns about the costs of organic food are well-founded considering the current budget of Dining Services. 31% of their budget is dedicated to the purchasing of food, and as Bill Durell, Director of Dining services has stated, keeping within that budget currently is a challenge even without the higher costs of organic food.²⁰ Much of the remaining budget is directed towards supporting staff: full-time (37%), administration (17%), and student employees (8%).² Equipment maintenance (2%) and laundry/supplies (5%) round out the picture.²⁸ (This is represented graphically as Appendix Zeta.) There is a constant balancing act between providing enough food, and avoiding the preparation of too much food that ends up being wasted.

Although national purchasers like restaurant chains hold much more clout than the University of Michigan does, the market power of the University remains substantial, especially with smaller producers. It's difficult to say exactly what price our University would be quoted for organic products without the evidence of many competitive bids in the past; perhaps with firm, long-term commitments from this institution, the cost of organic food may not be out of our reach, or our budget.

The Food Procurement System

The University of Michigan currently has a very complex and widespread purchasing program set up through Food Procurement under M-Stores. The purchasing power of this entity is enormous. All food related items are purchased for the University's Catering Units, UMH Patient Food Service (hospital), as well as for the Dining Services in the dormitories. The costs of invoicing, ordering, storing, processing, and delivering these food items are included in the average marginal cost mark up of 7% assessed to the buyers. The M-Stores and Food Procurement departments handle all of

²⁸ Pie chart 1999-2000 dining services budget

the processes from testing and choosing between similar products, to the packaging and delivery of the products.²¹ (See Appendix Gamma)

The University is able to efficiently purchase and store a large amount of food through these departments. Large bulk deliveries that require separation are handled at the loading docks and broken down into sections of appropriate size and shipped to the various sectors where that product is needed. This centralized Procurement warehouse holds several advantages for the University. All goods come to one central location, simplifying deliveries and allowing for large purchases and long-term storage. All invoices and other paperwork required for receiving are handled just once, by M-Stores. Billing and quality controls are handled before the products actually reach their destination, simplifying administration and cutting down on time and expense. The destinations for food products on campus are usually not equipped to handle the large semi trucks that most of these products are transported on, so the Procurement warehouse becomes a necessary intermediary. And because purchasing is centrally managed, the cost of buying, delivering, invoicing can be monitored and reduced through the careful management of M-Stores and Food Procurement.

When dining services decides that it would like to purchase a particular type of item, it approaches M-Stores with their requirements, including the volume of the item, its form, and perhaps other requirements based on the scheduled menu. M-Stores staff then send out an offer to bid, with specific requirements, to numerous possible suppliers. The lowest “total cost” (including costs of shipping, reliability, and other indirect factors) bid wins if the quality control checks are passed. Food items are carefully critiqued by Dining Services on the basis of taste, color, nutrition, and how well they perform in recipes. If the product is ‘approved’ M-Stores awards the contract. The vendor then communicates with the M-Stores’ representative and sends the products. M-Stores divides, packages and ships the food to its final destination within the University by way of mid-sized University vehicles. M-Stores also handles the invoices from the vendors and pays the accounts. (See Appendix Gamma)

This summarized system of food purchasing and delivery applies generally to non-produce items; produce items are handled more directly by Dining Services with less involvement with M-Stores. The reason this relationship has developed is due to the limited shelf life of produce. According to the Process Flow for Customer Requirements chart, vendors of produce send their goods directly to Dining Services, UMH’s Patient Food Service, and Catering Units. The packaging and distribution normally undertaken by M-Stores is circumvented to offer direct distribution. (See Appendix Gamma)

One of the suggestions that our group encountered as a source of revenue for future organic purchases was to eliminate the M-Stores/Food Procurement bureaucracy. However our group believes that M-stores efficiently serves the university, and that this suggestion would not be a good source of revenue. For a unit such as Dining Services to use M-stores ultimately saves them time and money. Because M-Stores depends upon the budgets of other University departments to operate, efficiency is a must. They fund themselves entirely through the price mark-up they attach to every product they purchase

for the university. This cost pays for the salaries and work-hours required to acquire the items. M-Stores does not make a profit from these mark-ups, but rather charges a fee for overhead and administrative expenses only, a cost that would likely be more if each individual department were in charge of their own purchasing. Pressure from University departments (such as Dining Services) for M-Stores and Procurement to keep their prices down drives their efficiency efforts.²⁹

Possibilities for Financing

Composting in University cafeterias has reduced the cost of disposal for food wastes within Dining Services, by allowing non-greasy, uncooked food wastes to be placed in a container and picked up periodically. Sarah Archer, Recycling Coordinator for the University of Michigan Grounds & Waste Management Services, writes that, "We provide the kitchens with wheeled carts to put the vegetative prep waste into. When the carts are full, the dining services kitchen staff take the to the loading dock. Our department collects the full carts from the loading dock, emptying them into our truck and deliver the food waste to the City of Ann Arbor's Compost Facility. There the food waste is placed in a windrow dedicated to the UM food waste composting program where it becomes compost."³⁰ She says that, "The program has been in place since 1997 and started with 3 kitchens, Mary Markley, East Quad and South Quad. This fall West Quad joined in and at the beginning of March Betsy Barbour started. Since 1997 over 80 tons of food waste has been diverted from landfill or waste water treatment system."³⁰ Traditionally, these foods were disposed of through the drain, increasing water and electricity costs for the Dining Services; or trucked to the city landfill, which charges approximately \$25/ton in tipping fees.³¹ The net savings from these efforts has not been calculated. Further analysis is needed in this area so that this saved money could be used for innovative programs such as the introduction of organic foods.

Another program that may help to improve the efficiency and reduce costs to Dining Services is a waste reduction effort that would attempt to reduce individual customers' food wastes, decreasing the quantities of food that need to be purchased in the first place. Another group of students from this Environmental Studies 391 class is undertaking a study of this problem and is in the process of developing strategies to combat this problem. Their research has shown that approximately one million dollars is wasted through the many costs of uneaten food every year.³² The costs involved in preparing this uneaten food are broad, and include the cost of invoicing, bidding, storage, staff salaries, preparation, and finally disposal. Our group left a more in-depth study of this problem to our fellow students; however, we feel that reducing food wastes offer

²⁹ Personal interview with Sandy Barkman, Senior Buyer for M-Stores, University of Michigan. March 29, 2001.

³⁰ E-mail interview with Sarah Archer, Recycling Coordinator for the University of Michigan Grounds & Waste Management Services. April 10, 2001.

³¹ Personal interview with Sarah Archer, Recycling Coordinator for the University of Michigan Grounds & Waste Management Services. April 3, 2001

³² *Food Waste in University of Michigan Dining Halls*. (April, 2001). Rosenbaum, Abby; Stevenson, Megan; Gell, Katie; Ayer, Lizzie

tremendous money-saving potential that could then be harnessed, if the savings were properly measured, to purchase organic foods.

Leftover foods are currently thrown away, instead of being donated to worth causes. One of the suggestions that we encountered was for the Dining Services to put this food to good use by donating it to Food Gatherers, a local community organization. This would save the cost of disposal of these items. Our group did not investigate how much money could be saved by donating leftover foods.

Focusing on purchasing more items in bulk, such as cereal, would likely reduce costs through economies of scale. In addition to the financial savings, fewer resources would be required to package a few large containers of cereal, rather than 30 individual boxes. It is not infeasible to propose that bulk organic food may be cheaper than individually packaged name brands.³³

Although Food Procurement and M-Stores have already taken significant steps to conserve energy and become more efficient, there are likely more processes that could be ‘tightened’ up to save money. Any practice that improved efficiency would reduce the costs pinned on Dining Services and the other affiliated buyers in the University. A traditional green investment where a large initial cost gives way to future savings may not be possible for M-Stores to implement without outside funding from the University and/or increased markups to the University departments.

In this respect grants have helped with the introduction of organic food into schools across the country. These schools are often elementary and middle schools, and are sometimes assisted with their efforts by universities like our own. One of the grant programs, the United States Department of Agriculture’s Community Food Projects Competitive Grants Program, aims to solve problems like those which the University is dealing with right now. Some goals of this program are to support the development of community food projects that are designed to meet the food needs of low-income people, to increase the self-reliance of communities in providing for their own food needs, to promote comprehensive responses to local food, farm, and nutrition issues, and to increase a community’s food security. It may be possible for either the University of Michigan’s Dining Services or M-Stores to receive a grant such as this one. This particular grant offers no more than “\$100,000 in any single year, or more than \$250,000 over three years.”³⁴



³³ Personal Interview with Barbara Howe, Nutrition Specialist for Dining Services at the University of Michigan. March 8, 2001.

³⁴ Instructions and application available at <http://www.reeusda.gov/crgam/cfp/community.htm>

A myriad of other options are also available. The Michigan Department of Agriculture's Office of Agriculture Development (OAD) seeks a number of goals that coincide with an effort to implement organic food at the University of Michigan. Those goals include deviating from "conventional technologies and practices," in traditional agriculture and also to support and "promote local community-based development." In other words, they hope to promote and encourage the growth and development of small, local farms that are using alternative methods in their production (perhaps considered organic). The OAD has created a Michigan Organic Foods Advisory Committee whose main purpose is to "develop a statewide strategic plan for expanded production, processing and marketing of organic foods."³⁵ The committee itself is comprised of organic growers, organic processors/handlers, input suppliers to organic producers, retailers of organic food, and members of groups that support sustainable agriculture and the practice of organic farming. A mutually-beneficial relationship should be investigated between our University and the OAD. It's possible, given the tremendous advantages to our state's local economy of purchasing our foods here instead of from national distributors, that the Michigan Department of Agriculture, through the OAD, would offer the University a grant to explore organic purchasing.

It should be mentioned in this respect that there are dangers to relying on finite grant monies to fund an organic food program. Colleges across the country that have made this mistake have discovered that when the funding expires, so does their program. However, a grant that coincides with a real long-term commitment on the part of the university towards serving organic foods offers a high chance of success. Grants should be used to pay for whatever start-up costs are associated with organic foods, including staff training and changes in procedure, or the high initial costs of long-term money-saving ventures, but after grant funds are exhausted the university will have to find another source of funding to cover continuing costs.

It's not unreasonable to suggest that the University of Michigan request additional funding to implement an organic foods program from the Michigan State Legislature. The University receives hundreds of millions of dollars in funding from the state annually, and though there are many pressures of this source of funding, and the funding is subject to annual review, this may be a possibility warranting further investigation.

An option that colleges like Dartmouth and Bates have found works well is to convert traditional prepay board plans to more flexible a la carte systems.¹³ (Page 25) With traditional board plans like that which the University of Michigan offers, students prepay at the beginning of each semester or quarter, and the food service must keep its costs within the margins of these available funds. With the board plan, an institution has little means of passing on the costs for more expensive items to its students, except to make an internal adjustment such as serving a low-cost meal like spaghetti to make up for more expensive lobster or caviar.

³⁵ Michigan Department of Agriculture's Office of Agriculture Development homepage.
<http://www.mda.state.mi.us/resource/three%5Feighteen.htm>

“Our system, one that is predicated on all you can eat, works against using “high end foods.” Under a system where students pay for what they consume you can offer organic apples or broccoli at higher prices. This effectively gives the consumer the choice of whether or not the organic item is worth the extra cost, and it does not penalize the customer who doesn’t perceive any advantage to using organic. That model would be win/win for all concerned.”

—Steve Meyers, Executive Chef, University of Michigan Dining Halls

The a la carte method, however, allow students to self-select a particular item at a price and quality that is attractive and affordable to the student. With this format a university is obviously better able to pass on high-end item costs to its students, and more willing to offer them. Our group undertook no investigation of what would be involved in changing from the University’s traditional plan to an a la carte system, but we believe that this is something that warrants further investigation.

Along these lines it’s been suggested that the current board plan be slightly modified so that students attending a particular dining hall, such as East Quad’s, would be charged a higher board rate in exchange for higher-quality food. We believe this option should be further investigated, although the plan would disrupt the current system in which University of Michigan students are free to eat at whatever dining hall they choose, wherever they happen to be.

These potential sources of funding for the implementation of an organic food program should be considered closely and carefully. It’s awfully tempting to re-insert the savings from these or other programs back into the general budget, but the potential to use the surplus money towards higher goals concerning sustainability is an exciting idea that should not be overlooked.

Conclusion

As one can see, the challenges to implementing organic food are very complex from the financial perspective. Dining Services and M-Stores should become more flexible in their interactions with each other, and be willing to change in order to realize the possibilities of organic food at the University of Michigan. Through modifications in the practices of each, surplus funds could be made available, and could be redirected back into an organic program. This aspect requires strict, accurate bookkeeping. Finally, grants and other awards may be available to help initiate these goals.

Part Five

The Receptiveness of Students and Staff to Organic Foods

Any plan to introduce organic foods into residence hall cafeterias will have to consider student and staff receptiveness to these changes. Students are the “end users” of Dining Service’s product; ultimately their willingness to consume organic foods will determine the success of an organic program. Cafeteria staff prepare the food, and may be unwilling to accept changes in routine that has become convenient and understood. Many myths exist about organic products and in order for students to consume them and staff members to embrace them, both groups will have to be educated about the real facts surrounding organic foods.

Part One of this report discussed many of the social, ethical, ecological and health issues surrounding organic foods. As a part of any future organic program this information should be made available to the greater University community. However due to the rapid turnover of students within the residence halls, any education program will have to be ongoing.

Current Student/Staff Receptiveness

Figure 1x: Do You Prefer Organic Or Commercial Foods?

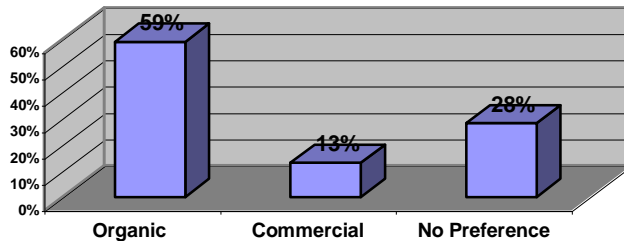
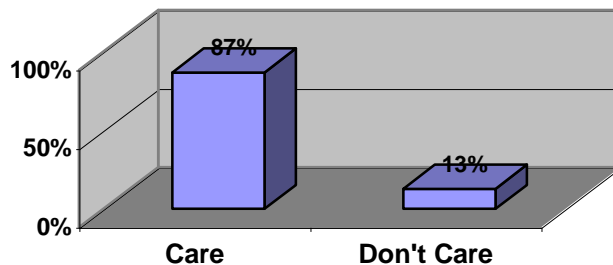


Figure 2x: Do You Care About the Environmental Impacts of Agriculture?



Our group did not undertake a survey of the student body to determine how receptive students would be to organic foods. However a previous survey undertaken in the fall of 2000 by a group of students for their Environmental Studies 240 class, Big Questions for A Small Planet, examined the opinions of approximately 350 students from three residence halls: East Quad, West Quad, and South Quad.³⁶

³⁶ *Organic Food Offerings in Hall Dining Services* (April, 2000). Cecil, Lauren; Gagnier, Melissa; Gell, Katie; Haubenreich, Lindsey; Kaplan, Lauren; Mendez, Chayo.

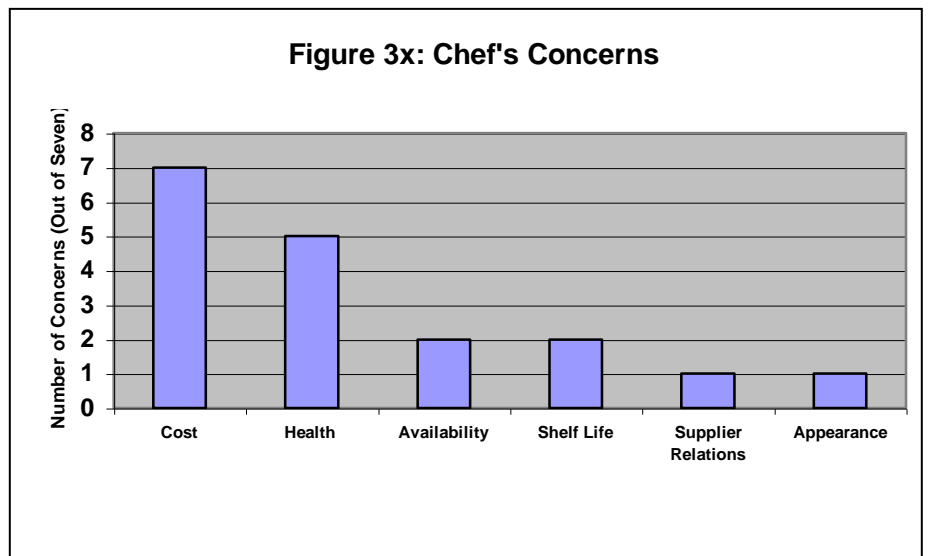
Their self-survey found a high receptiveness by students to organics; 59% of respondents said that they would want organic products offered by dining services (Figure 1x).³⁶ Of the remainder, 13% preferred only commercial and 28% had no preference.³⁶ In an indication of greater student awareness surrounding the problems of conventional agriculture, 87% of students surveyed said that they were concerned about agriculture’s environmental impacts (Figure 2x).³⁶ 79% of students surveyed said that they knew what organic foods were, however this may not be strictly accurate because a definition was printed on the survey directly beneath the question.³⁶ The open comment section of this survey in fact revealed a great ignorance about the reality of organic foods; many people made the assumption that organic food tastes bad, and that eating organic food means giving up meat.³⁶ Further education appears to be necessary to help eliminate these stereotypes.

Our group did survey the receptiveness of dining hall chefs to the introduction of organic foods. (Shown as Figure 3x.) We received seven responses (these respondents had jurisdiction over all the major residence halls with the exception of Martha Cook and Betsy Barber) and the general themes were very clear. (Our questions and the chefs’ verbatim replies are available in Appendix Eta). Everyone was in favor of products that are healthier and better for the environment.

“I would favor the introduction of organically grown food into the dining service system. But, and this is a big but, there are numerous concerns that I have that would need to be addressed.”

—Klaus Huser, Chef for Mosher/Stockwell Dining Halls

Many of the chefs expressed interest in the process of introducing organic foods. However several of them mentioned concerns about sanitary requirements for the growth of organic foods. One chef wanted a viable HACCP (Hazard Analysis of Critical Control Point) analysis done to ensure proper safety. The main concern (expressed in each response) was cost.



“The first concern in regard to menu planning of course is going to be the cost”

—Martin Folk, Chef for Markley Dining Halls

The chefs do not believe that affordable organic food is available. Dining services is on a very tight budget and several of the respondents communicated an inability to pay additional costs for food.

However, the survey results also demonstrated an excitement around the idea of finding organic food that was cost effective (similarly priced to the current foods). If this type of food was available, the chefs seem willing to make possible changes in their cooking style and recipes to accommodate organic produce.

Current Education Efforts

Over the past four years, a Sustainable Food Day at the University of Michigan has raised awareness about vegetarian, vegan and organic food options. Traditionally held during the University's Earth Week, the dining halls serve earth-friendly food and display tri-folded table tents on cafeteria tables and other literature explaining organic food options. However in the past problems have arisen due to lack of education on the part of dining service staff; "vegan" entrees (which are supposed to avoid all animal products) were served covered in cheese.³⁶ Martin Folk, the Chef of Markley Dining Hall writes, "We served organic chicken but put it in taco meat and salad where the chicken was the only item organic."³⁷ These problems on the part of dining services staff would seem to indicate a need for better planning and more education about organic food options.

The following organic foods were made available for the 2001 Sustainable Food Day:³³

- free-range chicken (quesadillas and baked)
- free-range eggs
- organic brown rice
- organic long-grain rice
- organic pineapple
- organic pasta
- organic tofu
- organic yogurt
- non-genetically-modified potatoes
- non-genetically-modified corn
- two vegetables options at salad bars were organic

Other College Education Efforts

Every college with an organic program that we investigated used dining hall postings to make their students aware of which foods were organic and which were not. All of these institutions made basic information about organic products available to their

³⁷ E-mail interview with Martin Folk, Chef of Markley Dining Hall at the University of Michigan. April 5 2001

students, as well. The University of Wisconsin at Madison has hosted “Home Grown Wisconsin” organic meals since 1997 in all of its dining halls.³⁸ Bates College of Maine also hosts an annual all-organic meal around which it educates the students about organic food options.³⁹ Requests for an “all-Iowa meal” on the part of international visitors seeking a local food experience were the catalyst for organic initiatives at the Iowa State University Memorial Union.¹³ (Page 22) These programs provide valuable opportunities to educate students about organic foods, and colleges that we surveyed were quick to take advantage of these opportunities.

Possible Education Efforts

There are a number of possible educational efforts that the University could make use of to ensure that any introduction of organic foods into dining services is a success. Education of students would help to eliminate misconceptions about organic foods and therefore increase consumption; education of the staff would also help to eliminate their misconceptions and make them better prepared to answer the questions that the students would inevitably have about the food they’re eating.



Permanent tri-fold table tents that could sit on the cafeteria tables within the residence halls are one option. Often, students find themselves without anything to do while eating, so they read and re-read whatever is in front of them. It’s likely that the tents would be read by many of the dining hall students. This avenue would therefore be an effective blanket option of reaching numerous dining service customers and informing them about organic foods; it could also be done at relatively little cost. A sample list of bullet points that could be included on cafeteria table tents are included in Appendix Theta.

Another option is to create a simple fact sheet comparing the benefits of organic foods versus conventional foods and make this available to interested students. It could also be posted in prominent locations around dining halls, or simply near organic food options available that day. This may be less effective than table tents but it would be as inexpensive, and any effective educational program should integrate a number of options to reach the maximum number of students possible. A sample fact sheet along these lines

³⁸ Telephone interview with Matthew Goldfarb, Specialist at the Center for Integrated Agricultural Studies College Food Project. April 19, 2001

³⁹ Bates College Dining Services Homepage. www.bates.edu/dining/environment/renewamerica.html. Viewed March 22, 2001.

is available as Appendix Iota. Of course for some students, this fact sheet will be inadequate to satisfy their curiosity about organic foods. Dining services may want to make sources of further information about the issue, perhaps on the world wide web, available to its customers.

Regular articles about organic food options could be featured in the dining services newsletter, *Rez Sez*. Since the newsletter is already produced and distributed to students on a regular basis, an organic feature would cost nothing; it's effectiveness would likely be low, however, as few of the students that we spoke to informally said that they read the publication.

Informational sessions held throughout the year by qualified staff may provide interested students the opportunity to ask questions and have their concerns addressed. Already similar programs are used to educate students about the nutritional content of their food. These programs could possibly be very effective, educationally-speaking, because of their interactive nature. Their effectiveness would, however, be dependant on how widely they were advertised. In addition they are bound to be more expensive than either table-tents or flyers; a staff person must be available to students and their time is valuable.

The University of Michigan's Sustainable Food Day would be a more effective educational tool if it were more widely advertised before the event and entrees were prepared more effectively. Continuing this program even after the introduction of organic foods would be a wise option. Higher-quality organic options could be made available or existing organic options already in place within the residence hall dining system could be made more visible. This program's effectiveness would depend on how many people were exposed to the organic options available and the quality of the event's educational literature. Its cost would depend on how many higher-grade organic options were included as a part of the event. If existing organic options were publicized, this program's cost would be minimal. In general—whenever the organic options that are offered—students should be made aware of them.

Educational options for dining services staff should be developed and implemented as well in connection with any organic foods introduction. A knowledgeable and enthusiastic staff is an important component of any successful organic foods program. An educational segment on organic foods should be included in any training sessions that already occur for staff so that they would have an opportunity to raise concerns and have their questions answered. Additional materials should be provided to give the staff an in-depth knowledge of the university's organic foods program. The cost of this may be more than that of any of the other organic education options mentioned simply because of the staff and training time invested in the effort. However in the case of dining services staff effective education about organic foods would be critical, and a more effective program than a face-to-face dialogue may be hard to develop.

And finally a crucial element of any educational program would be collecting feedback. This ensures that whatever programs that exist could be refined and made more effective, and would give Dining Services a better idea of how to reach the student body.

Conclusion

Student and staff receptiveness to organic foods will be a critical factor in planning any organic foods introduction. Our group has found that a cautious optimism exists on the part of both students and staff regarding the possibilities that organic foods have to offer. This optimism should be built on as a part of any organic foods introduction. Effective and inexpensive options exist to both make organic foods within the dining halls more visible and to encourage student consumption of these foods. These education efforts should be enacted and used continuously if the University decides to pursue organic foods.

Conclusion

In the course of this report, our group has shown the many ecological, health, moral and social advantages that organic foods have to offer over conventional food products. We've demonstrated that many organic products can be purchased close to, even at and below, the current price that the University of Michigan currently pays for its products. We've offered the examples of other colleges and universities all around the country that have undertaken their own organic programs, and overcome the challenges that organic products present. Many of their solutions can be applied here, at the University of Michigan. Our group has demonstrated that viable funding opportunities exist to cover any additional costs that organic foods require, and that educational programs to foster organic introductions can be organized cheaply and effectively. Indeed, it seems to our group that little reason exists for the University to continue to avoid organic products in its residence hall cafeterias.

Recommendations

As a result of our investigations our group proposes the following actions that we recommend the University undertake to continue along the path toward a more organic future.

1. Develop a task force including the Director of Dining Services, Bill Durell, faculty and students, and representatives from M-Stores and Sustain UM to continue to evaluate organic options and to investigate funding sources.
2. Organize one-on-one conversations between the University of Michigan's Director of Dining Services, Bill Durell, and the Dining Service Directors at the University of Wisconsin at Madison or Bates College.
3. Set up an organic purchasing policy that would commit the University of Michigan to buying organic products whenever they are cheaper than their conventional alternatives.
4. Set a 2% organic purchasing goal to guarantee that the University of Michigan would buy organic products if they are available, meet food testing requirements, and are within 10% of the current price for the same conventional product.
5. Use the market power of the University to encourage currently contracted distributors to offer organic products, and to do so at reduced prices for the University.
6. Work in collaboration with local farmers and offer assistance in creating a local farmers' cooperative.
7. Begin a pilot program in a residence hall such as East Quad that would gradually offer expanded organic options as a part of the regular menu.
8. Educate the University community about organic foods by making information readily available and hosting informational sessions for students and staff.

These actions can and should be undertaken by the University of Michigan.

Our group firmly believes that more investigation is needed regarding the possibilities that organic foods have to offer the University community, and we propose that all interested parties, including those listed above, be made a part of this process. This must be the first step of any effort to introduce organic products into the University dining halls: a workable plan will have to be developed, agreed upon, and implemented. We believe that this task force should begin its investigations as soon as students return in the fall of 2001.

Both the University of Wisconsin at Madison and Bates College in Maine have valuable experience to offer any organic effort. UW Madison is one of the few comparably-sized institutions to be experimenting with organic foods in its residence halls, and Bates is arguably the home of the most advanced and successful organic program of any college or university in the country. We believe that conversations like those we recommend could only profit the University of Michigan by providing staffpersons here an interactive opportunity to ask questions and find out how organic programs have succeeded elsewhere.

We believe that an organic purchasing policy to buy less expensive organic items is an easy decision, but an important one. It would not only assure the University of cheaper products and increase the numbers of organic products that are offered by Dining Services but help to stimulate the organic markets by contracting with organic suppliers that might otherwise be ignored.

We believe that a solid commitment on the part of the University is the most important step that it can take to fulfill the wishes of its students for organic foods and the greater responsibility that it has to the health and well-being of our natural environment. The 2% goal that we recommend is a significant commitment, but we think that this is easily achievable if phased in over a number of years. This would give the markets time to develop and assure farmers that might otherwise shy away from planting another organic field or switching to organic practices that if they do, they'll have a market ready for them. The University is free to qualify this commitment with stipulations just like it enforces on all of its suppliers; we simply ask that preference be given to organic suppliers just as is currently the case with minority-owned suppliers. We believe that a 10% additional cost is not too much to ask given the vast resources of the University of Michigan; although we are aware of the financial constraints under which dining services must operate we believe that our funding suggestions are only the beginning of the possibilities that exist and can be developed once the commitment is there.

As we discussed previously in this report the University has tremendous market power with those it contracts with; this market power should be used to encourage the sale of organic products by current University vendors. Certainly, the University has no absolute say with its contracted suppliers, but it has influence, and that influence can and should be used to make organic options more available and affordable to the University of Michigan.

Farmers cooperatives can serve as an invaluable link between institutions and small area farmers, by overcoming the financial, administrative, and communicative barriers that divide them. Offering assistance and support to any organic farmers that want to form a cooperative here in the Southeast Michigan area could have profound impacts for the future of organic commerce here and its attractiveness to institutional settings such as our own. If these efforts are undertaken in connection with the 2% purchasing goal that we recommend, farmers would have an even greater incentive to organize themselves so that they could supply the University efficiently and cost effectively.

Our group believes that organic products should be introduced slowly, so that Dining Services will have the opportunity to adjust the program and develop improvements before launching a broader effort. Starting small would also give the Dining Services a chance to measure student and staff receptiveness to the new programs, so that they could be better tailored to student and staff needs in the future.

Education is an essential component of any organic program; furthermore, it's the responsibility of this university. We recommend that education efforts be designed and implemented in anticipation of and during any organic foods program, and continued on a regular basis. Education will have to be a continuing effort due to the rapid turnover of students within the University of Michigan residence halls.

Conclusion

Our group has examined many of the advantages that organic foods have to offer the University of Michigan community, but an organic foods introduction offers advantages to the University, as well. As yet comparatively few colleges and universities have undertaken organic programs, despite the evident possibilities that exist. The University of Michigan can be a national leader by committing to organic foods now, while the time is ripe. This could only serve to garner the University publicity and enhance its prestige as one of the foremost institutions of higher education in the world. There's no doubt that the University can make a tremendous advance on behalf of the organic industry, ecological balance, and the future of our planet. In the face of these golden opportunities, the question shouldn't be why we should introduce organic products, but why shouldn't we?



Organic Resources

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Appendix α Alpha

The Organic Efforts of Other American Colleges

Carleton College, Minnesota¹

Carleton purchases some local organic apples in the fall, when they're in season. Between 1989 and 1991, Carleton and the College of St. Olaf collaborated on "The Campus and the Biosphere Initiative," a project which investigated, and for a short time financed, a local foods project with energy savings.

Evergreen State College, Washington¹

A few local purchases are made of coffee, bread, dairy, and some packaged goods. Evergreen also operates its own organic farm which was until recently a principal supplier of a student-run restaurant on campus. After management problems arose and the students were replaced as managers by the college, the fate of the partnership with the farm was left in doubt. The farm has some internal sales to campus faculty and staff, but it's too small to address all the needs of the college's food service.

Grinnell College, Iowa¹

Grinnell has looked at the local/organic food issue off and on for several years. The current food service director participated not long ago in a "local food system project" conference sponsored by the Leopold Center for Sustainable Agriculture. The conference helped to foster a commitment to building an infrastructure that will sustain marketing relationships with local and regional producers. Several ideas are under consideration including the development of a web-based marketing vehicle that the college or its primary vendor can access for one-stop shopping of local and regional organic products.

Oberlin College, Ohio¹

Oberlin looks at the local and regional food issue from time to time with the impetus coming from student environmental groups. The food service is developing an "all-Ohio meal" event, and hopes to use organic and sustainable foods.

Potomac State College, West Virginia¹

Potomac has a contract with Daka Restaurants to supply their food service needs, and Daka contracts with the Lightstone Foundation, situated on a 530 acre organic farm in Northern West Virginia. In this connection the College and the Lightstone Foundation were brought together to initiate a local foods venture. The Lightstone Foundation has started to create a community model unique to West Virginia's setting that links local farmers with grocery stores, nursing homes, the College and groups of restaurants. 1998

¹ *Something to Cheer About: National Trends and Prospects for Sustainable Agriculture Products in Food Service Operations of Colleges and Universities.* (1998). Johnson, Douglas; Stevenson, George; Hendrickson, John.

was the first year of the initiative and only a few farmers were expected to participate, but most of the farmers in the area are organic because the local farm economy cannot support purchased inputs.

College of St. Olaf, Minnesota¹

Some local apples are purchased in the fall, and some organic produce is bought locally in the summer. Between 1989 and 1991, Carleton and the College of St. Olaf collaborated on “The Campus and the Biosphere Initiative,” a project which investigated, and for a short time financed, a local foods project with energy savings.

Tufts University, Massachusetts¹

Tufts’ Environmental Food Awareness Project succeeded in replacing Washington state apples with local and regional apples that are trucked less miles and that are more often organic. The college purchases some local organic produce in season, and organic products like Stonyfield yogurts are sold at Tufts, but sales are reportedly stronger in convenience stores than in the cafeterias. Tufts is also the site for a new local produce brokerage, Red Tomato, which as of 1998 was in the business plan development and start-up phase. The brokerage is committing its operations to providing a fair price to local, often organic, farmers by cutting out the middleman. As a brokerage, Red Tomato will not take possession of the products it vends but will foster the sale and delivery of the items. While Red Tomato is placing a priority on sales of local production, it intends to be a year-round supplier by securing food products from non-local sources when local sources are unavailable. Red Tomato is not limiting its operations to organic products, but intends to supply these items when demand and supply can be effectively matched. The Red Tomato intends to be price competitive with national competitors, opening up opportunities for Tufts University to reliably contract with local organic farms.

University of Minnesota Earle Brown Conference Center¹

In the spring of 1997 casual conversations led the leadership of the Earle Brown Center to engage in new direct buying relationships with the area organic producers. However in January, 1998, the fledgling program was cut short when the University of Minnesota signed a contract with Aramark Corporation and key staff were reassigned.

Bates College, Maine¹

The College began its local foods initiative in 1994 and quickly expanded purchases of local food products to about 30-40% of total purchases, of which 100% are organic. The local foods initiative at Bates evolved from the college’s waste minimization, recycling, and composting efforts, and a desire to better integrate the college with the community ecology. The college food service was recognized as a source of locally-compostable materials which could support local growing of food for local consumption. The involvement of an enthusiastic and supportive chef has resulted in creative uses of organic foods and a rapid expansion of the Bates program.

The Bates program is mature enough that local farmers consult with the Chef and Food Service Director on pre-planting decisions and the logistics of handling, storage and delivery of bulk quantities of potatoes and other crops throughout the school year.

Farmers have developed the infrastructure to simplify transaction costs including one-call shopping, coordinated deliveries and invoicing. Supplying Bates College with local potatoes has also helped farmers develop the infrastructure to serve other local markets. The college continues to purchase organic produce during the winter months, obtaining their supplies from warmer climates with longer growing seasons. The food service staff are very pleased with the quality of the organic produce and are currently exploring the potential for organic value-added products like French fries and tomato sauces.

Northland College¹

Northland secures 15-20% of its food locally during the school year, of which 100% are organic. Northland operates with a producer cooperative, and buys grocery items from a grocery cooperative.

Hendrix College, Arkansas¹

Hendrix began its local food system initiative in 1989 with the help of a Rockefeller Grant from Winrock International. Within a three year period, Hendrix's purchases of local foods increased from 2% to over 30%. Much of these foods were organic, but after the grant funds were exhausted and a key champion left the college, the local initiative diminished in significance, and organic foods are no longer purchased.

University of Wisconsin at Madison^{2,3}

Led by the research efforts of the Center for Integrated Agricultural Systems, affiliated with the university through the College of Agricultural and Life Sciences, UW Madison has hosted annual "Home Grown Wisconsin" organic meals since 1997. To save money and time, the UW Food Service Department tends to purchase organic foods that require minimal preparation. The University of Wisconsin has currently committed to buying all of its baking potatoes and apples from local, more organic and sustainable sources, according to Matthew Goldfarb, a graduate student researcher at the Center for Integrated Agricultural Studies College Food Project. They are currently looking for a source to supply them potatoes that are washed and prepared so that they can be pricked and baked like normally-purchased potatoes. Janet Parker, a fellow researcher for the Food Project, notes that, "UW-Madison decided to feature local, organic meals in single dining halls rather than offer such meals in all four halls simultaneously. This shows that all sizes of schools can tailor their local food buying efforts to the availability of local food, labor for processing, and budget." UW Madison relies on local farmers as well as cooperatives including Homegrown Wisconsin, a vegetable cooperative, and Wisconsin Pasturelands, a meat cooperative. Their board plan allows the university to pass on costs for more expensive foods directly to the students, through higher sticker prices.

² *Research Brief #55*. January, 2001. Center for Integrated Agricultural Systems, University of Wisconsin at Madison College of Agricultural and Life Sciences.

³ Telephone interview with Matthew Goldfarb, Researcher for the Center for Integrated Agricultural Studies College Food Project. April 18, 2001.

Iowa State University Memorial Union^{1,4}

The ISU Memorial Union began purchasing local and organic food in 1997, at the behest of international visitors wanting an “Iowa food experience.” Their efforts were fostered by the brokering efforts of the Practical Farmers of Iowa (PFI), which allowed the college to use one contact for placing its organic orders. PFI met several times with organic vegetable growers and helped identify when fruits and vegetables would be available and what farmers expected to be paid for their products. Using this information PFI then developed a seasonal menu and set single prices for the products that applied to all participating farmers. Working with ISU staff and the data that they supplied, PFI estimated how much of the various foods ISU could anticipate using to help area farmers balance supply with demand. And PFI worked with ISU staff on procedures that included a “heads-up” call so that they had ample time to fill the orders, an email ordering system to facilitate purchasing, direct deliveries and billings by the farmers, and direct payments to the farmers by ISU. This system has helped to increase the number of organic events from six in 1998 to thirty-seven in 1999, with the total number of people served growing from 360 to 6,690. Forty-three farmers were used and nine processors to supply the 1999 meals. The processors were small area businesses like meat lockers and cheese manufacturers. Farmers and processors were paid a total of \$13,655. After the 1999 season the PFI system was reevaluated and adjustments were made for 2000. The primary of these was a fee system that helped pay for the brokering service. The system had three income sources—the farmers, the Center, and the catering clients. PFI asked farmers to pay a \$10 annual supply network fee, and to remit 5% of total sales made through PFI at the end of the year. From the college a \$100 annual fee was requested, and sixty cents were added to the cost of each client’s meal. An explanation for the extra cost to the clients was made at the bottom of the menu. As a result of these changes PFI had a growers’ network of 23 farmers during the 2000 season, which carried 16 varieties of fruits and vegetables, pork, beef, and chicken, eggs, goat cheese, and tofu. In 2000 54 local, organic meals were served, reaching some 5,638 diners. \$14,829 was paid to area farmers. The program continues to innovate and seek new ways of increasing its supply.

⁴ *Food Systems Program Report*. Winter, 2001. Huber, Gary. Available at www.pfi.iastate.edu/Newsletter/FTF%20Report%2015_4.htm

Appendix β Beta

Quick Facts on Three Organic Programs

	Bates College	Northland College	ISU Memorial Union
Food service management	College	Contract	Memorial Union
Annual food budget	\$1.6 million	\$350,000	\$1.3 million
Percentage local (approx.)	30-40%	15-20%	20% projected
Percentage local that's organic	100%	100%	No data yet
Price differential	0-20%	50-300%	No data yet
Buying from			
Direct buy from # of farmers	6+	2 cooperatives	2-4 current
Autonomy to buy organic	High	Medium	High
Distributor carries organic	Yes	No	Yes
Buys from a local cooperative	Yes	Yes	No
Organic buying for how long	4 years (1994)	2.5 years (1995)	Under development
Buying what			
Organic fruits and vegetables	Yes	Yes	Projected yes
Free-range meats and poultry	No	No	No data yet
Serving who and where			
Student enrollment	1,650	800	500,000
Dining venues: BP=board plan; BA=ala carte	2 BP, 1 cash	1 BP, 1 cash	100% catering; multiple sites across campus
Cost recovery basis			
Board plan customers	20,100/week	525	300,000 annually
Ala carte customers	0		0
Cash-basis customers	2,000/week	2-300 daily	0
Catering contract	Low-varies	Low-varies	100%
Handling high-cost items			
In board-plan venues	Internal adjusted	Internal adjusted	Not applicable
In cash operations	Passed on ala carte selection	Passed on ala carte selection	Menu choice on contract

Source of idea/initiative	Campus Environmental Issues Committee; staff, students, faculty & director of dining	4 students for one paper, I worked in food service	International visitors and the Leopold Center
Why buying organic	College social beliefs and mission; college recognizes needs of local community and farmers; quality is usually better	Initially to save money and the environment by cutting transit costs; now all local is organic because it is the best quality available and students are willing to pay.	Leopold Center facilitated discussions; local-focus builds and enhances Union and chef reputation; market is interested.
Currently purchasing on a regular or seasonal basis.	Potatoes	Potatoes	Potatoes
	Carrots	Carrots	Onions
	Apples	Apples	
	Raspberries	(no berries)	Raspberries
	Blueberries		Strawberries
	Broccoli		Tomatoes
	Cauliflower		Maytag cheese
	Tomatoes	Applesauce	Amana meats
	Cucumbers	Squash	Asparagus
	Mesclun mix	(no greens)	Morel mushroom
	Herbs-various		Zucchini
	Grains	Grains	
	Dry beans	Dry beans	
	Pasta	Pasta	
Looking for local supply	Value-added products	Eggs, dairy, bakery	Creamery butter, inspected meat

Appendix δ Delta

University Insurance Requirements for Food Service Vendors

Vendor shall carry **worker's compensation, employer's liability insurance and any other insurance required by any employee benefit acts or other statutes applicable where work is to be performed. All such insurance shall be to the statutory limits** and sufficient to cover the contractor from any liability for bodily injury, sickness, or disease (including death resulting at any time therefrom) of any of their employees including any liability or damage which may arise by virtue of any statute or law in force or which may be enacted hereafter. **Vendor agrees to maintain comprehensive commercial general liability insurance, including contractual liability, with limits not less than \$2 million per occurrence and \$3 million aggregate;** environmental liability insurance (as applicable) with minimum limits of \$1 million per occurrence and \$2 million aggregate; **automobile liability for owned, non-owned and hired vehicles (including MS-90) with a combined single limit not less than \$2 million per occurrence and \$5 million annual aggregate and in compliance with the State of Michigan with regard to the MS-90; Employers Liability with a minimum limit of \$500,000; Employee Dishonesty insurance with a minimum limit of \$1 million and crime insurance with limits not less than \$100,000.00;** and Environmental Impairment liability insurance with limits not less than \$2 million per occurrence and \$5 million aggregate. Vendor agrees to have the Regents of the University of Michigan added as additional insureds with respect to comprehensive general liability insurance. Vendor shall provide the University with a certificate of the above insurance coverages and amounts upon execution of this agreement. All insurance policies will be issued by companies authorized to do business under the laws of the State of Michigan. Such policies will contain appropriate endorsements extending the coverage thereof to include the liability assumed by the contractor under the contract. No changes to coverages will be made without thirty (30) days prior written notice to the University. Nor shall the contractor make any change or cancellation in insurance without the University's prior written consent. Compliance with the foregoing requirements as to carrying insurance and furnishing certificates will not relieve the contractor of his liabilities and obligations under this section.

Appendix ε Epsilon

PFC Local Grower's Contract 2001

Appleshram

Apples
Peaches

Bluebird Farm

(all late spring, greenhouse grown, season ends in August)

Red Peppers
Zucchini
Cucumbers
Tomatoes

Box Elder Acres

Arugula
Basil
Cilantro
Dandelion Greens
Dill
Lettuce (after 9/15)
Mustard Greens
Green Onions
Flat Parsley
Pepper Medley

Community Farm

Daikon Radishes (fall)
Chinese Cabbage (fall)
Snow Peas (availability determined by surplus)
Snap Peas (availability determined by surplus)
Summer Squash
Tomatoes

Gardenworks

Basil
Beets
Cauliflower
Cilantro (secondary)
Collard Greens (secondary)
Endive
Escarole
Fennel

Garlic
Lacinato Kale
Red Russian Kale
Green Kale (secondary)
Leeks
Lettuce (ending 9/15)
Mustard Greens (secondary)
Pumpkins
Raddichio
Radishes (secondary source for Daikon)
Mesclun mix (fall)
Spinach (spring and fall)
Swiss Chard (secondary)
Turnips
Tomatoes (Cherry, Roma)
Eggplants
Green Onions (spring)
Rosemary
Sage
Oregano
Broccoli
Cucumbers
Mitzuna

Green Acres

Rhubarb
Shiitake Mushrooms
Tomatillos

Kestrel Farm

Collard Greens
Greens Kale
Red Winterbore Kale
Curley Parsley
Red Swiss Chard
Green Swiss Chard
Bright Lights Swiss Chard
Cooking Onions

Orlando Farm

Green Beans
Raspberries

Steinhauser Farms

Corn

Melons (secondary)
Green Beans (secondary)
Seedling (tomatoes, peppers)
Mesclun mix (spring)

Tantre Farm

Brussels Sprouts
Garlic (secondary)
Potatoes
Winter Squash
Pie Pumpkins
Melons

Appendix η Eta

Chefs' Responses

The Survey

- Name:
- Residence Hall:
(Organic foods are foods that are grown without chemical or synthetic fertilizers or pesticides, that are not irradiated, and are not genetically modified in any way.)
- Would you generally favor the introduction of these foods into your dining systems or not? Please explain:
- What are your concerns about the introduction of organic produce, in terms of menu planning, healthfulness, process, etc.?:

The Responses

In response to your questions:

Generally I would be in favor of the idea of organic foods being introduced in the Dining Service System. The idea that we could serve foods that are completely natural and most likely healthier for us is always a goal of mine personally and of Residential Culinary Services. However I find that the reality of organic products plays a stronger part. On an average the cost of an organic product is at least 100% or double the cost of what the product would cost in non-organic form. I firmly believe that as the introduction of organic products into our menu may be healthier, but it is not at all feasible to add for cost limitations.

In regards to the introduction of organic products on our menu I have a few concerns. The first concern in regard to menu planning of course is going to be the cost as earlier mentioned. Now most of our students will immediately point out the fact that they pay \$7 – 8 dollars for their meal. But they do not realize that only about 2 of those dollars actually pay for the food, while the rest goes to pay operational expenses involved in a business. One example would be for organic broccoli where we pay almost .45 cents per portion. That means that almost 25% of the actual food dollars that we have is going to pay for one vegetable and we still have at least 3 other entrees, 2 soups, 1 starch, 1 other vegetable, veggie bar and of course dessert. The first response goes back to, “But we pay so much.” Yes you do but when you go to McDonald’s or even Seva you may pay \$5.00 for your lunch, but only 1.5 or so of that is the actual cost of the food you eat.

In terms of healthfulness, I do believe that most organic foods are more healthy and better for you. In terms of GMO foods I believe that some of the products warrant further unbiased information. However, the fact remains that just because it is more natural does not instantly make everything better. After all, Polio is natural; the cure was not. I do believe that there are some positives to modern farming and I would hope that there

would be some positives come from genetically modified foods. We do currently get higher yields out of our crops thus making food more affordable, thus giving people the opportunity to eat and not starve based on class or cost. Irradiating food is done to reduce the contamination of foods and may end up to be a way to reduce food related illnesses. Is it a bad thing to use modern science to try to find ways to prevent hunger or illness?

In regards to the process of organic food in dining services I think that the Residential Culinary Services Team has tried to serve these items for the “Sustainable Food Day” but I personally found the attempt rather futile. To appease this group on this day we served organic chicken but put it in taco meat and salad where the chicken was the only item organic and will end up being seasoned and mixed with so many other ingredients that it will not be a noticeable difference. This versus roasting a cut organic chicken that is lightly seasoned so students can taste the noticeable difference that really does exist. But we cannot do this due to the cost. Now the use of the plain steamed vegetable is OK but an organic apple, I found that the majority of students found them slightly irregular and were not as “pretty” as the others, thus eating with the eyes as most of our students do.

I would also like to note that I find the propaganda material that was brought for “Sustainable Food Day” very one sided and very insulting. I was told this was to be an educational week to attempt to inform people of these products. However we have allowed the group to post signs that make our food appear like garbage every other day of the week. They attack our vendors from whom we often ask for special materials. This group attempts to enforce the belief that vegetarianism and veganism is the best and only way to live. I think that the process should be more open-minded using material that may actually inform instead of attack. I also wonder if the same response would be given to a group of carnivores as we constantly have students requesting steak and dollar for dollar we really cannot afford either steak or organic foods.

In closing I would like to say that ... since becoming a chef at the University I have learned a great deal about different foods and cultures and hope that we do not rush to judgment on the use of science in foods to attempt to eliminate some of the world's problems.

Thank you.

—Martin Folk, Chef for Markley Dining Hall

I would favor the introduction of organically grown food into the dining service system. But, and this is a big but, there are numerous concerns I have that would need to be addressed before the production people got their hands on the food.

First, cost. This, of course is a big factor, but it should not be THE factor that would determine the future of organic foods in dining service. Cost would also be a factor in that employees would, most probably, have to do more work on the various products since organic farms are, comparatively, small operations. Another cost factor would be the seasonal availability of foods. Even though food is produced year around, organic

foods are primarily limited to 'fast' growing area such as southern California, Texas and Florida. In those cases would transportation add a considerable amount to the cost? Since organically grown food is more perishable than food grown with chemical fertilizers I would expect a shorter shelf life. This is detrimental in a seven day food service operation. The proper storage, after having been picked, during transportation and when arriving at the end-user would also increase cost. I also believe that organic foods require different packaging that would probably add to cost. Organic foods, in many cases, are whole, in that they have their stalk and root systems still attached. (This also requires additional work to remove and additional cleaning as representatives of our food procurement visit the site at least once per year for source inspections.) If these enterprises use manure or any kind of waste would be of concern to me. I would also like to see the possibility investigated of producers having a viable HACCP (Hazard Analysis of Critical Control Point) program that would dovetail into the U of M dining service HACCP program. Such a program would alleviate some of my concerns about safety and sanitary practices.

Thank you for contacting me.

—Klaus Huser, Chef for Mosher and Stockwell Dining Halls

I would certainly favor the introduction of some of these foods. I do not like to read the paper and discover that foods that I've been serving are not healthy. Though I've tried some organic produce I'm no expert, and would have to test, evaluate cost and research availability of any new products that we would decide to spend your and our other customers' money on. My concerns are the cost; we are currently budgeted at 2.06 per person. This does not allow us room to spend much more than we do now. Also some organic produce does not have a real long shelf life.

Thank-you

—Buzz Cummings, Chef for South Quad Dining Hall

I myself am a big proponent of organic foods. If you can let me give you a little bit of a concept of what it means to have genetically hybrids/altered foods. The industry who is pushing the genetic hybrid/altered food are doing so because they are motivated by profit. The same way that many pharmaceutical companies are pushing to be the first to find a cure for cancer, is so that they can reap the profits from their research. The difference with genetic hybrids/altered foods is that even though the products look and taste the same, the DNA has been altered in some way to create a quantifiable difference, that means that in the plant there was an exchange or something else. What happens to the rest of the DNA strand is unknown and research has been very limited to view only the desired results. So to answer your question, in simple, yes. For the very same reason the University needs to be concerned about the environment and products that it provides to the University community.

A note to remember. When asbestos was introduced to the market, it had went through a lot of testing and everyone approved of it because it was a “natural” product of the earth, and it was! It wasn’t until much later that people started to find out that asbestos caused cancer in the various people who handled the material.

So even though genetic hybrid/altered foods look safe and are natural, the end products could be disastrous with very latent effects on life.

My main concern would have to be overall increase with cost. Though I suppose that if we introduce the concept with various products throughout the year we can create a stronger demand for organic products.

—Matt Hall, Chef for East Quad Dining Hall

I like the idea of organic foods being available to students. They represent a more healthy approach to the foods we consume. In the long run the land is probably better off using organic methods of production vs chemicals applied to the plants.

My reservation is cost. Chef Martin effectively indicated some of the cost barriers that we are faced with in our attempts to offer customers high quality meals at budgeted prices. Our system, one that is predicated on all you can eat, works against using “high end foods.” Under a system where students pay for what they consume you can offer organic apples or broccoli at higher prices. This effectively gives the consumer the choice of whether or not the organic item is worth the extra cost, and it does not penalize the customer who doesn’t perceive any advantage to using organic. That model would be win/win for all concerned.

Thanks-

—Steve Meyers, Executive Chef, University of Michigan Dining Halls

I have been reading the responses of others and in general I agree with them in broad terms. I share concerns about the health-related aspects about the organic versus non-organic foods issue and with GMOs, but it seems to me that it is too early to draw definitive conclusions as to whether we should avoid them altogether or use some and not others.

Switching to organic products, at least for the short term would increase our costs and currently we cannot afford to incur additional expenses. We sometimes receive feedback from students about wanting longer serving hours, fancier food and the like, but when we polled as to whether or not they would be willing to pay more for such things often they are not.

Best wishes

—Bill Durell, Dining Services Director for the University of Michigan

Appendix θ Theta

Educational Organic Bullet Points

We recommend a quick fact sheet containing bullet points that quickly and effectively show the benefits of organic food. A sample bulleted list follows:

Reasons to support the use of organic foods:

1. To Protect Future Generations:
Research suggests that children receive four times the exposure of many common pesticides in food as an adult. This is because of their smaller body weight and their need for high energy foods. The food choices you make now may influence those you make for your children in the future.
2. To Prevent Soil Erosion:
Agricultural soil is eroding many times faster than it is built up naturally. A one kilo loaf of bread is produced at the cost of seven kilos of soil lost. Soil is the foundation of the food chain in organic farming, but in conventional farming the soil is treated more as a medium for holding plants roots. Conventional farmers tend to rely on chemical fertilizers, harming the soil ecosystem.
3. To Protect Water Quality:
Water covers three-quarters of the planet and makes up two-thirds of our body. Pesticides contaminate water and kill fish and other organisms. Organic farming largely avoids these problems.
4. To Save Energy:
Modern farms are highly dependent on fossil fuels. More energy is now used to produce synthetic fertilizers for use on American farms than is used to cultivate and harvest all the crops in the United States. Organic farming is still mainly based upon labor-intensive practices such as weeding by hand and using green manures, crop covers and other natural techniques. Organic produce also tends to travel a shorter distance from the farm to your plate, thus reducing the amount of energy used.
5. To Keep Chemicals Off Your Plate:
Many pesticides approved for use have not been tested for their possible health effects on humans. In the United States, the Environmental Protection Agency considers 60 percent of all herbicides, 90 percent of all fungicides and 30 percent of all insecticides to be carcinogenic or possibly carcinogenic. A 1987 National Academy of Sciences report estimated that pesticides might cause 1.4 million cancer cases among Americans over their lifetime. Pesticides are, after all, poisons designed to kill living organisms. In addition to cancer, pesticides have been linked to birth defects, nerve damage and genetic mutations.

6. **To Protect Farm Workers Health:**
Farmers exposed to herbicides have a sixfold cancer risk compared to non-farmers. Farm worker health is a serious problem in developing nations, where pesticide use can be poorly regulated. Pesticides poison an estimated one million people annually.
7. **To Help Small Farmers:**
Although more and more large scale farms are making the conversion to organic practices, most organic farms are small independently owned and operated family farms of less than 100 acres. Small farms are under pressure and organic farming could become one of the few survival tactics left for family farms.
8. **To Support a True Economy:**
Although organic foods might seem more expensive than conventional foods, conventional food prices do not reflect hidden cost borne by taxpayers, including hidden costs such as pesticide regulation and testing, waste disposal and clean up, environmental damage and health costs.
9. **To Promote Biodiversity:**
Monoculture is the practice of planting large areas of land with the same crop. While this approach has tripled farm production between 1950 and 1970, the lack of natural diversity of plant life has left the soil lacking in natural minerals and nutrients and susceptible to disease. To replace the nutrients farmers use chemical fertilizers in large amounts, which can compound the problem. Pesticides kill wildlife and soil organisms. Organic farmers reintroduce natural diversity and encourage life in the soil.
10. **Better Tastes and More Flavor:**
Organic farming starts with an abundance of nutrients in the soil, which produces healthy plants. Healthy plants, which are well supplied with minerals, can make all the flavor producing substances they need. Many chefs use organic foods because they are well cared for during their production and they taste better!

Sources:

1. <http://www.goorganic.com.au/rn> it.
2. Kindberg, Eric and Beth Ardapple. *Soil Fertility For Organic Farmers*. Ozark Small Farm Viability Project, P.O. Box 99, Mt. Judea, AR 72655.

Appendix 1 Iota

Educational Organic Fact Sheet

	Organic Farms	Conventional Farms
Fertility	Primarily generated on-farm or by adding natural substances. No synthetic substances used during the previous three years to be certified.	Purchased off-farm. Primarily synthetic substances are used.
Water	Proper tillage and organic matter buildup increase soil water-holding capacity with good drainage.	Stopgap measures are used to counteract problems created by compaction and poor soil structure.
Pest Control	Mechanical and biological pest controls; or products derived from plants or natural substances.	Petrochemical and synthetically derived weed, insect and disease control products not occurring in nature.
Livestock	Fed organically grown feed, produced without synthetic fertility or pest controls; no growth promoters, hormones, antibiotics, or synthetic wormers; confinement must be consistent with good herd/flock health.	No limitations on feed additives or synthetic medicines beyond FDA, USDA dosage and maximum residue limits and minimum withdrawal time; no limits on density or type of confinement. Many synthetics and petrochemicals are acceptable.
Post-Harvest Handling	No synthetic or non-organic ingredients added during processing or post-harvest handling.	No limitations on ingredients or synthetic additives beyond FDA and USDA maximum allowable limits; many synthetics and petrochemicals are acceptable.
Farm Planning, Practices, and Productivity	Compatible with healthy nurturing of the soil, water, plants, animals, and humans on the farm.	Places short-term economic returns consistently above other priorities.
Kinds of Crops	Diversity in production creates marketing flexibility; integrated livestock and plant production.	Limited. Few marketing options. Livestock segregated from plant production.

Source:

1. Kindberg, Eric and Beth Ardapple. *Soil Fertility For Organic Farmers*. Ozark Small Farm Viability Project, P.O. Box 99, Mt. Judea, AR 72655.