

Cornhusker Economics

Cooperative Extension

Institute of Agriculture & Natural Resources
Department of Agricultural Economics
University of Nebraska - Lincoln

The Market and Welfare Effects of the New National Organic Program

Market Report	Yr Ago	4 Wks Ago	11/28/03
<u>Livestock and Products,</u>			
<u>Average Prices for Week Ending</u>			
Slaughter Steers, Ch. 204, 1100-1300 lb Omaha, cwt	\$72.96	\$103.34	\$101.70
Feeder Steers, Med. Frame, 600-650 lb Dodge City, KS, cwt	*	98.96	98.00
Feeder Steers, Med. Frame 600-650 lb, Nebraska Auction Wght. Avg	93.04	109.12	112.01
Carcass Price, Ch. 1-3, 550-700 lb Cent. US, Equiv. Index Value, cwt	111.10	157.83	154.78
Hogs, US 1-2, 220-230 lb Sioux Falls, SD, cwt	31.50	35.50	36.25
Feeder Pigs, US 1-2, 40-45 lb Sioux Falls, SD, hd	*	*	*
Vacuum Packed Pork Loins, Wholesale, 13-19 lb, 1/4" Trim, Cent. US, cwt	83.26	88.68	87.73
Slaughter Lambs, Ch. & Pr., 115-125 lb Sioux Falls, SD, cwt	84.87	89.62	*
Carcass Lambs, Ch. & Pr., 1-4, 55-65 lb FOB Midwest, cwt	164.35	180.50	180.58
<u>Crops,</u>			
<u>Cash Truck Prices for Date Shown</u>			
Wheat, No. 1, H.W. Omaha, bu	*	3.58	3.96
Corn, No. 2, Yellow Omaha, bu	2.31	2.34	2.38
Soybeans, No. 1, Yellow Omaha, bu	*	7.79	7.46
Grain Sorghum, No. 2, Yellow Kansas City, cwt	4.76	4.63	4.67
Oats, No. 2, Heavy Minneapolis, MN, bu	2.14	1.59	1.52
<u>Hay,</u>			
<u>First Day of Week Pile Prices</u>			
Alfalfa, Sm. Square, RFV 150 or better Platte Valley, ton	150.00	130.00	130.00
Alfalfa, Lg. Round, Good Northeast Nebraska, ton	80.00	62.50	61.50
Prairie, Sm. Square, Good Northeast Nebraska, ton	117.50	*	*
* No market.			

Organic agriculture is one of the fastest growing industries in the United States (U.S.). Organic food sales are growing at a rate of more than 20 percent annually, totaling \$7.8 billion in 2000 [1].¹ Advocates of the recently introduced national organic standards predict that their introduction will further enhance the growth of the organic sector.

The process for the establishment of national organic standards dates back to the late 1980's when the organic sector started lobbying for their introduction. In 1990, Congress passed the Organic Foods Production Act mandating the USDA to establish regulations for the organic sector [2]. The National Organic Program (NOP), a marketing program of the USDA Agricultural Marketing Service, developed national organic standards and established an organic certification program after a decade long debate involving producers, processors, retailers, consumers, environmentalists, scientists and certifying agents. The new national organic standards of the NOP were finally specified in 2000 and were to be fully implemented by 2002.

One of the main objectives of the NOP is to "assure consumers that agricultural products marketed as organic meet consistent and uniform standards" [2]. Organic food products are what economists call *credence goods*, that is, consumers are unable to observe the process through which the product was produced even after the product's consumption. Because of the credence nature of organic food products, consumers have to rely on product labels as their primary source of information regarding the nature of the product. In this environment, the clearer the content of the label, the more potent is the signal conveyed through it. Prior to the establishment of national organic standards, there was uncertainty as to what the organic label implied about the nature of the product bearing it. In part, the uncertainty involved the presence or absence of genetically modified (GM) ingredients and/or any form of genetic engineering in the production of a product labeled "organic."

¹ In sharp contrast, the conventional grocery industry grows by 3 to 5 percent annually.



The new national organic standards removed this uncertainty by explicitly specifying the methods, practices and substances that should be used in the production of agricultural products labeled and sold as organic. According to the NOP regulations, all natural (non-synthetic) substances are allowed in organic production and handling, and all synthetic substances, genetic engineering, ionizing radiation and sewage sludge are prohibited [2].

The introduction of the NOP is expected to have important implications for the organic sector as well as for the GM and conventional food sectors. The reason is that the NOP has explicitly linked the markets for organic and GM food products through the provision that food labeled as organic should be GM-free. It should be noted that due to the alleged “substantive equivalence” between GM products (GMPs) and their conventional counterparts, there is no mandatory labeling of GMPs in the U.S. Conventional and GM products are marketed together as a non-labeled product. Given the inability of the American consumer to observe the nature of the non-labeled product (GM versus conventional) under the current no labeling regime, purchase of organic-labeled food provides the only option available to consumers averse to GMPs. In effect, the new national organic standards have made the organic label equivalent to a “GM-free” label.

In a recent study the effect of the NOP on consumer purchasing decisions and welfare under no labeling of GMPs was examined. A simple model was developed to account for differences in consumer willingness to pay for products with different levels of interventions in their production process. The analysis focused on processed food products, where both the physical characteristics and the process attributes of the available products (i.e., organic, GM and conventional) are indistinguishable to consumers. In such a case, consumers must rely entirely on product labels for informed consumption decisions.

Analytical results showed that the nature and magnitude of the market and welfare effects of the NOP depend on the level of consumer aversion to interventions in the production process, the market share of the GM product in the total production of the non-labeled product (which determines the probability that the non-label product consumed will be GM), the level of consumer uncertainty regarding the content of the organic label prior to the NOP, and the distribution of consumer preferences and the effect of the NOP on the price of the organic product.

The results suggest that as long as there is no price increase in the organic product due to the NOP, the introduction of national organic standards will result in an unambiguous increase in both the market share of the organic sector and aggregate consumer welfare. The magnitude of this increase will be greater, the greater the level of consumer aversion to GMPs, the market share of GMPs in the production of the non-labeled product, and the level of consumer uncertainty regarding the organic label prior to the NOP. The increase in aggregate consumer welfare results from an increase in the utility of two different consumer groups. The first group includes consumers with intermediate levels of aversion to interventions in the production process who switch their

consumption to the organic product as a result of the NOP. The second group includes consumers with relatively high levels of aversion to interventions in the production process, who both before and after the NOP consume the organic-labeled product but receive greater utility after the NOP knowing that the organic label is a GM-free label.

The introduction of the NOP, however, could result in higher certification and segregation costs for the organic sector due to the requirement that products labeled “organic” must be GM-free. In this case, if the higher costs are passed on to consumers through higher product prices, then the market and welfare effects of the NOP are ambiguous. For relatively high price increases and small enhancement in utility from the consumption of the organic product (due to low levels of consumer aversion to GMPs and/or low consumer uncertainty regarding the organic label prior to the NOP), the NOP is shown to benefit the conventional and GM sectors by reducing the market share of the organic product while causing consumer welfare to fall. Interestingly, under certain combinations of price increases and utility enhancement values, while the NOP causes the market share of the organic product to fall, it causes aggregate consumer welfare to rise. This outcome occurs when the welfare loss incurred by consumers who switch their consumption from the organic to the non-labeled product (due to the higher price of the organic product after the NOP), is smaller than the welfare gain realized by consumers with high levels of aversion to GM products (who are now assured of the GM-free nature of the organic-labeled food).

Overall, the effect of NOP on the market share of the organic sector and aggregate consumer welfare is sensitive to the price effect of the certification and segregation costs required in assuring the GM-free nature of organic-labeled food. As long as the increase in the price of organic-labeled food is not significant, the new national organic standards are expected to have a positive impact on both the growth of the organic sector and aggregate consumer welfare.

References:

1. ERS (Economic Research Service). “Organic Food Industry Taps Growing American Market,” USDA, ERS: *Agricultural Outlook*, October 2002. Retrieved from the World Wide Web, 2002.
<http://www.ers.usda.gov/publications/agoutlook/oct2002/ao295b.pdf>
2. NOP(The National Organic Program). “Labeling and Marketing Information.” Retrieved from the World Wide Web, 2003.
<http://www.ams.usda.gov/nop/FactSheets/Backgrounder.html>

Note: The article is based on Yiannaka, A. “The Market and Welfare Effects of the New National Organic Program” in *Marketing Trends for Organic Food in the Advent of the 21st Century* published by World Scientific, (in press).

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