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# Organic Poultry and Eggs Capture High Price Premiums and Growing Share of Specialty Markets

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## Abstract

Organic poultry and egg markets in the United States are expanding rapidly. Statistics for the sector, especially the number of organic broilers, also signal expanding domestic supply. This report examines trends in markets, animal numbers, and prices for organic poultry and eggs. Price comparisons between organic and conventional show significant organic price premiums for both broilers and eggs.

**Keywords:** Organic, poultry, broilers, eggs, markets, production, organic price premiums.

**Note:** A web data product with monthly prices for organic and conventional poultry and eggs from 2004-06 is available at [www.ers.usda.gov/data/organicprices/](http://www.ers.usda.gov/data/organicprices/). Current weekly prices are available at [www.ams.usda.gov/mnreports/aj\\_PY050.txt](http://www.ams.usda.gov/mnreports/aj_PY050.txt)

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## Introduction

Eggs and poultry are now among the fastest growing food products in the U.S. organic sector. Organic eggs are widely available in both conventional and natural food supermarkets, and organic chicken is appearing in grocery stores as well. In niche markets, such as farmers' markets, gourmet food shops, and restaurants, customers are offered farm-fresh organic eggs and locally processed organic chicken and poultry products.

USDA's National Organic Program regulates organic products (see box National Organic Standards). USDA allowed the use of an organic label for meat and poultry in 1999, well after other organic food labels were established, and these products are starting to catch up with the rest of the sector. Total U.S. sales of organic foods were estimated at almost \$14 billion in 2005, about 2.5 percent of total U.S. retail food sales. U.S. organic sales have had annual growth rates of about 20 percent since the mid-1990s and are forecast to rise to \$24.4 billion by 2010 (NBJ, 2006). Along with growing sales, organic products have shifted from being a lifestyle choice for a small share of consumers to being consumed at least occasionally by two-thirds of Americans (Hartman Group, 2004; Whole Foods Market, 2005).

Organic poultry and egg sales currently account for a small share of the overall U.S. egg and poultry market. Both markets, however, like much of the organic sector, are growing rapidly, organic poultry in particular. Both sectors are still in their infancy, and many changes are likely as they develop.

This report uses new data from USDA's Agricultural Marketing Service (AMS) to show that price premiums for organic poultry and eggs at the intermediary level<sup>2</sup> were considerable from 2004 through mid-2006. At least in the near term, price premiums will remain high as production struggles to keep pace with fast-growing consumer demand. High costs and shortages of organic feed grains, along with a lack of processing capacity, are limiting the short-term expansion of the organic poultry and egg sector. At the same time, a growing number of consumers cite concerns regarding health issues, the environment, and animal welfare as factors influencing their decisions to purchase organic poultry and eggs, and these individuals are willing to pay the price premiums demanded in the marketplace.

<sup>2</sup>We use this term to describe the level at which prices are paid by the first receiver (such as a retailer, distributor, or manufacturer) to the poultry or egg company. In many cases, the term "wholesale level" could be used.

## National Organic Standards

Congress passed the Organic Foods Production Act of 1990 to establish national standards for organically produced commodities, and USDA implemented the standards in October 2002. The national organic standards require that organic growers and handlers (including food processors, manufacturers, and some distributors) be certified by State or private agencies/organizations under the uniform standards developed by USDA, unless the farmers and handlers sell less than \$5,000 a year in organic agricultural products. Final retailers of agricultural products that do not process agricultural products are also exempt from certification, but they must meet all of the certified organic handler requirements to maintain the organic integrity of the organic products they sell.

The national organic standards address the methods, practices, and substances used in producing and handling crops, livestock, and processed agricultural products. Although specific practices and materials used by organic operations may vary, the standards require every aspect of organic production and handling to comply with the provisions of the Organic Foods Production Act. Organically produced food cannot be produced using genetic engineering and other excluded methods, sewage sludge, or ionizing radiation. These standards include a national list of approved synthetic, and prohibited nonsynthetic, substances for use in organic production and handling.

The labeling requirements under the national standards apply to raw, fresh, and processed products that contain organic ingredients and are based on the percentage of organic ingredients in a product. Agricultural products labeled “100-percent organic” must contain (excluding water and salt) only organically produced ingredients. Products labeled “organic” must consist of at least 95-percent organically produced ingredients. Products labeled “made with organic ingredients” must contain at least 70-percent organic ingredients. Products with less than 70-percent organic ingredients cannot use the term organic anywhere on the principal display panel but may identify the specific ingredients that are organically produced on the ingredients statement on the information panel. The USDA organic seal—the words “USDA organic” inside a circle—may be used on agricultural products that are “100-percent organic” or “organic.” A civil penalty of up to \$10,000 per violation can be levied on any person who knowingly sells or labels as organic a product that is not produced and handled in accordance with the regulations.

For further information, visit USDA’s Agricultural Marketing Service, National Organic Program website, at [www.ams.usda.gov/nop/](http://www.ams.usda.gov/nop/)

## Organic Poultry Market Overview

The organic meat sector is currently one of the fastest growing segments of the organic food industry, and poultry accounts for nearly two-thirds of this sector. U.S. retail sales of organic poultry were \$161 million in 2005, well under 1 percent of conventional poultry sales. However, retail sales of organic poultry have almost quadrupled since 2003, and estimates of annual growth rates range from 23 to 38 percent through the end of the decade, with annual sales reaching almost \$600 million by 2010 (NBJ, 2006). Approximately half (51 percent) of organic poultry sales were in natural food stores in 2003, 45 percent in mass market grocery stores (including conventional grocery, mass merchandiser, and club stores), and 4 percent through direct sales and other distribution channels (see box Local Consumer Connections for Organic Poultry and Eggs) (NBJ, 2004). As in the conventional food sector, sales of broilers account for the majority of organic poultry sales.

In a recent international survey, approximately 12 percent of U.S. consumers reported purchasing organic poultry regularly (ACNielsen, 2005). In fact, organic meat and poultry recently became recognized for the first time as a “gateway” organic food (Demeritt, 2004). Organic gateway products, which also include produce, dairy, soy, and baby foods, are perceived as important frontline commodities for the industry. They are often the first organic products to be purchased by consumers and can steer consumers toward purchasing other organic products, such as cereals and snacks.

Drivers of the growth in consumer demand for organic meat include concerns about the use of antibiotics and growth hormones in animal livestock, the environment, and the humane treatment of animals (Demeritt, 2004; NBJ, 2004). The expansion of organic meat sections in natural food stores, the growth of organic meats in deli counters, and the increasing use of organic meats in manufactured products, such as soups and frozen meals, are also boosting demand.

Insufficient supply, however, has been a limiting factor for some supermarkets interested in carrying organic meats (NBJ, 2004). In addition, the presence of competing labels, such as “natural,” have historically impacted organic meat sales. Organic meat still faces intense competition from meats labeled “natural,” which developed a market before meat was allowed to carry any label of organic and are not required to meet the stringent production standards that USDA set for organic products. However, implementation of the national organic standards in 2002 has heightened interest in organic products, including meat, and is changing the dynamic between organic and natural meat products (see box Labels in the Specialty Poultry and Egg Sectors for more information).

Not much is known about the structure of the organic poultry sector, and the extent to which it may develop. The conventional poultry sector is characterized by a high degree of vertical coordination, in which firms control all or part of the food supply chain, and contracting (see box Conventional Poultry and Egg Production). Although some organic poultry companies are using contracts and coordinating inputs for organic broiler production, prac-

## Local Consumer Connections for Organic Poultry and Eggs

As mainstream markets for organic food have expanded in the last decade, with natural food supermarkets increasing in size and number and conventional supermarkets adding organic sections, consumer direct markets have also expanded and broadened product offerings. According to USDA's Agricultural Marketing Service, over a thousand new farmers' markets have started up in the United States during the last decade, bringing the total to over 3,700 markets nationwide (see [www.ams.usda.gov/farmersmarkets](http://www.ams.usda.gov/farmersmarkets)). Community-supported agriculture (CSA) farms—farms that sell shares of their food harvest to consumers—have also expanded, from about 800 in the late 1990s to over 1,100 in 2006 (see [www.csacenter.org](http://www.csacenter.org)).

Organic chicken and eggs are becoming much more common in these markets as producers expand their organic livestock production. In 2005, the most recent year for which USDA has data, farmers in nearly 35 States were producing certified organic poultry and eggs, compared with only 17 States in 1997 (see [www.ers.usda.gov/data/organic](http://www.ers.usda.gov/data/organic)). The top four States account for 94 percent of organic broiler production and 54 percent of organic layer hen numbers (table 1). Broiler and egg production in these States is likely serving regional and national markets. In the other States, however, organic poultry and egg production is smaller scale and is likely serving mainly local and regional markets. USDA's sustainable agriculture program recently profiled a number of small organic poultry farms in Ohio, Pennsylvania, Idaho, Nebraska, Rhode Island, Texas, and Kentucky (USDA, SARE, 2005). The flocks on these farms ranged from 300 to 3,000 birds, and most farms had vegetable or beef operations as well. The farmers profiled processed their birds locally, some in self-designed onfarm facilities, and have explicitly oriented their operations to address environmental concerns and create better connections with consumers.

In a recent nationwide survey of organic farmers conducted by the Organic Research Farming Foundation, over 40 percent of the respondents indicated that they planned to increase the number of animals in their operation, and over 45 percent planned to increase the volume of organic product they sell directly to consumers, restaurants, and individual stores (Walz, 2004). These farmers are responding to heightened demand for locally grown organic product—a recent survey of farmers' market managers found that demand for organic products was strong or medium in most of the markets surveyed around the country, and that managers felt more organic farmers were needed to meet consumer demand in many States (Kremen et al., 2004).

tices that mimic the conventional sector, supply constraints and the current small size of the sector seem to allow for a market still partly governed by personal relationships.<sup>3</sup>

The market for organic poultry is also still developing, and many changes at the marketing level are expected. To date, organic poultry companies have

<sup>3</sup>Personal relationships have historically played a key role in organic marketing because they facilitate product quality and consumer assurance. According to the economics literature, in small markets, reputation serves to keep buyers and sellers honest under certain conditions. In small markets, buyers and sellers are unlikely to cheat the other when they have a personal relationship and/or could easily develop a bad reputation, subsequently losing business. As markets become larger and more anonymous, buyers and sellers may not know each other personally and, thus, the potential for cheating increases; in such cases, markets often switch from doing business on a handshake to a more formal system (Milgrom, North, and Weingast, 1990). The personal components of the organic poultry sector were observed at one company we visited. At this company, the organic turkey growers are independent (they buy their own feed, for example) but the processor guarantees a price per pound in advance. When feed costs went up one year, the owner of the processing plant paid more per pound to cover the additional feed costs to the producers.

## Labels in the Specialty Poultry and Egg Sectors

In addition to the organic label, a number of other mostly process-based labels are used on poultry and eggs. Some of these labels are not regulated at all, while others are regulated to a varying degree by USDA. None are regulated as extensively as the organic label, and only organic is required to be certified by an independent third-party.

Prior to 1999, USDA did not allow meat companies to use the term “organic” anywhere on their meat products. During this period, meat producers developed a “natural” label, which benefited from having to meet minimal USDA requirements. In 1999, USDA’s Food Safety and Inspection Service (FSIS) began allowing the label “certified organic by” and the certifier name on the package, but this label has been competing with the natural label, which had already garnered a loyal customer base and market share.

Because of this history, organic meat has the lowest market penetration of the combined natural and organic sales category of any other organic commodity; organic meat accounted for only 9 percent of the total \$771 million in U.S. natural and organic meat and poultry sales in 2003 (NBJ, 2004). In contrast, organic dairy and eggs made up 87 percent of the sales category in 2003.

The heavy use of the natural label, and many other labels, likely leads to some consumer confusion about production practices for organic and nonorganic poultry and eggs. Organic producers are required by USDA to meet all of the practices in the various labels listed in this box, except those in the “pastured poultry” label; however, organic regulations require outdoor access for birds and many organic producers, particularly small-scale producers, manage their birds under a pastured poultry system.

USDA, FSIS regulates a number of labels used on poultry (see [www.fsis.usda.gov/oa/pubs/lablterm.htm](http://www.fsis.usda.gov/oa/pubs/lablterm.htm)). Also, USDA’s Agricultural Marketing Service recently developed a process-verification program for the poultry industry to provide an independent verification service for specific quality management systems (see [www.ams.usda.gov/poultry/grading/pvp.htm](http://www.ams.usda.gov/poultry/grading/pvp.htm)). Many companies have expressed interest in developing a process-verified label for poultry and eggs.

### **Labels regulated by USDA, FSIS**

**Free Range or Free Roaming.** Producers labeling poultry as free range or free roaming must demonstrate to USDA, FSIS that the poultry has been allowed

access to the outside. USDA regulates the label for poultry, but not eggs. No specific amount of time outside or stocking density is required. This label does not require third-party certification.

**Natural.** A product that contains no artificial ingredient or added color and is only minimally processed (a process which does not fundamentally alter the raw product) may be labeled natural. The label must explain the use of the term “natural” (such as no added colorings or artificial ingredients; minimally processed.) Unlike the organic label, the natural label does not have to meet requirements for feed, antibiotic use, or pasture. The label does not require third-party certification.

**No Antibiotics.** Producers may include the terms “no antibiotics added” on labels for poultry products if they have provided sufficient documentation to USDA, FSIS demonstrating that the animals were raised without antibiotics. The label does not require third-party certification.

**No Hormones.** USDA does not permit the use of hormones in poultry production. Therefore, the label “no hormones added” cannot be used on the labels of poultry unless it is followed by a statement that says “Federal regulations prohibit the use of hormones.” USDA does not allow a “hormone-free” label.

### **Unregulated labels**

**Cage-Free.** Unlike birds raised for eggs, birds raised for meat are rarely caged prior to transport. Thus, this label on poultry products has virtually no relevance to animal welfare. The label can be helpful to consumers when it is placed on egg cartons, as most conventionally raised laying hens are kept in cages; however, the label does not guarantee that the bird had access to the outdoors. In addition, this term is not regulated by USDA, and the label does not require third-party certification.

**Pastured Poultry.** The term refers to poultry management using a modified free-range system whereby birds are raised on pasture but provided with shelters that can be moved by hand or tractor. Poultry is often moved daily. Chickens can get up to 20 percent of feed from pasture forage in these systems. This term is not regulated by USDA, and the label does not require third-party certification.

## Conventional Poultry and Egg Production

The United States is the world's largest producer of poultry. Broilers account for the majority of the Nation's commercial chicken production, with U.S. retail sales totaling \$43 billion in 2004. In the same year, U.S. farms produced 8.5 billion broilers (USDA, ERS, 2006a; USDA, NASS, 2005). Nearly 100 billion eggs are produced annually in the United States, mostly for human consumption (USDA, ERS, 2006c).

Conventional broiler and egg systems mostly use confined, high-density, mechanized housing. Most broilers are raised on litter in houses of 20,000 and more, while most layers are caged in houses of 40,000-100,000 birds. Unlike organic poultry, conventional poultry do not have access to outdoors or natural light. Most poultry operations raise one species of poultry for a single purpose, for example, hens to produce eggs for human consumption or for breeding purposes, or chickens for meat (Perry, Banker, and Green, 1999).

Production or marketing contracts between growers and processors cover almost 90 percent of U.S. broiler and egg production (MacDonald et al., 2004). For example, in the broiler sector, a grower under contract normally supplies the housing, heating and cooling, feeding, and watering systems, as well as the labor needed for raising the birds. The grower receives a payment per pound of live broilers produced, based on the grower's performance relative to that of other growers. The processor supplies the chicks, feed, and veterinary medicines. The processor schedules transportation of the birds from the farm to the processing plant. Vertical integration, in which companies control and own production from the hatchery and feed mill to processing and marketing, accounts for the remainder of broiler production, approximately 10 percent. Independent broiler production by farmers in the conventional sector is virtually nonexistent.

primarily marketed their products regionally. With the recent growth of the sector, however, it appears that a number of established organic poultry businesses are expanding their production and processing capabilities in terms of both capacity and geographic scope. In addition, at least one national organic company has developed a fresh and frozen poultry line that is distributed nationally. As the industry further expands, it faces such challenges as the lack of smaller-and medium-sized processing facilities, either new or existing, for organic poultry and eggs (Levondoski, 2006). Although some conventional poultry companies, including some of the largest, have introduced organic brand lines over the last few years, all seem to have recently dropped organic production to focus on the "natural" market. As the organic poultry market develops, however, these conventional companies are likely to re-emerge as competitors in the sector.

## Organic Egg Market Overview

Organic eggs have had slower growth rates over the last few years than organic poultry, although with a larger sales base. Organic egg sales were \$161 million in 2005, up from \$140 million in 2004, with an average annual growth rate of 19 percent between 2000 and 2005. Estimated annual growth rates through the end of the decade range from 8 to 13 percent, with annual sales reaching \$263 million (NBJ, 2006). An ERS analysis of ACNielsen Homescan data (retail scanner data for 8,533 households) shows that organic eggs accounted for almost 1 percent of the fresh egg market in 2004. In 2003, consumers purchased 51 percent of organic eggs in mass-market channels, 45 percent in natural food stores, and almost 3 percent direct from the producer or through other channels (NBJ, 2004).

Growth in the specialty egg market is rapid, and organic eggs are the fastest growing part of this sector (NBJ, 2004). Factors boosting demand for organic eggs include consumer concerns for health and animal welfare. In addition, demand for organic eggs is high among consumers who regularly purchase organic items. In one survey, approximately 54 percent of “core” organic consumers reported purchasing organic eggs regularly (Demeritt, 2004), while another survey reported that 15 percent of all consumers purchased organic eggs regularly (ACNielsen, 2005).

Although conventional eggs are the second biggest private label, or house brand, item in the supermarket, organic eggs have historically been sold as branded items (NBJ, 2004). Private labeling of organic eggs, however, seems to be growing (Levondoski, 2006; Sheats, 2006). In addition, the egg sector seems to be increasing its use of the “natural” label, which in this case typically refers to eggs from hens that are fed a vegetarian diet (Sheats, 2006).

Data for organic eggs in 2003 show that the sector is fairly concentrated, with the top five companies holding approximately 55 percent of the market share and the top two companies controlling approximately 33 percent of the market (NBJ, 2004) (fig. 1). The two largest companies are established organic dairy and egg companies with national distribution capabilities. In addition, the list of the top ten egg companies selling organic eggs mostly comprises organic and specialty egg companies, which suggests that for now, conventional egg companies have not significantly expanded into the organic egg sector.

### ***Organic Poultry and Egg Production Systems***

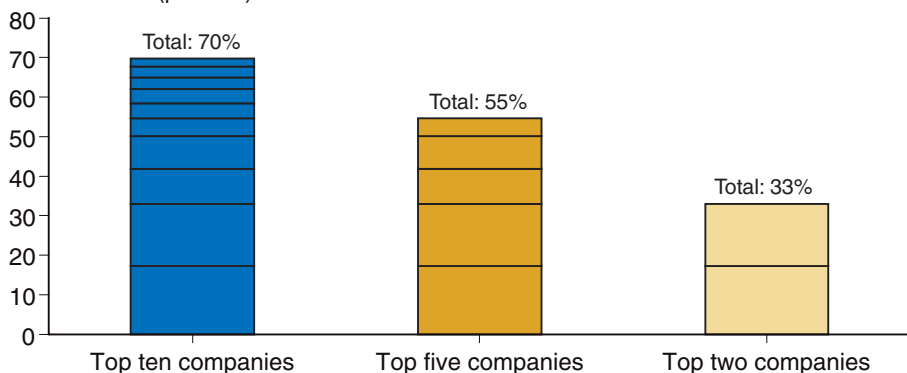
USDA defines organic production as a system that integrates “cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity” (USDA, AMS, 2000). Livestock can play an important role in achieving some of these principle aims of organic farming. Organic meat, poultry, and eggs are made from animals raised under organic management and must meet USDA’s comprehensive set of requirements for animal health and nutrition (USDA, AMS, 2000). Organic farming is also subject to mandatory third-party certification from a USDA-accredited program.



Figure 1

### U.S. market share for organic eggs, 2003

Market share (percent)



Source: USDA, Economic Research Service using data from NBJ, 2004.

USDA's organic requirements cover every aspect of poultry and egg production. Organic poultry cannot be given growth-producing hormones (which are prohibited in conventional systems as well) or antibiotics. The animals may receive preventive medical care, such as vaccines, and dietary supplements of vitamins and minerals. They must be fed certified organic feed, free of animal byproducts, or feed on certified organic pasture if raised on a pastured system. Organic poultry and eggs must be processed in plants that are certified to process organic poultry and eggs.

Growers today use many different types of systems to raise organic poultry, from free-range and pastured poultry to permanent poultry houses that allow birds to access the outdoors through paddocks. All organically raised herds and flocks must be raised separate from conventionally raised birds. Poultry must be under continuous organic management from the second day of life; some farmers purchase chicks from a certified organic hatchery while others begin raising the chicks organically when they arrive on the farm. Producers must provide living conditions that accommodate the health and natural behavior of the animals. Animals must have access to the outdoors, shade, exercise areas, fresh air, and direct sunlight suitable to their species and stage of production, but minimum levels of access have not been set. For poultry, indoor confinement must be temporary and justified due to weather, stage of production, health and safety of animal, and risks to soil or water quality. Growers are not allowed to cage organic poultry. Specific rules do not apply to stocking density or flock size. Instead, a certifier evaluates each farm's system to decide whether density is appropriate.

Organic poultry and egg production may be more attractive to producers than some other organic meats because it is easier to move in and out of than other livestock production. Many conventional houses, particularly the older poultry houses, can be converted easily for organic production. Conversion time is not needed for the chicks used in production. If synthetic chemicals have not been used on the pastureland for the previous 3 years, transitioning the land to organic certification is also fairly easy.

Costs of production, however, can be higher in organic production systems than in conventional systems due to a number of factors. The primary difference is the expense of organic feed, which can account for up to 70 percent

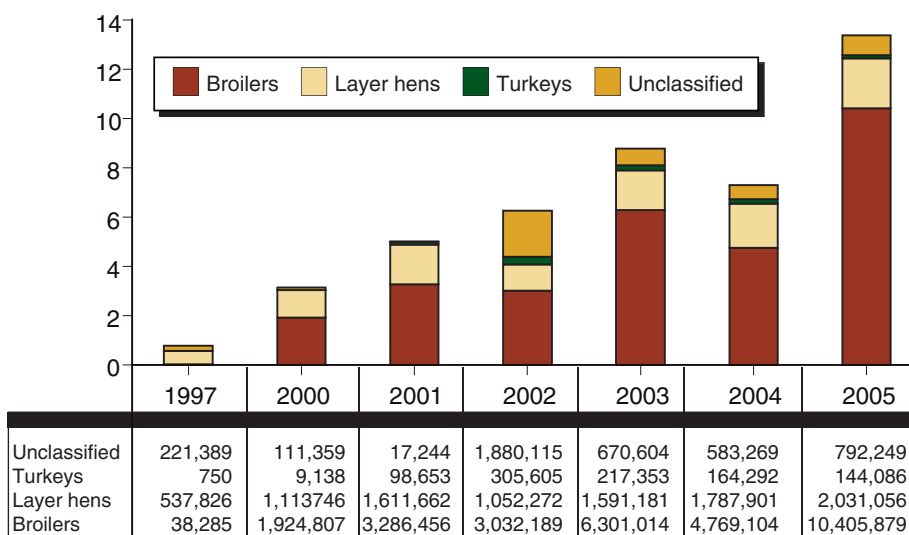
of the cost of raising organic chickens. Typically, prices for organic feed grains are about 50-100 percent above conventional feed grain prices (USDA, AMS, 2003). Increasing demand and unfavorable growing conditions, however, have recently resulted in some shortages and even higher prices for organic grain and soybeans in the United States (Born, 2005).

Other differences in the costs of production for organic poultry may result from smaller flock sizes, higher mortality, longer production cycles for broilers, and shorter production cycles for layer hens. While producers are not generally constrained by flock size or stocking density, their concerns for poultry health, which are higher in a system that does not permit the use of antibiotics, often result in considerably fewer chickens per organic facility than per conventional facility. Higher bird mortality in organic systems stems from a number of factors, including predators and disease (Eberly, 2005; Hermansen, Strudsholm, and Horsted, 2004). Broilers are usually raised for a longer period of time in the organic system (7.5-8 weeks) than in the conventional system (5-6 weeks), with fewer flocks raised per year. Due to the high cost of organic feed, organic layer hens are also not typically forced to molt (which extends the productive life of layer hens) as they are in the conventional sector (Levondoski, 2006). Thus, costs for replacement pullets are higher in the organic system because layer hens are replaced more frequently.

USDA first reported organic poultry numbers in 1992, when total organic poultry livestock numbered 61,000 (USDA, ERS, 2006b). Since then, U.S. organic poultry production has increased rapidly, from nearly 800,000 animals in 1997 to over 13 million in 2005 (fig. 2). Much of this growth has come from the broiler sector. In 2005, organic broilers accounted for more than five times the number of organic laying hens in the United States and over three-quarters of all poultry.

Figure 2  
**Number of U.S. certified organic poultry animals, 1997-2005**

Millions of birds



Source: USDA, Economic Research Service, 2006b: *Organic Agricultural Production in 2005*.  
 Data Product: Table 5. Certified organic livestock. Data on cows, pigs, sheep, chickens and other poultry, by State, 1997 and 2000-2005. Available at [www.ers.usda.gov/data/organic/](http://www.ers.usda.gov/data/organic/)

The change in geographic location of poultry production from 2000 to 2005 demonstrates the rapid transformations underway in the sector (table 1). Although most segments of the organic poultry sector are highly concentrated geographically, they have become less so over the last 5 years. The top four broiler-producing States accounted for 94 percent of U.S. production in both 2000 and 2005. California, however, has become less dominant in the sector over the last 5 years, decreasing from 62 percent of total organic broiler production in 2000 to 34 percent in 2005. Pennsylvania and Nebraska increased organic broiler production substantially since 2000, accounting for 29 and 23 percent of total production, respectively, in 2005. North Carolina and Oklahoma, both top ranking States for organic broiler production in 2000, saw decreases in animal numbers by 2005, with North Carolina ranking 5th in production (with almost 300,000 animals) and Oklahoma ranking 19th out of 29 organic broiler-producing States (with 1,100 animals).

Production of organic layer hens is less geographically concentrated than production of both broilers and turkeys, with the top four States accounting for 54 percent of U.S. production in 2005 (down from 73 percent in 2000). The total share of production by State also became less geographically concentrated over the period, with North Carolina (the top State in both 2000 and 2005) decreasing its overall share from 42 percent to 15 percent. Iowa significantly increased its organic layer hen numbers from 2000 to 2005, while Virginia, a top State in 2000, ranked sixth in 2005 with 119,175 organic layer hens.

Although organic turkey production is heavily concentrated, with 97 percent of production attributed to the top four States (up from 93 percent in 2000),

Table 1

**Top four States for organic poultry production, 2000 and 2005**

State	Animals produced in 2000	Share of U.S. organic production	State	Animals produced in 2005	Share of U.S. organic production
	<i>Number</i>	<i>Percent</i>		<i>Number</i>	<i>Percent</i>
<b>Broilers</b>			<b>Broilers</b>		
California	1,200,000	62	California	3,567,425	34
North Carolina	410,242	21	Pennsylvania	2,880,800	28
Oklahoma	140,000	7	Nebraska	2,435,546	23
Iowa	69,170	4	Iowa	886,280	9
Total	1,819,412	94	Total	9,770,051	94
<b>Layer hens</b>			<b>Layer hens</b>		
North Carolina	462,576	42	North Carolina	301,500	15
Pennsylvania	148,079	13	California	281,070	14
California	116,608	10	Pennsylvania	273,986	13
Virginia	93,680	8	Iowa	242,526	12
Total	820,943	73	Total	1,099,082	54
<b>Turkeys</b>			<b>Turkeys</b>		
California	7,664	84	Michigan	56,729	39
New Mexico	500	5	Pennsylvania	48,815	34
Ohio	210	2	California	18,025	13
Iowa/Pennsylvania (T)	200	2	Iowa	15,260	11
Total	8,574	93	Total	138,829	97

Note: The number of organic eggs produced in the United States is currently not tracked; however, the number of organic layer hens provides an indication of the level of production. Although the data have limitations, ACNielsen data can be used to track organic egg sales at the retail level.

Source: USDA, ERS, 2006b: *Organic Agricultural Production in 2005*. Data Product: Table 5. Certified organic livestock. Data on cows, pigs, sheep, chickens and other poultry, by State, 1997 and 2000-2005. Available at [www.ers.usda.gov/data/organic/](http://www.ers.usda.gov/data/organic/)

concentration among the States has decreased. In 2000, California accounted for 84 percent of total organic turkey production, falling to 13 percent by 2005. Michigan, Pennsylvania, and Iowa all increased their organic turkey numbers substantially from 2000 to 2005, accounting for 39, 34, and 11 percent of all organic turkey production, respectively.

## Price Premiums for Organic Eggs and Poultry

Over the last decade, price premiums for organic products (or the price difference between organic and comparable conventional products) have contributed to growth in certified organic farmland. Most organic products sell for a premium over comparable conventional products, due in part to higher production, processing, procurement, and distribution costs relative to those of conventional products. In addition, organically produced foods have extra costs associated with product certification and segregation that carry all the way through the food chain. Another contributing factor to price premiums is the relative levels of supply and demand for organic products, which contribute to higher profits for organic farmers.<sup>4</sup> Lastly, organic consumers perceive that organic food provides environmental and health benefits and, thus, are willing to pay a higher price (Onozaka et al., 2006).

Systematic collection of price data for organic products in the United States has been limited until recently, preventing researchers from conducting indepth analyses of market trends in prices, margins, and price premiums between organic and conventional products. Understanding these trends can provide insight into relative changes in the demand and supply of organic products, including a clearer sense of the maturity of the markets, and allow an examination of whether the growth rates in organic sales of the recent past are likely to continue. Only a handful of studies (Glaser et al., 1998; Glaser and Thompson, 2000; Greene and Calvin, 1997; Oberholtzer, Dimitri and Greene, 2005; Ro and Frechette, 2001; Sok and Glaser, 2001; Streff and Dobbs, 2004; Vandeman, 1998) have examined price premiums—primarily farmgate and wholesale<sup>5</sup>—at specific points in time; these studies have shown significant organic premiums for fruits, vegetables, grains, and milk in the 1990s and beyond.

Organic price data for eggs and poultry at the intermediary level became available in USDA AMS's *Market News Reports* starting in January 2004 (USDA, AMS, 2005b).<sup>6</sup> The report tracks the prices paid to the poultry or egg companies by the first receiver (or that entity that purchases the product from the companies, such as a retailer, distributor, or manufacturer). Prices include all types of transactions, including contract and spot market. AMS price data for organic poultry and eggs are reported weekly as a range of high and low prices. The monthly prices used in this report are simple averages of the reported high and low prices. Only prices for brown eggs are currently reported by AMS since the majority of the organic egg market comprises brown eggs. In 2005, AMS received organic poultry prices from 18 companies and egg prices from 14 companies.

The price data for conventional poultry are reported weekly and reflect a 12-city composite weighted average. Like the organic price data, the conventional price data reported by AMS represent the price paid by the first receiver to the poultry or egg companies. Prices for conventional shell eggs are for white eggs, and are a combined regional price. For both conventional poultry and eggs, the monthly prices used in this report are averages of the weekly prices reported by AMS.

<sup>4</sup>Any part of the price premium that may be due to differential production and handling costs will be maintained as the market grows. Additional research is needed to understand the components of the organic price premium.

<sup>5</sup>Limited data on wholesale prices for organic products are available from USDA and private sources. USDA Agricultural Marketing Service (AMS) Market News Reports includes wholesale prices for organic items when available in its daily wholesale fruit and vegetable reports, which cover terminal markets in 15 U.S. cities. Organic produce prices first appeared in the *Boston Wholesale Fruit and Vegetable Report* and *Philadelphia Wholesale Fruit and Vegetable Report* in 1992. Since then, AMS's Market News Reports has included organic prices in a number of other wholesale markets on a sporadic basis (see [www.ers.usda.gov/data/organicprices/](http://www.ers.usda.gov/data/organicprices/)).

<sup>6</sup>AMS has also started reporting weekly retail prices for organic eggs in late 2005 (USDA, AMS 2006) and chicken items in late 2006. For the short span of price reporting available for eggs (October 2005 to February 2006), price premiums for organic eggs at the retail level were usually well above 200 percent, peaking at 428 percent. In addition, ERS analysis of ACNielsen Homescan egg data for 2003 revealed an average 183 percent organic price premium for a dozen eggs at the retail level.

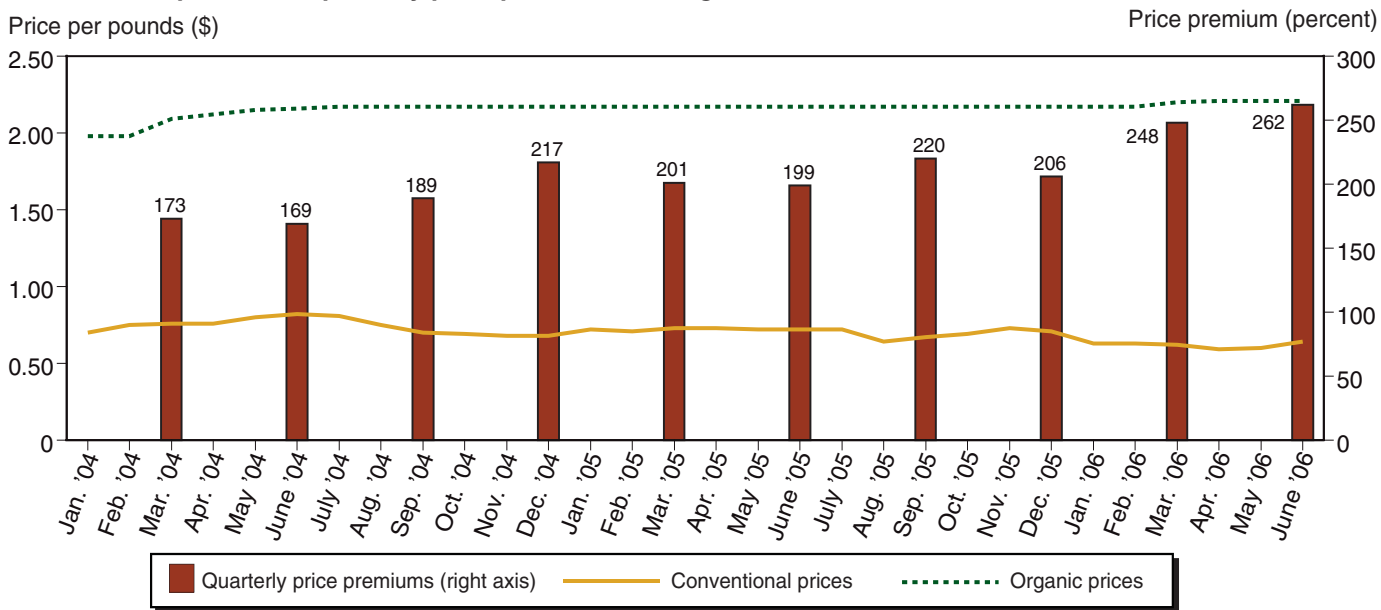
The average quarterly price premiums for organic broilers ranged from 169 percent in the second quarter of 2004 to 262 percent in the second quarter of 2006 (fig. 3). The overall average price premium for the period January 2004 through June 2006 was 200 percent. Prices for organic broilers, as reported by AMS, held steady at an average of \$2.17 per pound from July 2004 through early 2006, with a range of \$1.89 to \$2.45. Average prices for conventional broilers, on the other hand, ranged from \$0.59 to \$0.82 per pound during the same period.

The constant level maintained by organic prices may stem from the use of formal or informal contracts for organic broiler meat between the first receiver (such as a retailer or manufacturer) and the companies supplying the organic broilers. Given the low level of supply in the market, and growing consumer demand, it is likely that first receivers are willing to pay high prices to secure a steady supply of organic broiler meat. In addition, anecdotal evidence suggests that poultry companies believe that the market cannot bear higher prices than currently exist. Clearly, the supply of organic broilers relative to demand does not appear to have grown large enough yet to exert downward pressure on prices.

Price differences for conventional and organic eggs tend to be higher and more variable than those for conventional and organic poultry due to more variability on the part of conventional shell egg prices (fig. 4). From 2004 through mid-2006, price premiums for organic shell eggs ranged from 113 percent in the first quarter of 2004 to a high of 414 percent in the second quarter of 2005. The average price premium over the entire period was 278 percent. Like prices for organic broilers, prices for organic eggs held steady at an average of \$2.34 per dozen from July 2004 through June 2006, with a

Figure 3

**First receiver prices and quarterly price premiums for organic whole broilers, 2004-06**

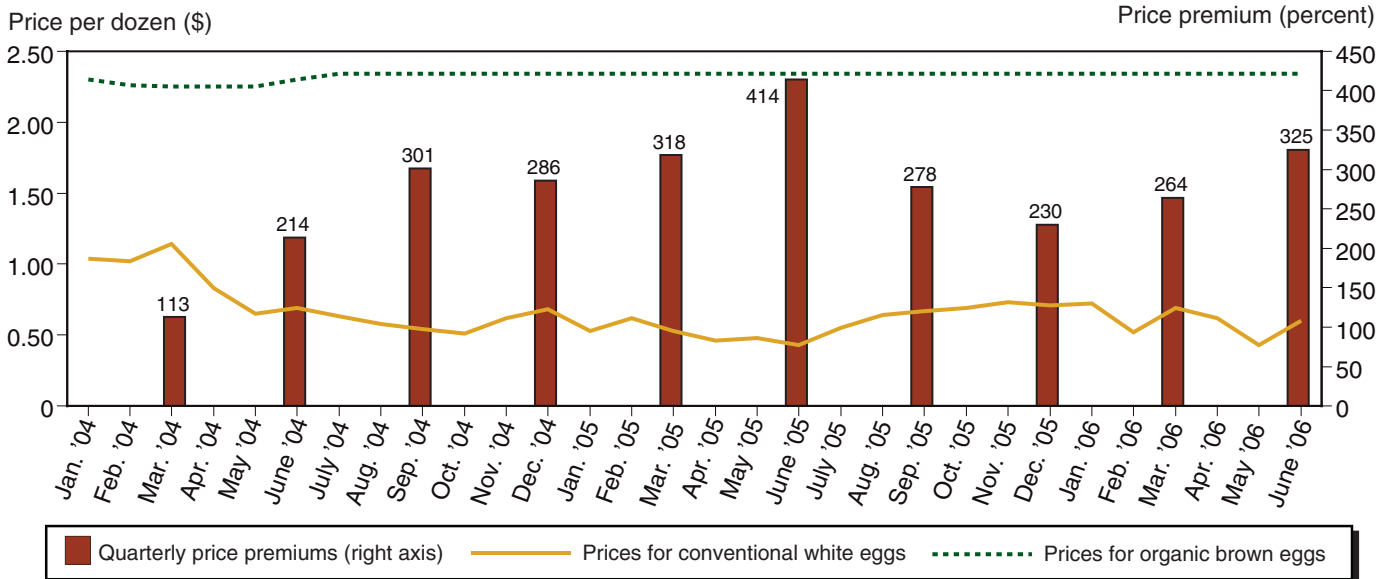


Note: Price premiums are shown as percentages. Quarterly price premiums are calculated by averaging monthly organic prices and conventional prices. Organic price premiums are calculated by subtracting the conventional price from the organic price and dividing the difference by the conventional price.

Source: USDA, Economic Research Service using data from USDA, AMS, 2005a-b.

Figure 4

**First receiver prices and quarterly premiums for organic large eggs, 2004-06**



Note: Price premiums are shown as percentages. Quarterly price premiums are calculated by averaging monthly organic prices and conventional prices. Organic price premiums are calculated by subtracting the conventional price from the organic price and dividing the difference by the conventional price.

Source: USDA, Economic Research Service using data from USDA, AMS, 2005b-c.

constant range of \$2.17 to \$2.50.<sup>7</sup> Average prices for conventional eggs, on the other hand, ranged from \$0.43 per dozen to an historical high of \$1.14 per dozen during the same period.

**A Maturing Industry Will Likely Face Many Changes**

Despite steady prices for organic poultry and eggs over the last few years, other evidence suggests that the organic poultry and egg sectors are in a state of flux created by rapid growth and will likely remain so until the industry and market matures. While the organic poultry market is less developed than the organic egg market, it is on the frontline of growth in the sector. Industry analysts expect annual retail sales of organic poultry to double those of organic eggs by the end of the decade. Organic broiler production has already undergone significant change over the last 5 years. Continued sharp growth in consumer demand will likely influence the production, processing, and marketing of organic poultry considerably. The continued expansion of organic poultry and egg products into mass market grocery stores, and the introduction of organic brands by conventional firms, also has strong potential to impact both the supply and prices for organic poultry and eggs. In the near term, however, price premiums will likely remain high as production struggles to catch up with fast-growing consumer demand.

<sup>7</sup>The constant prices for organic poultry and eggs are noteworthy. Price reports are provided by a large sample of the sector (18 companies for organic poultry and 14 companies for organic eggs). In addition, the price data were studied in detail and discussed at length with personnel from the reporting agency. This suggests that the price data accurately reflect the range of prices by the first receivers for organic poultry and eggs. One limitation of the organic price data, however, is that the prices may not represent what most companies receive because the prices are not weighted on the basis of quantities sold but are simple highs and lows. The *Market News Reports* also include a “mostly” range of prices; analysis of these prices showed similar average price patterns as those from the overall price range. See USDA, AMS website on *Market News Reports* for more information: [www.ams.usda.gov/marketnews.htm](http://www.ams.usda.gov/marketnews.htm)

## References

- ACNielsen. 2005. *Organic and Functional Foods Have Plenty of Room to Grow, According to New ACNielsen Global Study*. December. Available at <http://us.acnielsen.com/news/>
- Born, H. 2005. *Marketing Organic Grains: Marketing, Business, and Risk Management*. ATTRA Publication #CT154. Appropriate Technology Transfer for Rural Areas, National Center for Appropriate Technology. January. Available at <http://attra.ncat.org/attra-pub/marketingorganicgrains.html#ref11>
- Demerrit, L. 2004. "Organic Pathways," *[N]sight* 6(2). Bellevue, WA. Hartman Group, Inc.
- Eberly, B. 2005. Personal communication. Owner, Eberly Poultry. Stevens, PA.
- Glaser, L., B. Krissoff, A. Lengyel, and K. Sheehan. 1998. "Demand for Frozen Vegetables: A Comparison of Organic and Conventional Products," *Vegetables and Specialties Situation and Outlook*. VGS-276. U.S. Department of Agriculture, Economic Research Service. November.
- Glaser L., and G. Thompson. 2000. "Demand for Organic and Conventional Beverage Milk." Paper presented at the Western Agricultural Economics Association Annual Meetings.
- Greene, C., and L. Calvin. 1997. "'Organically Grown' Vegetables: U.S. Acreage and Markets Expand During the 1990s," *Vegetables and Specialties Situation and Outlook*. VGS-271. U.S. Department of Agriculture, Economic Research Service. May.
- Hartman Group. 2004. *Organic Food and Beverage Trends, 2004*. Bellevue, WA.
- Hermansen, J., K. Strudsholm, and K. Horsted. 2004. "Integration of Organic Animal Production into Land Use with Special Reference to Swine and Poultry," *Livestock Production Science* 90:11-26.
- Kremen, A., C. Greene, and J. Hanson, 2004. *Organic Produce, Price Premiums, and Eco-Labeling in U.S. Farmers' Markets*. Outlook Report No. VGS-301-01. U.S. Department of Agriculture, Economic Research Service. April. Available at [www.ers.usda.gov/publications/vgs/apr04/vgs30101/](http://www.ers.usda.gov/publications/vgs/apr04/vgs30101/)
- Levondoski, N. 2006. Personal communication. Organic Valley. La Farge, Wisconsin.
- MacDonald, J., J. Perry, M. Ahearn, D. Banker, W. Chambers, C. Dimitri, N. Key, K. Nelson, and L. Southard. 2004. *Contracts, Markets, and Prices: Organizing the Production and Use of Agricultural Commodities*. Agricultural Economic Report 837. U.S. Department of Agriculture, Economic Research Service. November. Available at [www.ers.usda.gov/publications/aer837/](http://www.ers.usda.gov/publications/aer837/)



- Milgrom, Paul R., Douglass C. North, and Barry R. Weingast. "The Role of Institutions in the Revival of Trade: The Law Merchant, Private Judges, and the Champagne Fairs," *Economics and Politics* 2, No. 1 (1990): 1 - 23.
- Nutrition Business Journal (NBJ). 2006. *U.S. Organic Food Sales (\$mil) 1997-2010e – Chart 22*. Penton Media, Inc.
- Nutrition Business Journal (NBJ). 2004. *NBJ's Organic Foods Report 2004*. Penton Media, Inc.
- Oberholtzer, L., C. Dimitri, and C. Greene. 2005. *Price Premiums Hold on as U.S. Organic Produce Market Expands*. VGS-308-01. U.S. Department of Agriculture, Economic Research Service. May. Available at [www.ers.usda.gov/publications/vgs/may05/vgs30801/vgs30801.pdf](http://www.ers.usda.gov/publications/vgs/may05/vgs30801/vgs30801.pdf)
- Onozaka, Y., D. Bunch, and D. Larson. 2006. "What Exactly Are They Paying For? Explaining the Price Premiums for Organic Fresh Produce," *Update: Agricultural and Resource Economics*. Vol 9 (6): 1-4.
- Perry, J., D. Banker, and R. Green. 1999. *Broiler Farms' Organization, Management, and Performance*. Agriculture Information Bulletin 748. U.S. Department of Agriculture, Economic Research Service. March. Available at [www.ers.usda.gov/publications/aib748/](http://www.ers.usda.gov/publications/aib748/)
- Ro, E., and D. Frechette. 2001. "The Effect of California Weather Conditions on Price Premia for Organically Grown Vegetables in the United States," *Journal of Food Distribution Research*. Vol. 32, No. 02, July 2001, pages 20-28.
- Sok, E., and L. Glaser. 2001. "Tracking Wholesale Prices for Organic Produce," *Agricultural Outlook* 285:7-8. U.S. Department of Agriculture, Economic Research Service. October. Available at [www.ers.usda.gov/publications/agoutlook/oct2001/ao285d.pdf](http://www.ers.usda.gov/publications/agoutlook/oct2001/ao285d.pdf)
- Sheats, M. 2006. Personal communication. U.S. Department of Agriculture, Agricultural Marketing Service.
- Streff, N., and T. Dobbs. 2004. "*Organic*" and "*Conventional*" *Grain and Soybean Prices in the Northern Great Plains and Upper Midwest: 1995 through 2003*. Econ Pamphlet 2004-1. South Dakota State University, Economics Department. June.
- U.S. Department of Agriculture, Agricultural Marketing Service (USDA, AMS). 2000. "National Organic Program, Final Rule," *Federal Register* 7CFR Pt 205. December 21.
- U.S. Department of Agriculture, Agricultural Marketing Service (USDA, AMS). 2003. *Organic Feed for Poultry and Livestock: Availability and Prices*. Agricultural Marketing Service, USDA. Available at [www.ams.usda.gov/nop/ProdHandlers/FeedStudyJune2003.pdf](http://www.ams.usda.gov/nop/ProdHandlers/FeedStudyJune2003.pdf)
- U.S. Department of Agriculture, Agricultural Marketing Service (USDA, AMS). 2005a. *Broilers/Fryers: Weekly Composite Weighted Average Prices for RTC B/F*. January 2004-June 2006.
- U.S. Department of Agriculture, Agricultural Marketing Service (USDA, AMS). 2005b. *Misc. Poultry: Weekly Certified Organic Poultry and Eggs*. January 2004-June 2006.

- U.S. Department of Agriculture, Agricultural Marketing Service (USDA, AMS). 2005c. *Shell Eggs: Weekly Combined Regional Shell Eggs*. January 2004-June 2006.
- U.S. Department of Agriculture, Agricultural Marketing Service (USDA, AMS). 2006. *USDA Weekly Retail Shell Egg Feature Activity*. October 2005-February 2006.
- U.S. Department of Agriculture, Economic Research Service (USDA, ERS). 2006a. *Background Statistics on U.S. Broiler Industry*. Available at [www.ers.usda.gov/news/broilercoverage.htm](http://www.ers.usda.gov/news/broilercoverage.htm)
- U.S. Department of Agriculture, Economic Research Service (USDA, ERS). 2006b. *Organic Agricultural Production in 2005*. Data Product: Table 5. Certified organic livestock. Data on cows, pigs, sheep, chickens, and other poultry, by State, 1997 and 2000-2005. Available at [www.ers.usda.gov/data/organic/](http://www.ers.usda.gov/data/organic/)
- U.S. Department of Agriculture, Economic Research Service (USDA, ERS). 2006c. *Poultry and Eggs: Background*. Available at [www.ers.usda.gov/briefing/poultry/background.htm](http://www.ers.usda.gov/briefing/poultry/background.htm)
- U.S. Department of Agriculture, National Agricultural Statistics Service (USDA, NASS). 2005. *Poultry Reports. Poultry: Production and Value—Supplement. 4.28.05* Available at <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1130>
- U.S. Department of Agriculture, Sustainable Agriculture Research and Education Program (SARE). 2005. *The New American Farmer: Profiles of Agricultural Innovation*. Valerie Burton (ed.), USDA, Cooperative State Research, Education, and Extension Service. Available at [www.sare.org/publications/naf2/](http://www.sare.org/publications/naf2/)
- Vandeman, A. 1998. "Price Premiums for Organic Fresh and Processed Foods," *Organic Farming and Marketing Research—New Partnerships and Priorities, Workshop Proceedings*. U.S. Department of Agriculture, Cooperative State Research, Education, and Extension Service. October.
- Walz, E. 2004. *Fourth National Organic Farmers' Survey: Sustaining Organic Farms in a Changing Organic Marketplace*. Organic Farming Research Foundation, Santa Cruz, CA. Available at [http://ofrf.org/publications/pubs/4thsurvey\\_results.pdf](http://ofrf.org/publications/pubs/4thsurvey_results.pdf)
- Whole Foods Market. 2005. *Nearly Two-Thirds of Americans Have Tried Organic Foods and Beverages*. Available at [www.wholefoodsmarket.com](http://www.wholefoodsmarket.com)