



EU-U.S. Beef Hormone Trade Dispute

by John Beghin
beghin@iastate.edu
515-294-5811

This article provides a brief historical perspective of the beef hormone dispute between the European Union (EU) and the United States and reviews the scientific evidence of health risks associated with products from animals that have been administered hormones.

HISTORICAL BACKGROUND

In the 1980s, the EU passed a set of regulations prohibiting the administration of some natural and synthetic growth hormones to farm animals. The same regulations also banned the marketing of domestic and imported meat derived from animals having received these types of hormones.

In 1996, the EU updated the regulations on hormones to prohibit the marketing or importing of meat products obtained from animals having received hormonal or thyrostatic action. Included were the six hormones that were the subject of a trade dispute between the EU and the United States (joined by Canada).

The six hormones at issue were oestradiol-17 β , progesterone, testosterone, which are all natural substances, and trenbolone acetate, zeranol, and melengestrol acetate (MGA), which are synthetic. The same regulations permitted EU-member states (only) to use the three natural hormones and other substances with hormonal action for medical and zootechnical reasons. Also, market meat from animals that had been fed these substances was permitted.

In 1996 the United States and Canada brought separate but similar

complaints to the World Trade Organization (WTO), claiming that the EU regulations were in contradiction with the principles of the WTO

An important question induced by the hormone trade dispute is: How safe are growth hormones? Based on more than 30 years of hormone use in the United States, there is no evidence of hormone residues in meat exceeding recommended standards, or of adverse human health effects coming from this process attribute of beef.

agreements. In the summer of 1997, a WTO panel assembled to resolve the U.S. and Canadian disputes concluded that the EU regulations were inconsistent with some articles of the Agreement on Sanitary and Phytosanitary (SPS) Measures, which was signed by all WTO members in Marrakech in 1994.

Specifically, the WTO panel concluded that the EU regulations were not based on risk assessment. The regulations used arbitrary distinctions in levels of sanitary protection considered appropriate, which resulted in trade restriction. Furthermore, the inconsistency of EU regulations with international standards was not justified. The panel recommended that the Dis-

pute Settlement Body ruling on the dispute request the EU to bring its regulations into conformity with the SPS agreement.

In September 1997, the EU initiated an appeal to the panel's conclusions as an appellant. The United States and Canada filed as appellees. The EU contended that the WTO panel erred in using the argument of inconsistency with international standards because the Agreement on SPS Measures does explicitly recognize a country's right to set its own standards.

The EU also disagreed with the panel on the burden of proof of the lack of health effects of growth hormones. It claimed that the panel had imposed its own assessment of the scientific evidence and refused the EU precautionary approach to health risk, especially for cancer risk related to the use of the hormone MGA. The EU argued that the SPS agreement allowed countries to exceed international standards and that harmonization to international standards was not implied by the agreement. Another argument cited by the EU was the risk arising from the lack of sound veterinary practice and that the EU should have the prerogative to assess if an exporting member has sufficient veterinary control measures to insure health protection in the EU.

As an appellee, the United States responded that the issue at stake was not the way the risk assessment had been conducted or how risk averse the EU could be with a precautionary stance. The issue was rather that the EU had imposed the trade ban without risk assessment. Furthermore, the United States

ISSN 1080-2193
http://www.card.iastate.edu/card/news/home.html

IN THIS ISSUE

EU-U.S. Beef Hormone Trade Dispute	1
GMOs in Europe: A Genetically Modified Ordeal?	3
Iowa's Agricultural Situation	4
Meet the Staff	6
Impacts of EU Reforms on Iowa Agriculture	8
CARD Publications	10

Iowa Ag Review is published by the Center for Agricultural and Rural Development (CARD). This publication presents summarized results that emphasize the Iowa implications of ongoing agricultural policy analysis, analysis of the near-term agricultural situation, and discussion of agricultural policies currently under consideration.

<i>Editor</i>	<i>Editorial Committee</i>
Bruce A. Babcock CARD Director	John Beghin Trade and Agricultural Policy Division Head
<i>Editorial Staff</i>	Keith Heffernan CARD Assistant Director
Katie Thomas Managing Editor	
Becky Olson Desktop Production	Phillip Kaus U.S. Analyst, FAPRI

Contact Betty Hempe for a free subscription, publication information, and address changes at: *Iowa Ag Review*, CARD Publications, Iowa State University, 578 Heady Hall, Ames, IA 50011-1070; Phone 515-294-7519; Fax 515-294-6336; E-mail CARD@card.iastate.edu; Web site www.card.iastate.edu

Iowa State University

Iowa State does not discriminate on the basis of race, color, age, religion, national origin, sexual orientation, sex, marital status, disability, or status as a U.S. Vietnam Era Veteran. Inquiries can be directed to the Director of Affirmative Action, 318 Beardshear Hall, (515) 294-7612.

argued that WTO agreements apply to all regulations in member countries, including past regulations. The appellate body reached a similar conclusion to the original ruling, although it corrected some conclusions of the original panel. According to the appellate body, the EU ban was inconsistent with WTO principles, specifically with the SPS agreement because it was not based on risk assessment.

Following the appellate body ruling, the EU filed for arbitration, which is a last-resort means to contest or soften a ruling. The arbitrator had consultations in early 1998 and eventually ruled that the reasonable period of time for the EU to comply with the ruling of the appellate body was 15 months from the date of the ruling (February 28, 1998). By then, the EU's regulations were to be consistent with the WTO Agreement on SPS Measures. The arbitrator rejected the latter request because it was not prompt and not a preferred way to eliminate the inconsistency with the SPS agreement relative to a simple withdrawal of the EU regulation.

At the end of April 1999, the EU announced it would not be able to comply on time with the arbitrator's ruling and would consider offering compensation. Now that the 15-month period has expired, the United States and Canada have been authorized to impose punitive tariffs on selected imports from the EU. In mid-July, the United States announced it would impose 100 percent duties on \$116.8 million of EU exports because of the EU's failure to comply with the WTO ruling.

How well does the WTO's dispute settlement mechanism work? First of all, resolution of the EU-U.S. trade dispute took a long time. Initiated in 1996, the beef dispute is still not effectively resolved, and it may still lead to a trade war between the United States and the EU.

Many economists and policy experts have criticized the aggres-

sive stance of the United States when it attempts to open foreign markets using section 301 of the 1974 U.S. trade law. Section 301 uses the mercantilist stick of threats of trade sanction to open foreign markets, and until recently, it has been considered a poor substitute for the legal process of the dispute settlement mechanism under the WTO. Now it appears that the United States and the EU may have reached the same "threat game." This is a real test for the WTO, which has to show it has teeth to the world trading community to keep its credibility. Assuming that the WTO survives this EU-U.S. trade crisis on hormone-fed beef, a bigger challenge awaits the WTO with trade involving genetically modified organisms.

PROTECTING CONSUMER INTEREST

Another issue raised by the hormone dispute is the choice of appropriate policy instrument to use to intervene in markets and protect consumer interest. Except for emergency situations, economists tend to dislike bans because they restrict consumers' quality choice. Some consumers simply do not care about the process attributes of products, that is, the way they have been produced. What policy options could be considered beyond a ban on hormone-fed animal products?

Labeling is a first option. Meat could be labeled indicating the process attributes of the meat, for example, the type of feed and drugs administered to the animal. Then the market forces would determine a price premium if enough consumers valued "hormone-free" meat products higher than meat coming from hormone-fed animals. Such a labeling scheme could be costly to implement because it is difficult to identify meat from animals that received growth hormones. The labeling scheme would require identity through the food chain, i.e., tracking the animals at the farm and monitoring the feeding process to

insure that no hormonal additive has been administered.

Another option would be to set standards limiting hormone residues in meat products to safe or precautionary levels and to impose a ban when the standards were violated. Such standards are already defined by an international institution, such as the Codex Commission, which is shielded from direct political influence. The latter instrument raises the issue of harmonization of standards. Some countries may not agree with international standards as was the case with the EU. Harmonization goes against the presumption of most economists that harmonization of standards among heterogeneous trade partners with

different tastes is not optimal. Hence, in practice, finding acceptable standards may be difficult.

An important question induced by the hormone trade dispute is: How safe are growth hormones? Based on more than 30 years of hormone use in the United States, there is no evidence of hormone residues in meat exceeding recommended standards, or of adverse human health effects coming from this process attribute of beef. For most hormones, the absence of health consequences hinges on good veterinary and animal husbandry practices in hormone use. These good practices imply that hormone residues are minimal and

correspond to naturally occurring hormone residues levels present in animal products. Hormones, both natural and synthetic, tend to have short half-lives, in the order of a few days. This means their concentration decreases by half within a few days and to nearly undetectable levels within a few weeks. Deviations from these good practices, such as overdose, late injection, or improper injection forms, can have adverse health consequences. Hormones do have health consequences and can be carcinogenic at high dosages. Hence, control and producer education on appropriate procedures appear to be essential components of a well-functioning system. ♦

GMOs in Europe: A Genetically Modified Ordeal?

by **Giancarlo Moschini**

moschini@iastate.edu
515-294-5761

Jay Corrigan

corrigan@iastate.edu
515-294-6740

One thing seems certain: we are now familiar with yet another acronym. GMO stands for genetically modified organism and designates a living entity (such as a bacterium, plant, or animal) whose genome has been

modified by recombinant DNA technology. The ability to alter the genetic makeup of organisms directly by such methods (i.e., transgenic) constitutes the hallmark of modern biotechnology and has ushered in a new era in agricultural research.

The promises of biotechnology in agriculture have at last begun to be realized, and in recent years an increasing stream of transgenic plants have been approved and marketed mostly (but not only) in the United States. Two such crops now well known to midwestern farmers are Roundup Ready (RR) soybeans and Bt corn. For RR crops, the relevant genetic material comes from a particular strain of *Agrobacterium* that, once introduced into the plant, confers resistance to glyphosate herbicide. For Bt crops, the genetic material of interest comes from another bacterium, *Bacillus thuringiensis*; once inserted into maize, it confers to the plant the ability to kill the European corn borer.

ACCEPTANCE OF GMOs

The GMOs, by and large, have been welcomed by U.S. agriculture

and by a number of other countries (notably Canada and Argentina). These new crops were virtually unknown before 1996 but have experienced breathtaking adoption rates. For example, in 1999 more than 50 percent of the soybean crop grown in the United States is genetically modified (at least 40 percent of U.S. corn and about 40 percent of U.S. cotton are also transgenic). For the next crop year it is estimated that 100 percent of the soybeans grown in Argentina will be herbicide resistant. But GMOs have struck a different cord in Europe, where they have met with numerous obstacles from consumers, businesses, policymakers, and regulators.

Safe food is at issue. Transferring genetic material from one organism to a completely different one is perceived by some as unnatural, and it is feared that the presence of a foreign genetic code may induce the transformed organism to produce unwanted toxins and allergens. The absence of risk from eating such food, it is claimed, has not been adequately documented.

Continued on page 7



Iowa's Agricultural Situation

by Phil Kaus

pkaus@card.card.iastate.edu

515-294-6175

Do you remember last October's Farm Disaster Relief Bill totaling \$5.6 billion, of which more than \$2 billion were allocated for single-year and multi-year disaster relief? According to U.S. Secretary of Agriculture Dan Glickman, the long-awaited checks are in the mail.

Producers will be paid 84.9 percent of qualifying single- or multi-year loss. Producers who claimed both single-year and multi-year losses will receive the larger amount of eligible losses but not both. Talks of another congressional aid package to producers fizzled in May as Congress decided to take a "wait and see" approach. There was agreement that assistance was needed, but some wanted more time to assess that need, especially given the fact that the October aid had not yet reached farmers.

CROPS

The average monthly price of corn received by Iowa producers has now been below \$2 per bushel for 11 months straight. The last run of below \$2 corn this decade was during the 1992/93 marketing year, when there was a run of five months below \$2. For the week ending May 30, the U.S. Department of Agriculture's (USDA) *Crop Progress* report suggested planting and crop conditions in Iowa were back to normal after fields received abundant moisture during April and early May. The latest U.S. production estimates from the USDA are for a 9.65 billion bushel crop. The USDA is projecting global ending stocks to increase. Use is also projected to increase, only not as fast. The world stocks-to-use ratio is projected to increase to 18.44 percent, see table on page 5. This indicates that any sustained recovery in price will be slow in coming unless production estimates decrease or demand increases.

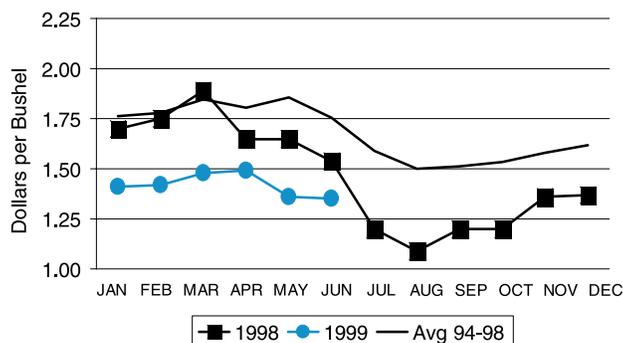
For soybeans, you have to go back to 1987 to find a similar run of monthly prices below \$5 per bushel. World production and use is projected to increase this year, but a drop in exports will increase ending stocks by about 3.0 million metric ton (mmt). This causes the stocks-to-use ratio to increase to 17.77 percent. USDA's *Crop Progress* report for the week ending July 12 reported 77 percent of the crop was rated good to excellent. This has led to recent central Iowa elevator bids in the \$3.75 per bushel range.

LIVESTOCK

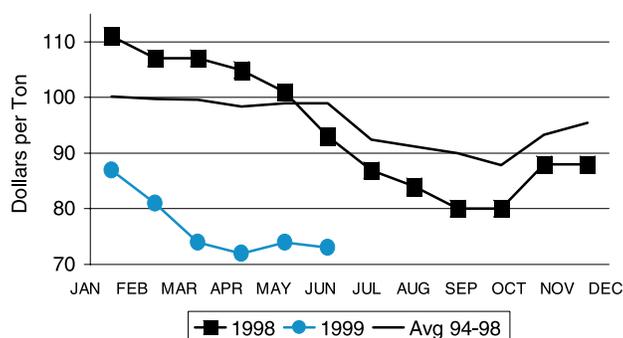
Pork prices recovered nicely in May and seemed to hold their own in June giving producers some optimism. However, this optimism was quickly squelched with the June 1 *Hogs and Pigs Report*. U.S. hog inventory was down 3 percent from June 1998, but 1 percent above March 1, 1999. Most analysts were expecting to see a 6 to 7 percent decline in inventory from June 1998. The liquidation the industry hoped for didn't

Continued on page 6

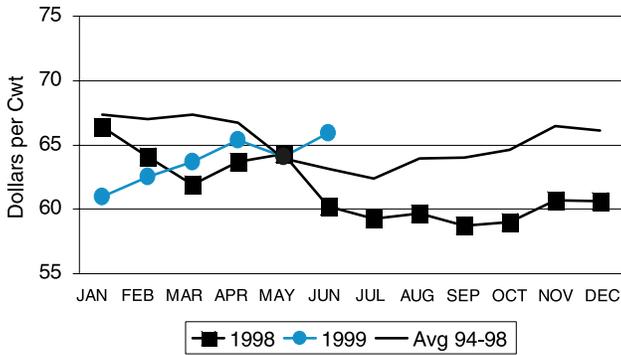
Iowa Oat Price



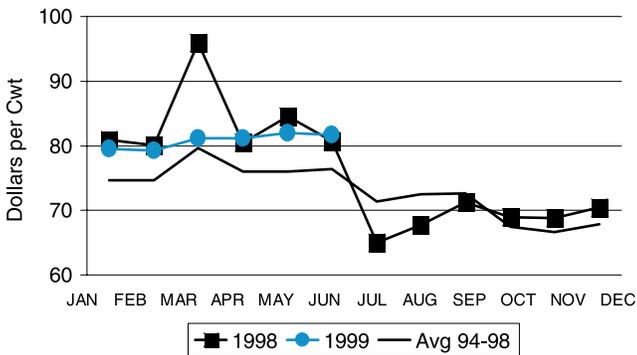
Iowa Alfalfa Hay Price



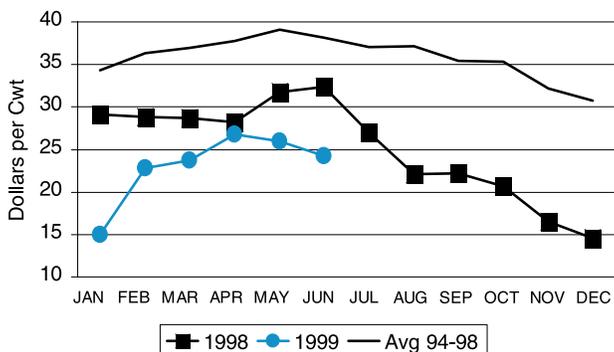
Iowa Steer and Heifer Price



Iowa Feeder Calf Price



Iowa Sow Price



Iowa Cash Receipts Jan.-March 1999

	1999	1998	1997
(Million Dollars)			
Crops	1,522	1,847	2,305
Livestock	1,142	1,246	1,286
Total	2,664	3,093	3,590

World Stocks-to-Use Ratios

	Crop Year		
	1999/00	1998/99	1997/98
May			
	Projection	Estimate	
(Percent)			
Corn	18.45	16.95	14.90
Soybeans	17.77	16.07	14.42
Wheat	20.00	23.11	23.81

Average Farm Prices Received by Iowa Farmers

	June*	May	April
	1999	1999	1998
(\$/Bushel)			
Corn	1.86	1.95	2.15
Soybeans	0.00	4.35	5.91
Oats	1.35	1.36	1.54
(\$/Ton)			
Alfalfa	73.00	74.00	93.00
All Hay	72.00	73.00	92.00
(\$/Cwt.)			
Steers & Heifers	65.90	64.10	60.20
Feeder Calves	81.70	82.00	80.80
Cows	37.70	38.20	37.00
Barrows & Gilts	34.60	38.90	44.90
Sows	24.20	26.00	32.40
Sheep†	33.20	34.50	24.70
Lambs†	74.60	61.00	88.00
(\$/Lb.)			
Turkeys	0.37	0.37	0.37
(\$/Dozen)			
Eggs	0.26	0.25	0.34
(\$/Cwt.)			
All Milk	12.20	12.90	13.60

*Mid-month

†estimate

Iowa's Ag. Situation *Continued from page 4*

materialize, consequently the bearish report indicates highs for the year may have been established. Third quarter prices should average between \$30 and \$35 per hundredweight and fourth quarter prices in the upper \$20 range per hundredweight.

Although slaughter numbers through May were 2 percent greater than last year, pork production has increased 3 percent because of higher slaughter weights, in part due to the low cost of feed ingredients. A moderate growth in demand and the recent gains in the export market have not been enough to offset the larger produc-

tion, which has resulted in noticeable increases in cold storage stocks. This could further depress prices in the fourth quarter when slaughter numbers are expected to again top the 2 million head per week level (see article on pp.0-10).

For the last week in June, Texas-Oklahoma Slaughter Steers were trading in the mid-\$60 per hundred-weight range. The mid-month price received by Iowa producers for steers and heifers was \$65.90 per hundred-weight. The latest cattle-on-feed report suggests placements had slowed compared to placements during the first quarter. First quarter placements were more than 20 percent above 1998 levels and slowed to less than 1 percent above in May.

Packer demand in May was strong, and it appears that feeders continued to market cattle aggressively through May. Dressed weights have declined as feeders moved showlist up in order to take advantage of the packer demand. Cattle feeders have been in the black since February and want to take advantage while they can in the face of large slaughter-ready cattle coming to market later this summer. Feed costs will continue to be low, but hopefully they will not be a signal to hold cattle back this summer. After the summer run, feeder and fed markets are expected to show some strength. ♦

Meet the Staff

Being on the cutting edge of agricultural public policy is one of things that Assistant Director Keith Heffernan enjoys most about his association with the Center for Agricultural and Rural Development (CARD).

"In general, there are a lot of changes and repositioning taking place in agriculture, which can be threatening to the industry. CARD has to keep ahead of the trends, and our work has to be relevant to current and future agriculture," Keith said.

The Midwest Feeds Consortium is one example of this forward-thinking approach. Keith worked with researchers at CARD and other entities to look at the feasibility of using soybean oil meal in fish rations. This research identified a new opportunity for U.S. soybean growers and processors. (For more information about the consortium's findings, please see the Spring 1999 issue of Iowa Ag Review, vol. 5, no. 2., available online at <http://www.card.iastate.edu>)

Keith is also working with AgSTATE (Agricultural Strategic Thinkers Acting Together Effectively)

to develop a strategic plan for Iowa agriculture. He and Department of Economics Chair John Miranowski facilitate the group, which is composed of people representing farm and commodity organizations, agribusinesses, state government, and ISU. CARD's role is to help identify resources for the group and to help AgSTATE to develop its vision for agriculture, Keith said.

A graduate of ISU, Keith has worked at CARD for almost 5 years. Prior to coming to CARD, he was the director of public affairs for the Iowa Farm Bureau Federation, worked on former governor Terry Brandstad's staff, and served as the executive director for the Iowa Corn Growers Association.

"My entire career has involved the development and implementation of agricultural policy, and before coming to CARD, most of the work I did was on the implementation side. At CARD, I have the opportunity to work more on the development side, and here we are able to do the necessary research to determine the best solution for the problems and challenges facing agriculture," he said.



Keith Heffernan

In addition to his responsibilities at CARD, Keith serves on the Terrace Hill Commission, the Farm Foundation Roundtable, and as board president of the FarmHouse Alumni Association. He is married to wife Alexa, and they have two children, Andy, an ISU graduate who lives and works in the Seattle, Wash., area, and Kim, a sophomore at the University of Northern Iowa. ♦

The environment is another concern. It is feared that the herbicide- and insect-resistant traits of new crops may spread to other plants in the wild; that genetically modified plants may be deleterious to other species (as in the recent debate on whether or not Bt corn harms the larval stage of monarch butterflies); and that specific genetic sequences conferring antibiotic resistance, which are used as “markers” in the genetic engineering process, may unwittingly aid the development of antibiotic resistant germs that could eventually harm humans.

An array of related issues are championed by particular segments of the European public. Some, for instance, perceive the whole idea of transferring genetic material between different organisms as unethical. Others question whether private research and development activities in a rapidly consolidating biotechnology sector is concentrating too much power in the hands of a very few multinational companies.

GMO REGULATION IN EUROPE

The novelty of GMOs has required the introduction of specific regulations in most countries. The United States has chosen to rely heavily on existing regulatory tools, with limited specific adaptations that entail a role for three separate federal agencies that enjoy widespread public confidence (U.S. Department of Agriculture, Environmental Protection Agency, and Food and Drug Administration). The European Union (EU), with a unique institutional setting, has chosen to rely more on new legislation.

The EU is not a country; it is the collection of 15 (rather different) countries united in the pursuit (not yet fully realized) of political and economic union. Regulatory activities in the EU are seen as the domain of politicians as much as bureaucrats. Both European bureaucrats

and politicians, it must be said, have a less-than-spotless record in such matters, as evidenced by the recent debacles associated with the British

Regulatory activities in the EU are seen as the domain of politicians as much as bureaucrats.

“mad cow” disease and this year’s Belgian dioxin scare. As a consequence, European consumers have developed skepticism about what they are told is safe to eat, and policymakers have read into that a need for more action on the regulatory front. Be that as it may, the legislative underpinning of the EU regulation of GMOs has two pillars: the 1990 Directive on the deliberate release of GMOs into the environment (Directive 90/220/EEC), and the 1997 legislation concerning novel foods (Regulation 258/97/EC).

A Complicated Process

The 1990 Directive constitutes the backbone of EU legislation concerning GMOs. Its purpose is to protect human health and the environment when releasing GMOs or placing them on the market. While it was intended to work somewhat like the U.S. system, this legislation also reflects the peculiar institutional structure of the EU. The complex regulatory procedure starts by requiring anyone wishing to release or market a GMO to “notify” the competent authority of any one EU country by supplying a host of documentation (including a risk assessment). This country (the rapporteur) should provide an initial evaluation within 90 days.

If the rapporteur supports the GMO, the dossier is forwarded to the European Commission (effectively, the executive government of the EU), which, after considerations of

its own, sends it to the competent authorities of each of the other EU countries. These countries have 60 days to evaluate and respond. If the Commission receives no objection, it informs the rapporteur country, which can then proceed by issuing the final written authorization.

If any one country objects, however, the matter must be resolved following a protocol specified in the Directive itself, which entails a role for the Commission, a role for a standing EU committee, and a role for the EU Council of Ministers (the chief EU decision body for legislative and political matters). Once a decision is made it is binding for all member countries. Still, under the authority of the Directive (article 16), individual countries can provisionally prohibit marketing of an approved GMO on their territory citing possible risk to human health and the environment.

Because the 1990 Directive did not apply to nonliving substances extracted from GMOs, the EU developed additional legislation to regulate food produced from GMOs. The 1997 Regulation identifies a “novel food” as one not previously consumed to a significant degree within the EU. Specifically, the 1997 Regulation applies to food containing or consisting of GMOs, and foods produced from but not containing GMOs. Because RR soybeans and Bt corn were already commercialized in the EU prior to the introduction of this Regulation (under the authority of the 1990 Directive), *ad hoc* legislation was required to extend the definition of “novel food” to products of these genetically modified crops as well (Regulation 1139/98).

The 1997 novel foods regulation establishes a mandatory EU-wide pre-market approval for all foods obtained from GMOs and it mandates “labeling” of novel foods and novel food ingredients. Specifically, consumers should be informed when a food contains GMOs. This labelling feature is highly controver-

sial and sets EU regulation apart from that of the United States (where no mandatory labeling of foods obtained from GMOs exists).

AN AMBIGUOUS PROCESS

While the EU regulatory structure for GMOs is ambitious in scope, it is fraught with ambiguities and loopholes. The timelines laid down in the Directive and the Regulation are often violated. Article 16 of the Directive has been abused by some countries to provide indefinite restrictions on EU-approved GMOs (Austria and Luxembourg). In certain instances, rapporteur countries have withheld issuing the final written authorization even after all approval hurdles had been cleared (France). As a result, only a handful of GMOs have so far been approved in the EU (they include Novartis' Bt corn, Monsanto's RR soybeans and Bt corn, and AgrEvo's LibertyLink corn, but exclude many other transformation events already approved and used in U.S. crop production).

With public concerns about GMOs munting, the system has effectively stalled. Indeed, no new GMO crop has been approved in the EU for more than a year; and at their June 1999 meeting, the EU council of (Environmental) Ministers appeared to agree on continuing this *de facto* moratorium on new approvals.

The strict labeling requirements are also somewhat empty at present. For example, it has yet not been decided what exactly it means for a food to be "free" of GMOs (i.e., critical threshold levels need to be agreed on), and testing methods to monitor a label's claims concerning GMOs have not been specified.

Efforts to integrate and streamline EU legislation on GMOs have been held back by the mass resignation of the Commission in March 1999. The new, recently appointed Commission, and they newly elected European Parliament (yet another EU institution, which shares legislative power with the Council), will have their hands full in sorting out

the problems under the watchful eyes of a somewhat confused, but increasingly dissatisfied, public. Given the situation, little substantial progress may be expected in the near future. For example, in light of the current *de facto* moratorium on using the 1990 Directive, approval of new GMO crops may be delayed as far out as 2002.

IMPLICATIONS FOR U.S. AGRICULTURE

In a world where talk of global markets is commonplace, it comes as no surprise that the European struggle to sort out its position on GMOs has implications for U.S. agriculture. Delay in approving new GMO crops in Europe means lower

... in light of the current *de facto* moratorium on using the 1999 Directive, approval of new GMO crops may be delayed as far out as 2002.

than expected revenue for U.S. life science multinationals that are at the forefront of new crop development. On the other hand, from the producer's point of view, this delay *per se* is penalizing EU farmers by hampering their competitive position (compared with U.S. and Argentine farmers).

The EU labeling laws, however, may hold perhaps the most serious implications for U.S. agriculture. Some believe that food labeled as containing GMOs will be less appealing to European consumers, and in fact many EU retailers have undertaken to supply what consumers apparently want: GMO-free food. Some food chains and retailers have gone further by promising to shun foods and food ingredients containing GMOs. If these trends are sustained, they would create incentives to develop handling and

processing systems characterized by "identity preservation."

This point was brought home suddenly a few months ago when major U.S. commodity handlers (including Archer Daniels Midland and Cargill) announced that they would not buy maize produced with GMO varieties not yet approved for importation in the EU. Keeping GMO crops and food separated from their traditional counterparts at every stage of the production and marketing chain will be a costly undertaking, which may eventually be reflected in a price "premium" for GMO-free commodities (or a "discount" for GMO commodities).

Given the trade implications of the EU regulation of GMOs, there is considerable concern in the United States, where the export sector is vital to the marketing of all major crops. Some U.S. officials are complaining loudly that the EU labeling law constitutes an inadmissible technical barrier to trade, and have threatened to take the matter up within the World Trade Organization. Whereas such an attitude is understandable, it oversimplifies the issues. It would appear that European consumers' concerns are genuine, and that the preoccupation of EU policymakers is to address those concerns (rather than to exploit them for protectionist purposes).

If a GMO trade war were to break out, it would dwarf the recent banana and beef-hormone confrontations between the EU and the United States. The June 1999 meeting of the G8 group of industrialized countries considered the matter, and bought some time by charging the Organization for Economic Cooperation and Development with providing advice on the global implications of GMO foods and crops. In the meantime, a serious campaign of scientifically based education aimed at consumers and the general public that emphasizes facts and eschews rhetoric is overdue on both sides of the Atlantic. ♦

Record Low Pork Prices in 1998: Transient or Permanent?

by **Jacinto Fabiosa**

jfabios@card.card.iastate.edu
515-294-6183

Phil Kaus

pkaus@card.card.iastate.edu
515-294-6175

The fourth quarter of 1998 was one that Iowa pork producers would prefer to forget. From favorable farm prices in the \$50 per hundredweight range just in the past year, prices fell below \$30 per hundredweight in the beginning of September, slid below \$20 per hundredweight by the middle of October, and declined even further, to below \$15 per hundredweight in December. This left many asking why and wondering whether low hog prices are here to stay. Let's look at how demand and supply factors affected the industry throughout 1998. Are the resulting impacts transient or permanent?

RETAIL DEMAND

Retail demand remained strong in 1998. James Mintert, a Kansas State University agricultural economist, suggests that retail demand in 1998 was actually 3 percent higher than the 1990 base year. This is actually the first increase in demand relative to the base year in a decade. FAPRI (Food and Agricultural Policy Research Institute) researchers showed that this higher overall demand was mostly due to retail activity in the fourth quarter (see Figure 1). There is reason to believe that, in the long run, the pork sector can continue to increase total demand at least at the rate of population growth, which is 0.85 percent annually.

Foreign demand played a small role in the 1998 story; nonetheless, the live animal and meat trade contributed to depressing prices slightly (.31 percent) because meat net exports were offset by live hog net imports flowing to U.S. packers

from Canada. Even with the Asian and Russian macroeconomic crises, U.S. pork exports in 1998 rose 17.1 percent over the previous year. Exports to Japan increased by 7 percent, while exports to the Russian Federation increased by 52.9 percent.

If retail demand was increasing, and the United States' net position in foreign trade was not a major factor, what drove farm prices to record lows? It is the supply side, or the live hog demand, that provides the answer.

PORK SUPPLY AND LIVE ANIMAL DEMAND

When measured by the sow level, the size of the pork industry in 1998 was not significantly larger than in 1990. There were 47,000 more sows in the 6.89 million inventory, a 0.68 percent increase. But the improvement in productivity through normal technological change has been very significant over the last decade, pushing an ever-larger supply into the market.

In 1998, a sow produced 2.1 more piglets compared to 1990, and slaughter-ready barrows and gilts weighed 15 pounds more in liveweight. The increase in pork supply attributable to normal

technological change exerts a downward pressure on price of approximately 15 percent every year, even if the industry is not expanding its sow level. Although this technological advancement gives U.S. pork its competitive advantage to expand traditional markets and penetrate new emerging markets, technology also compounds the impacts of adverse shocks in the world market and, thereby, can be an unwitting contributor to depressing farm prices.

The U.S. pork industry has experienced a structural transformation, with pork production becoming more commercialized. On the one hand, this has led to significant technological improvements and, on the other, may have brought about a degree of inflexibility in adjusting supply to unfavorable price movements.

In the 1950s, there were 20 pigs per pork operation compared to the current number of 534 pigs. Today, pork operations with 2,000 or more hogs represent only 6 percent of the operations, but account for 64 percent of the inventory (with operations that market 5,000 head or more accounting for 42 percent). Despite prices falling below \$30 per hundredweight as early as September 1998,

Figure 1. Retail Pork & Live Hog Demand Indices, Average 1998=100

sow levels in the fourth quarter of 1998 declined by only 1.19 percent compared to the third quarter, and were .248 percent higher than for the same period in 1997.

In commercial production, producers spread their more substantial fixed costs over a larger scale of production. They only need to cover variable costs to stay in production, and are not likely to exit the industry because they would face proportionately big losses in “sunk” (unrecoverable fixed) costs.

The longer planning horizon common among larger operations allows them to absorb adverse short-term price shocks. They can lock in better prices in the futures market and obtain the best, quality-based prices for their more standardized animals (avoiding weight and carcass variability penalties). A recent Iowa State University study by John Lawrence, Glen Grimes, and Marvin Hayenga reports that slightly less than half of the hogs sold in 1998 were marketed through some form of contract that provided producers with a degree of protection from unfavorable price movements.

PACKING PLANT CAPACITY

Record low hog prices in the last quarter of 1998 are attributable to a decrease in the demand for live hogs due to a significant decrease in packer capacity. The 10.4 percent increase in the hog supply in 1998 should have brought just a 15.08 percent decline in the farm price from the 1997 average of \$53 per hundredweight. Instead, prices fell by an alarming 35.5 percent. The culprit, as it turned out, was a rather sudden 8.29 percent drop in processing capacity—and the corresponding increases in cost of production at the packing plants. Accelerated plant operating and labor costs tended to depress farm prices.

Larger than normal numbers of live hogs were pushed onto the market at a time when several U.S. packing plants were closing or

reducing capacity because of environmental and food safety regulations (e.g., Apple Valley plant in Michigan and Dakota Pork plant in South Dakota closed; and Smithfield in North Carolina reduced capacity). Another compounding factor was an unexpected influx of Canadian hogs into U.S. packing plants.* Beginning the week of September 18, 1998, weekly slaughter exceeded the 2 million head capacity for all but three remaining weeks of the year, and weekend slaughter exceeded 160,000 head for all but two weekends.

WHAT LIES AHEAD FOR THE HOG INDUSTRY

The high quantity of stocks in cold storage suggests that consequences of the 1998 phenomenon may carry over into 1999. Prior to November 1998, cold storage stocks were being depleted. However, in recent months stocks have been increasing at an alarming pace. In the U.S. Department of Agriculture June 1999 Cold Storage report, frozen pork stocks were up 23 percent from last year, and stocks of frozen pork bellies were 82 percent above last year's levels.

Although decent prices were reported in April and May this year, they have since declined into the low \$30 per hundredweight range. However, prices are not expected to fall any lower than that of the last quarter of 1998. This is because of the 6 percent decline in breeding herd numbers (reported in the March and June 1999 Hogs and Pigs reports), returning growth in pork exports, and a decline in live hog imports.

The answer to the question posed at the beginning of this article is that both transient and perma-

nent demand and supply factors shaped the pork price outcome of 1998. With technological improvements and structural transformation continuing in the pork industry over the long term, appropriate processing capacity strategies might help in the short term.

In the long run, the pork industry needs to make adjustments to balance domestic supply and demand. Moreover, an aggressive export promotion effort offers the best option in permanently relieving the downward pressure on domestic prices. As the economies of the United States' traditional markets recover (e.g., Japan), and as emerging markets open (e.g., Taiwan's membership in World Trade Organization [WTO] and Russia), U.S. pork products should gain shares in traditional markets and access to emerging markets.

The United States should remain vigilant during the upcoming WTO negotiations in not allowing protectionist policies to emerge under the guise of phytosanitary considerations, while taking a proactive position regarding legitimate phytosanitary issues raised by its trading partners. ♦

*Labor problems in Canada caused the shutdown of one of their packing facilities, sending a sudden flow of live hogs to the United States.

Recent CARD Publications

BRIEFING PAPERS

Bruce Babcock, John Beghin, Samarendu Mohanty, Frank Fuller, Jacinto Fabiosa, Sudhir Chaudhary, Phillip Kaus, Fang Cheng, Chad Hart, Karen Kovarik. "Analysis of the Berlin Accord Reforms to the European Union's Common Agricultural Policy." CARD Briefing Paper Series 99-BP 24, June 1999.

FAPRI REPORTS

Bruce A. Babcock, John Beghin, Samarendu Mohanty, Frank Fuller, Sudhir Chaudhary, Jay Fabiosa, Karen Kovarik, Chad Hart, Cheng Fang, Phillip Kaus, Mamta Naik, CNFAP Staff, University of Missouri. "FAPRI 1999 U.S. Agricultural Outlook." FAPRI Staff Report Series FAPRI 1-99, January 1999.

Bruce A. Babcock, John Beghin, Samarendu Mohanty, Frank Fuller, Sudhir Chaudhary, Jay Fabiosa, Karen Kovarik, Chad Hart, Cheng Fang, Phillip Kaus, Mamta Naik, CNFAP Staff, University of Missouri. "FAPRI 1999 World Agricultural Outlook." FAPRI Staff Report Series FAPRI 2-99, January 1999.

WORKING PAPERS

Jacinto F. Fabiosa. "Institutional Impact of GATT: An Examination of Market Integration and Efficiency in the World Beef and Wheat Market under the GATT

Regime." CARD Working Paper Series 99-WP 218, April 1999.

Mark Metcalfe. "Location of Production and Endogenous Water Quality Regulation: A Look at the U.S. Hog Industry." CARD Working Paper Series 99-WP 219, 1999.

A. Ali Koc. "Acreage Allocation Model Estimation and Policy Evaluation for Major Crops in Turkey." CARD Working Paper Series 99-WP 220, May 1999.

Wesley Nimon, John C. Beghin. "Eco-Labels and International Trade in Textiles." CARD Working Paper Series 99-WP 221, May 1999.

Joseph A. Herriges, Catherine L. Kling, Christopher Azevedo. "Linking Revealed and Stated Preferences to Test External Validity." CARD Working Paper Series 99-WP 222, May 1999.

JOURNAL ARTICLES

John Beghin, Michel Potier. "Effects of Trade Liberalization on the Environment in the Manufacturing Sector." *The World Economy* 20(4)(July 1997):435-56.

John Beghin, David Roland-Holst, Dominique van der Mensbrugghe. "Trade and Pollution Linkages: Piecemeal Reform and Optimal Intervention." *Canadian Journal of Economics* 30(2)(May 1997):442-55.

John Beghin, Sebastien Dessus, David Roland-Holst, Dominique van der Mensbrugghe. "The Trade and Environment Nexus in Mexican Agriculture: A General Equilibrium Analysis." *Agricultural Economics* 17(1997):115-31.

John C. Beghin, A. Blake Brown, M. Hasyim Zaini. "Impact of Domestic Content Requirement on the U.S. Tobacco and Cigarette Industries." *Agricultural Economics* 15(1997):201-12.

Joseph A. Herriges, Catherine L. Kling. "The Performance of Nested Logit Models when Welfare Estimation Is the Goal." *American Journal of Agricultural Economics* 79(August 1997):792-802.

Mylene Kherallah, John Beghin. "Trade and Agricultural Policy." *American Journal of Agricultural Economics* 80(February 1998):15-29.

Catherine L. Kling, Jonathan Rubin. "Bankable Permits for the Control of Environmental Pollution." *Journal of Public Economics* 64(1997):101-15.

Dominique van der Mensbrugghe, David Roland-Holst, Sebastien Dessus, John Beghin. "The Interface Between Growth, Trade, Pollution and Natural Resource Use in Chile: Evidence from an Economywide Model." *Agricultural Economics* 19(1998):87-97.

Visit
CARD's
Web Site

WWW.
CARD.IASTATE.EDU

News and information about CARD and related issues

Information about the research divisions of CARD

Directory and e-mail links to CARD faculty and staff

Overviews of FAPRI and MATRIC research and projects

Information about upcoming conferences and events

Publications information

Iowa Ag Review

CARD
Iowa State University
578 Heady Hall
Ames, IA 50011-1070