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Will there be enough corn: Implications for related industries *

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(second in a series of three)

USDA supply-demand projections for the year ahead and trends through 2008 imply that the grain-livestock sector is entering an extended period of chronically tight corn supplies. While that is by no means certain, the following are some implications for related sectors if a chronically tight supply scenario occurs.

Industries supplying inputs to grain producers

Demand would be strong for inputs such as tractors; combines; and tillage, planting, spraying, and transport equipment. Strong demand for fertilizer, corn herbicides, and seed corn also could be anticipated, although demand for soybean seed and herbicides might weaken. Strong demand for rented and owned farmland also would be certain to occur.

- Increased co-product feed prices due to the high price of corn and soybean meal.

Several of these elements would likely continue in future years, enabling ethanol processors to bid rather strongly for corn. However, in years of major drought comparable to 1980, 1983, 1988, and 1995, profit margins for ethanol processors could become extremely small or even negative. In 1995-96, these conditions led to a 26 percent drop from a year earlier in U.S. processing of corn for ethanol.

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Handbook Update

For those of you subscribing to the *Ag Decision Maker Handbook*, the following update is included.

Revenue Insurance for Livestock Producers — B1-50 (3 pages)

Please add this file to your handbook and remove the out-of-date material.

Ethanol producers

Most ethanol processors have been able to adjust to this year's high corn prices because of:

- High gasoline prices that have increased the price of ethanol
- Extensive government incentives for renewable fuels production
- Limited domestic ethanol production relative to demand

* This information first appeared in *Feedstuffs*, Vol. 76, No. 30, July 26, 2004.

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Areas of uncertainty in future ethanol processing margins include prices for gasoline, ethanol, and co-product feeds. As supplies of Distiller's Dried Grains (DDG) increase, their prices likely will continue a downward trend relative to corn and soybean meal prices. For the next few years, ethanol processors likely will be able to bid aggressively for needed corn supplies unless the price of corn approaches the levels of 1995-96.

Foreign buyers

Foreign buyers as a group historically have treated the U.S. as a residual supplier of feed grains. When global supplies are tight because of foreign weather problems, as in the season just ending, they increase purchases from the U.S. When global supplies are more plentiful, foreign users historically have turned to non-U.S. supplies. Whether global corn supplies remain chronically tight in future years will depend heavily on Chinese corn production, and also on foreign grain producers' responses to higher grain prices.

Livestock and poultry industries

Projections imply that expanding demand for corn for ethanol processing will displace U.S. exports, but that is by no means certain. With the long-term tight supply scenario, a significant part of the displacement might be shifted to the U.S. livestock and poultry industries because of the ability of foreign buyers to bid aggressively for corn supplies.

In times of tight corn supplies, larger U.S. livestock and poultry producers may be able to bid more strongly for corn than smaller operations. Also, smaller livestock feeding operations typically are diversified grain and livestock farms. With high grain prices, they would tend to reduce livestock production or exit from the livestock business and rely primarily on grain for income. Hence, chronically tight feed supplies likely would accelerate the structural movement to fewer and larger livestock firms.

Grain elevators

In the past 25 years, grain elevator businesses across the Midwest have merged and consoli-

dated to become more efficient, and many have developed highly efficient train-load shipping sub-terminals. Train-load shipping involves large investments in facilities and equipment and great pressure to originate large quantities of grain to meet precise transportation commitments. With numerous existing ethanol processing plants and more under construction and in the planning stages, competition in grain origination is certain to intensify. Basis bids will become increasingly competitive and there will be increased pressure to develop unique new contracts with farmers. Some train-load shippers may be unable to efficiently use their facilities because of a greatly reduced supply of excess grain in their trade areas. These changes are likely to accelerate the closing of older, smaller elevators and/or shifting of these facilities to seasonal use for receiving, conditioning, and storing grain at harvest time. Merchandising margins are likely to be smaller than in recent years. Additional rail abandonments may occur on short-lines and branch rail lines. Some sub-terminals may find their primary role shifting from train-load shippers to storage points for ethanol plants and local feed mills.

The impact on Corn Belt elevators will vary from area to area, depending on closeness to new processing plants, trends in livestock and poultry production, and the extent of cropland shifts from soybeans to corn. A significant number of elevators will likely continue train-load grain shipments, although basis competition will intensify. Several new ethanol plants are at the planning stage in California, Oregon, Colorado, and Texas. If these plans materialize, corn will need to be shipped in from the Midwest. Plants in the pre-construction planning stage in these states may require as much as 160 to 200 million bushels of corn annually. This year's supply-demand situation and USDA's projections for the year ahead should be kept in mind when looking at potential market impacts.

The July 2004 projections indicate that even with record U.S. corn yields, increased corn processing of this amount would need to be accompanied by reductions either in exports or

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other domestic uses of corn because of limited corn supplies. Incentives for potential new plants in western and southwestern states include:

- Large dairy and beef cattle feeding operations that can use wet DDG year around
- Short distances to ship ethanol to large markets in Arizona, California, Colorado, and Texas
- Lower energy costs in some states
- Possible sales of CO₂ to nearby urban markets
- State subsidies for plant construction

If these plants materialize, some train loading elevators will be able to bid aggressively enough to attract large quantities of corn for shipment to out-of-state ethanol plants.

Concluding comments

USDA projections for the year ahead indicate the U.S. corn supply-demand balance is changing from one of chronic surplus production capacity to an extended period of tight supplies. If so, relatively high corn prices will be needed to allocate limited supplies among alternative users. When all of the new ethanol plants currently under construction are completed, about 24 new plants will have come into operation since late 2001. At least 54 other plants are in the planning stage and probably will come into operation in the next few years. Processor demand for corn for these new plants is likely to be inelastic, reflecting government incentives and a relatively inelastic motor fuel market. An inelastic demand requires large increases in price to reduce use when feedstock supplies are short.

Further complicating the longer-term supply and cost outlook for the livestock-feed sector is the widely held view that China is shifting from a large exporter of corn to an importer. If that happens, China would become a new market for U.S. corn. At the same time China's corn customers would likely turn to the U.S. for supplies. This possible scenario raises the question of whether U.S. corn acreage can be increased enough to meet anticipated new sources of

demand. Rapidly expanding ethanol-based demand for corn is almost certain to continue for several more years. However, corn users should note that considerable uncertainty still exists about China's future corn exports or imports. Eight years ago, USDA and many other analysts predicted China would be permanently out of the corn export market. A year later, the Chinese proved them wrong. If China does drop out of the corn export market, U.S. corn supplies are likely to be much tighter in the years ahead. The corn industry would then be faced with challenges of how to reverse the downward trend in U.S. planted cropland and how to increase corn plantings. That scenario also would raise questions about which users could bid most strongly for limited supplies: livestock and poultry feeders, corn processors, or foreign buyers?

The rapid increase in the number of ethanol plants across the Grain Belt is already having a significant strengthening effect on basis patterns and the cost of corn for livestock in areas close to plants, and is affecting competition in originating grain at elevators. In the last few years, for example, the corn basis under nearby futures in northwest Iowa has strengthened six to eight cents per bushel relative to north central Iowa. Several new ethanol plants in the region have been significant contributors to the stronger relative prices and basis. As more new plants are built, grain supplies for export in some areas of the Corn Belt will be significantly reduced. With current and planned ethanol plants, the potential availability of Iowa corn for export to other states and countries could be reduced by 18 to 25 percent from recent levels—unless corn acreage increases significantly. Similar or larger decreases in surplus grain available for export may occur in parts of other states.

Supply and demand responses to high prices may accelerate global grain production and slow the demand growth, tempering the tightness in U.S. supplies. Expanded foreign production would tend to reinforce the nearly quarter-century downtrend in U.S. corn exports.