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FOR IMMEDIATE RELEASE

Corn and Soybean Quality Affected by Late Season Drought

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Ames, Iowa -- The continued shortage of rainfall has increased the impact of weather on both yield and quality. Recent yield projections underscore the major effect of drought timing – greater on soybeans than on corn.

Soybeans will be small seeded. In some cases the seeds will be flat or oblong chips rather than developed beans. This happened a number of years ago in a dry year; the term shrinkled (shriveled and wrinkled) was coined to describe their appearance. The small seed size relates directly to loss in yield.

The 2003 soybeans are likely to be lower than average in protein. Protein is formed at the end of the growing season; conditions that shorten the growing season reduce protein levels. Normal protein for Iowa is about 35 percent, and for the U.S. as a whole about 35.5 percent. Expect one to two percentage points of protein less this year than last. This would mean more difficulty in producing 48 percent protein soybean meal, more concerns for export buyers and more millfeed (hulls) for a processor to market. Food quality soybeans with contract limits for protein and seed size may be most affected.

Oil content is likely to be more normal, around 19 percent (on a 13 percent moisture basis). However, oil yields per bushel may be less because flat and small soybeans are harder to extract completely, leaving more residual oil in the soybean meal. This will add to the reduced supply of oil from the lower grain yields.

Grain moisture levels will probably be low by harvest, but stressed grain does not store well. Soybeans above 12 to 13 percent moisture should be dried with aeration.

Where bean leaf beetles were prevalent, there could be considerable mottling and brown staining. Discoloration does not affect oil and meal yields, but food soybean users prefer normal-colored beans and have a higher percentage of cleanout from discolored lots. The impact of aphids on soybean color and quality is not known.

Corn quality was less affected by late season drought. Protein and other quality traits were determined earlier in the growing season. Drought reduced kernel fill, mostly with starch. Corn protein should be average to above average (8 percent or better). Test weights will be reduced somewhat by the kernel fill; but unless the drought was persistent through the whole season, corn test weights should still average 54 to 56 pounds per

bushel less than the 58 to 60 pounds per bushel of the past two years, but still acceptable for No. 2 corn.

Test weight is a good indicator of corn storability. Corn that is below 54 pounds per bushel after drying should not be stored into warm weather and should be dried to less than 14 percent moisture before storage of any duration. Lighter corn will also break more in handling. Be selective about what corn is placed in storage versus moved at harvest.

Extreme drought creates susceptibility to aflatoxin in corn. Particularly the more southern counties in Iowa are at risk. Aflatoxin is produced by the fungus, *aspergillus flavus*, that invades stress-weakened corn in the field. If nighttime low temperatures in August remained above 75 degrees for several days, the fungus was more likely to produce toxin. The earliest harvested, most stressed corn is at the highest risk. It is recommended to spot check 2003 corn in severely dry areas before feeding or marketing. The Iowa Grain Quality Initiative Web site, www.iowagrains.org, has additional information about aflatoxin and aflatoxin testing. Consult your veterinarian if you suspect a problem.