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Cornbelt Update

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- **Fair weather** allowed harvest progress to be made this week, but the market will be wondering just how much when it is announced Monday afternoon. Combines were slow to get into the field because soils had to dry as well as grain. With elevators removing 10 points of moisture or more from the corn, instead of 5 points or less, the volume of grain to be dried caused many elevators to observer shorter hours of dumping grain.
- **The most rapid weekly corn harvest rate** in recent years was 16% says IL Marketing Specialist Darrel Good, who says fast harvest paces usually occur in the middle of harvest. He says if 25% of the crop had been harvested by Nov. 1, another 16% this week would mean it will take 5 more weeks to complete the corn harvest. But he is quick to say that cannot be sustained, because of weather, storage, and shipping dynamics.
- **The most rapid weekly bean harvest rate** in recent years has been 20 to 24% of the crop says Darrel Good. And he says if 50% of the soybeans were harvested by Nov. 1, then it still appears to him that soybean harvest could still extend into December. Read his newsletter: http://www.farmdoc.illinois.edu/marketing/weekly/html/110209.html
- **The Nov. 10 USDA Crop Report** will be important in determining the impact of harvest conditions, says Good, who notes that crop diseases, low test weights, above average field losses, and quality deterioration have all become potential problems. And he says extreme weather in some areas may result in increased acreage that is abandoned.
- **Don't wait for corn to dry very much** says IL agronomist Emerson Nafziger. He says, "Expect on average for grain moisture to change very slowly in November. Expecting it to drop by as much as a point per week is optimistic." While the weather has been damp since maturity, upright ears have trapped water and cobs are holding onto water. He also says test weights will rise 2-4 lbs. when they are taken after the corn has dried down.
- **As corn weathers in the field,** expect yield losses says Nafziger. He says kernel weight will drop if mold is growing on and in kernels. Ears that are vertical will capture water and base kernels will begin to sprout in warmer temperatures. But he says two big threats are stalk failure that will allow ears to fall to the ground and a quick dry down in good weather that will weaken cobs to the point of losing kernels at the combine header.

- **Many elevators are reporting** low test weights on corn, and some loads have been discounted. Purdue agronomist Bob Nielsen says there is little research that correlates test weight with yield, and there is no indication that low test weight corn is an inferior livestock feed. Nielsen says test weight and moisture content go in opposite directions, since the dry matter in the corn is heavier than water. Drier corn has higher test weight.
- **Why is test weight low this year?** Purdue's Bob Nielsen says there are several reasons:
  1) Late season foliar disease and cool Sept. temperatures reduced photosynthetic activity.
  2) The October freeze damaged late developing and immature corn and stopped grain fill.
  3) Ear rots damaged kernels, causing light weight and chaffy grain with low test weight.
- **Do you harvest or wait for dry down?** IL agronomist Emerson Nafziger says if the crop is standing well, then waiting for the loss of a few more points of moisture may pay, even though it is risky. He says 200 bu. corn at $3.50 with drying and shrink valued at 4¢ per bushel will save you $8 per acre for each point of moisture that is removed naturally.
- **Harvest it or leave it for the winter?** Northern Cornbelt producers may weigh that thought, but WI specialists say the real question is: "Will the revenue lost by winter crop damage be less than the cost of drying this fall?" Their table demonstrates that a 20% to 37% yield loss that could be expected will not offset drying charges after harvest. More: http://ipcm.wisc.edu/LinkClick.aspx?fileticket=gCKodrdgZjM%3d&tabid=114&mid=669
- **The drying process will also help** maintain quality, according to MN ag engineer Bill Wilcke, who prefers the use of high temperature drying over low temp systems. He says, "Higher temperature dryers aren't likely to run hot enough to kill the molds, but they do slow mold growth by reducing the grain's moisture content. The agitation of the grain during high-temperature drying is also likely to rub off some kinds of molds."
- **On farm drying equipment** may require more than the normal amount of maintenance because it is being used around the clock. Ontario ag engineer Helmut Spieser suggests checking interior drier screens daily to prevent material buildup. He says that prevent airflow and that will reduce throughput. And that buildup also causes dryer fires.
- **What is your drying temperature?** Your initial thought is to raise the temperature on high moisture corn to maintain dryer capacity. But if corn is not increasing in test weight after it has passed through the dryer, then the drying temperature is too high. Spieser says drop the plenum temperature in increments to gain test weight. He says since every kernel has a different moisture content, each pass through the dryer will reduce the moisture by the same amount, but since each was starting at a different moisture they will not all be uniform after drying. Spieser says manage that with adequate aeration.
- **Here is Spieser's checklist** for successful grain drying practices:
  1) Higher drying temperatures usually result in lower grain quality
  2) Reduce drying temperatures to maintain or increase test weight
  3) Monitor immature corn for caramelization (if the milk line remained)
  4) Kernel to kernel moisture content will vary both before and after drying
  5) Storage aeration should bring wetter and drier kernels to nearly the same moisture
  6) Keep kernel temperatures below 120oF to 140oF
  7) Consider two-stage drying: 18% in the field and 15% in the bin
  8) Two stage drying will allow the drying season to proceed

- **New corn to be fed to livestock** may need to be tested for mycotoxins, which could cause critical health issues for cattle. Those come from a variety of molds, which have reduced test weight, and degraded both the quality and nutrient content. However, to test the grain, the critical issue is obtaining a sample that is representative of the corn destined to be fed. Small amounts can be taken periodically from a combine or grain card until a sufficient amount is collected. Have it tested within a week at a reputable laboratory.

- **Both molds and mycotoxins** in corn can cause herd health issues. MN livestock specialist Jim Linn said certain animals are more susceptible, "At heightened risk for mold and mycotoxin health and disease problems are young animals, breeding animals and lactating dairy cows, with swine and poultry species more susceptible to these problems than ruminants. Mycotoxins in large doses can cause acute health, reproduction and production problems. However, the most likely scenario with feeding of moldy and/or mycotoxin containing feeds is a higher incidence of general, chronic health problems, poor reproduction and overall poor animal growth or milk production."

- **But how much can be fed?** That varies according to age and specie of the animal says MO specialist Marcia Shannon, who first recommends buying clean grain for your livestock. "Thus, some moldy feed may be fed to beef cattle. Feeder cattle should be able to safely consume levels five to 10 times higher than swine and dairy. Thus, ruminants older than 4 months can withstand 10 to 20 ppm of vomitoxin. Signs of toxicity with vomitoxin/ deoxynivalenol (DON) are usually feed refusal or feed intake reduction. At concentrations of 5 to 10 ppm vomitoxin vomiting is observed in swine. Read her newsletter: http://ppp.missouri.edu/newsletters/ipcm/archives/v19n21/a4.pdf .

- **Once more around with corn molds.** Many farmers are continuing to find molds in corn which can be summarized. http://ipm.illinois.edu/bulletin/article.php?id=1244
  1) Diplodia ear rot (white) has been widespread, but does not produce mycotoxins.
  2) Giberella ear rot (pink) is also present and creates vomitoxin or DON and zearalenone.
  3) Fusarium is less prevalent (white starburst) and produces fumonisin toxins.
  4) Penicillium (blue-green) affects the kernel embryo and produces mycotoxin.
  5) Cladosporium (blue-eye mold) grows when kernels killed early and harvest is delayed.
  6) When combining moldy corn adjust for minimum damage and maximum cleaning.
  7) Moldy grain should be dried below 15% for long term storage.
  8) Moldy grain should always be tested for mycotoxins before being fed to animals.
  9) Adding a mycotoxin binder to feed can reduce the impact of toxins in digestion.
  10) DDGS can also contain mycotoxins, but are much more concentrated than in corn.

- **Crop insurance policies** protect you against grain quality problems, in case your grain is low grade, low test weight, excessive kernel damage, musty, or have mycotoxins that reduce its use as a livestock feed. MO economist Ray Massey recommends contacting your crop insurance agent for help in documenting your problem with samples collected by an adjustor. Those samples need to be obtained while the grain is still in the field. Read more: http://ppp.missouri.edu/newsletters/ipcm/archives/v19n21/a12.pdf

- **Regardless where you are in the Cornbelt**, you may have issues related to the late maturity of crops and challenges in harvesting because of inclement weather. MN Extension specialists have assembled a wide variety of resources from numerous universities to address those problems at: http://www.extension.umn.edu/lateharvest/

- **Crop specialists in MN,** where immature crops are a significant issue, are telling farmers to put their priority on soybeans, regardless of moisture levels. And they say store them with a high volume of air continuously for several months, and closely monitor any low temperature drying to ensure against further deterioration of soybean quality. They say the alternative is leaving them in the field and watching the pods shatter.

- **Combine adjustments** can reduce many problems in harvesting immature corn that has a low test weight with kernels prone to breakage. Many of those are provided by ag engineer Helmut Spieser of the Ontario Ministry of Agriculture. Read those at: http://www.omafra.gov.on.ca/english/crops/field/news/croppest/2009/18cpo09a1.htm
  1) Reduce cylinder speed and open concaves.
  2) Leave fines in the field, rather than in the bin where they enable mold growth
  3) Not much field drying occurs at this time of the year with cooler temperatures.

- **If frost killed soybeans before maturity**, they may still have a green color from the chlorophyll that did not degrade with maturity says MO's Bill Wiebold. And he says some of it will remain even through long term storage, coloring the oil when the soybeans are processed. He says frost damaged beans will store, but will have a higher moisture content and should be aerated. Over time they will shrink and become more oblong, and that should be considered when adjusting a combine to harvest immature soybeans.

- **The saga of soybean aphids** has a new chapter. Densities were impressive when they left soybean fields to find buckthorn, leading entomologists to expect significant egg-laying and a large 2010 population. But a survey in MI and IN found dead aphids, apparently the victims of a fungal disease. The aphid specialists believe that if that is the same in other parts of the Midwest, there may not be large numbers of aphids next spring.

- **Wet weather** may bolster winter annual weeds, but MO weed specialist Kevin Bradley says your inability to apply a fall herbicide will not be that important. He says, "Our research indicates that applications of residual herbicides made in the early spring can provide similar levels of winter annual weed control as applications of these same herbicides in the fall. In addition, our data indicate that early spring applications of residual herbicides provide better control of emerging summer annual weed seedlings than fall herbicide applications." He adds that many winter annuals germinate twice.

- **Unharvested seed** may soon prepare itself for planting due to the wet weather, if it is warm enough. MO specialist Bill Wiebold says it only takes temperatures over 50º for corn to sprout in the husk, damaging its quality. "During germination, seeds release enzymes that break down carbohydrates, proteins and fats. This breakdown releases free sugars, amino acids, and fatty acids. These simple compounds spoil easily in storage." Read more: http://ppp.missouri.edu/newsletters/ipcm/archives/v19n21/a5.pdf

- **October was the second wettest** and fifth coolest in Missouri, says state climatologist Pat Guinan. Looking ahead, he says, "The latest winter outlook for Missouri calls for above normal temperatures for the northwestern half of the state and equal chances for above, below and near normal temperatures for the rest of Missouri. Below normal precipitation is anticipated across far southeastern sections with equal chances of above, below and near normal precipitation for the rest of the state."

- **With wet weather** on both ends of the growing season, did corn rootworm create havoc? The preliminary results from corn root ratings collected by IL entomologists indicated that about all of the efforts to control rootworm were successful when compared against the untreated test plots. Read more: http://ipm.illinois.edu/bulletin/article.php?id=1242

- **What were some of the lessons** learned about controlling corn rootworms?
  1) Low densities could be the result of saturated soils or more acres planted with Bt corn.
  2) Wet weather did not seem to reduce the effectiveness of soil insecticides.
  3) Bt hybrids generally performed well, but not always better than soil insecticides.
  4) Bt hybrids combined with soil insecticides resulted in very low root damage.
  5) Data is still being tallied on which options provided the best economic sense.
  6) Planting Bt hybrids in 2010 is a field by field decision, based on 2009 scouting.

- **Your priority on harvesting** may sacrifice soil compaction, and that will be a long term problem says MO specialist Kent Shannon. He says shallow compaction of 12 inches or less can be corrected with tillage, but heavy loads on combines, trucks, or grain carts will compact soil to depths unreachable by tillage, and will remain wet late into next spring. Shannon says tire inflation pressure is one solution, and with selecting the proper tire, a 200 HP tractor may cause no more surface compaction than a 50 HP tractor.

- **Just because you had a good crop this year** does not mean you can save money by avoiding P & K application before the 2010 crop according to OH fertility specialist Robert Mullen. He said many producers skipped P & K when P cost $1,200 per ton and K was over $1,000. Mullen says P has dropped to under $400 per ton and K is about $500, but both will be needed in 2010, especially if they were skipped earlier this year. He says if input costs are still a budget problem for you, look at the results of a soil test.

- **Fall or spring,** your P & K application will produce the same yield. That is the opinion of MO soil fertility specialist Peter Scharf who also warns that if you did not get a P & K application prior to the 2009 crop, there is a potential for yield loss in your 2010 crop. But he says in the case of wheat, fall is the time when P nutrition makes the difference. Read more: http://ppp.missouri.edu/newsletters/ipcm/archives/v19n21/a11.pdf .

- **Consumer demand for pork is strong,** but just how strong is an enigma to MO economists Glenn Grimes and Ron Plain. They quote USDA as saying there has been a 4% increase in demand for Jan-Sept compared to last year. Grimes and Plain doubt that degree of strength, but say consumer demand is as strong or stronger than 2008. They also challenge USDA's way of measuring demand. They argue that credit should be given to the tonnage sold at lower prices, not just tonnage sold at regular prices.

- **Over 208,000 head** have been removed from the US dairy herd so far this year, but OH dairy specialist Cameron Thraen says another 200,000 needs to be removed, so the national herd can drop under 9 million head. He says, "That will put farmers in a more stable position of balancing the domestic use market with only a small international component." He says the current $12.20 cwt price should rise to $15.00 in 2010.

Cornbelt Update (formerly Extension Update) is e-mailed on Friday to selected subscribers and is also on the Internet at www.farmgate.uiuc.edu . E-mail comments to: Stu Ellis at shellis@illinois.edu .