

Preview of March 31st Prospective Planting Report

Daniel O'Brien, Ph.D. – Extension Agricultural Economist, K-State Research and Extension

March 25, 2010

On Wednesday, March 31st the USDA National Agricultural Statistics Service (NASS) will release the 2010 Prospective Plantings report. As the first official estimate of U.S. crop acreage in 2010, this report will provide an initial baseline or benchmark upon which 2010 crop production estimates will be based, and also against which any significant changes in 2010 crop acreage that could occur during the next 60-90 days will be measured. In anticipation of this report, this article provides historical background on crop acreage in the U.S. and Kansas as well as some perspective on what the 2010 Prospective Planting report may show.

Survey Procedure and Reliability

To interpret the U.S. crop acreage estimates in the upcoming report, it is important to understand how the acreage estimates are developed by the National Agricultural Statistics Service and their historic accuracy relative to final crop acreage.

The acreage estimates in the USDA NASS Prospective Plantings report have historically been based primarily on farmer surveys conducted during the first two (2) weeks in March. It is a probability-based survey, relying on a large representative sample of U.S. farm operators (i.e., with 86,000 farmers surveyed in March 2009). These farm operators are contacted by mail, internet, telephone, or personal interview to obtain information about their individual crop acreage plans for the 2010 crop year.

The historic reliability of these prospective planting acreage estimates are provided in Table 1 (with reference to the 2009 report). Over the last 20 years, final U.S. corn and winter wheat acreage figures have shown a tendency to be higher than Prospective Planting report estimates. Contrarily, final acreage for soybeans, grain sorghum and other spring wheat has shown a tendency to be below Prospective Plantings report estimates.

Corn and grain sorghum acreage estimates from USDA NASS Prospective Planting reports have been within 3.5% and 15.4%, respectively, of final acreage figures 90% of the time over the 1989-2008 time period. Final acreage for corn has been greater than the Prospective Plantings report estimate 13 times, and below 7 times, whereas final acreage for U.S. grain sorghum has been greater than the Prospective Plantings report estimate 8 times and below 12 times. Soybean acreage estimates from USDA NASS have been within 3.6% of final acreage figures 90% of the time over the 1989-2008 period, with final soybean acreage being greater than the Prospective Plantings report estimate 8 times, and below it 12 times.

Winter wheat and other spring wheat acreage estimates have been within 2.5% and 10.0%, respectively, of final acreage figures 90% of the time over the 1989-2008 period. Final winter and other spring wheat acreage has been greater than the Prospective Plantings report estimate 12 and 9 times, respectively. Conversely, final winter and other spring wheat acreage has been greater than the Prospective Plantings report estimate 8 and 11 times, respectively.

Table 1. Reliability of Prospective Plantings Planted Acreage Estimates in 2009

(Source: 2009 Prospective Plantings Report Released on March 31, 2009, USDA National Agricultural Statistics Service)

Crop	Root Mean Square Error	90% Confidence Interval	20-Year Record of Differences Between Forecast and Final Estimate				
			Thousand Acres (# Acres)			Number of Years	
			Average Difference	Smallest	Largest	Below Final	Above Final
			1,000 acres	1,000 ac.	1,000 ac.	Number	Number
Corn	2.0%	3.5%	1,119	32	3,844	7	13
Soybeans	2.1%	3.6%	1,173	25	2,582	12	8
Grain Sorghum	8.9%	15.4%	717	31	2,471	12	8
Spring Wheat	5.8%	10.0%	797	12	2,543	11	9
Winter Wheat	1.5%	2.5%	528	6	1,415	8	12
Durum Wheat	6.6%	11.5%	160	12	552	14	6
Upland Cotton	4.6%	7.9%	450	6	1,320	10	10
Barley	5.0%	8.7%	273	31	667	5	15
Oats	6.2%	10.7%	327	21	1,132	1	19

Corn Acreage

Planted acreage of U.S. corn has generally trended higher since 2003, with a one time “jump” to a high of 93.5 million acres in 2007, followed by 86.0 and 86.5 million planted acres in 2008 and 2009 respectively (Table 2). Estimates from the 2010 USDA Ag Outlook Forum and selected private industry sources range from 88.4 to 92.5 million acres, with an average estimate of nearly 90 million acres of corn planted in the U.S. in 2010 (Figure 1). This would be an increase of 4% or 3.5 million acres from 2009.

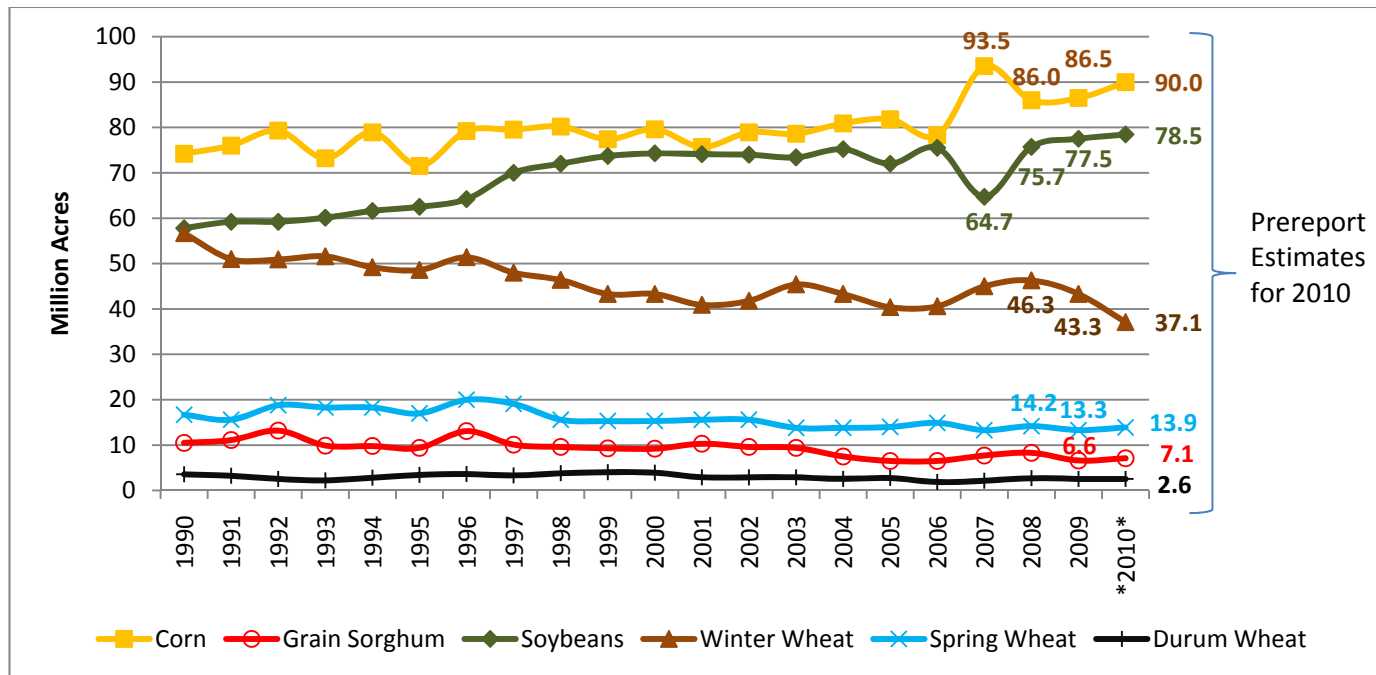
Table 2. U.S. Crop Planted & Harvested Acreage: 1990-2010 (million acres)

(Source: USDA National Agricultural Statistics Service)

Year	Corn		Soybeans		Grain Sorghum		Winter Wheat		Spring Wheat	
	Planted	Harvested	Planted	Harvested	Planted	Harvested	Planted	Harvested	Planted	Harvested
1990	74.2	67.0	57.8	56.5	10.5	9.1	56.7	49.7	16.7	15.9
1991	76.0	68.8	59.2	58.0	11.1	9.9	51.0	39.5	15.6	15.1
1992	79.3	72.1	59.2	58.2	13.2	12.1	50.9	42.1	18.8	18.1
1993	73.2	62.9	60.1	57.3	9.9	8.9	51.6	43.8	18.3	16.8
1994	78.9	72.5	61.6	60.8	9.8	8.9	49.2	41.4	18.3	17.7
1995	71.5	65.2	62.5	61.5	9.4	8.3	48.6	41.0	17.0	16.6
1996	79.2	72.6	64.2	63.3	13.1	11.8	51.4	39.6	20.0	19.7
1997	79.5	72.7	70.0	69.1	10.1	9.2	48.0	41.3	19.1	18.3
1998	80.2	72.6	72.0	70.4	9.6	7.7	46.4	40.1	15.6	15.1
1999	77.4	70.5	73.7	72.4	9.3	8.5	43.3	35.4	15.3	14.8
2000	79.6	72.4	74.3	72.4	9.2	7.7	43.3	35.0	15.3	14.5
2001	75.7	68.8	74.1	73.0	10.3	8.6	40.9	31.2	15.6	14.5
2002	78.9	69.3	74.0	72.5	9.6	7.1	41.8	29.7	15.6	13.4
2003	78.6	70.9	73.4	72.5	9.4	7.8	45.4	36.8	13.8	13.4
2004	80.9	73.6	75.2	74.0	7.5	6.5	43.3	34.4	13.8	13.2
2005	81.8	75.1	72.0	71.3	6.5	5.7	40.4	33.8	14.0	13.6
2006	78.3	70.6	75.5	74.6	6.5	4.9	40.6	31.1	14.9	13.9
2007	93.5	86.5	64.7	64.1	7.7	6.8	45.0	35.9	13.3	12.9
2008	86.0	78.6	75.7	74.7	8.3	7.3	46.3	39.6	14.2	13.5
2009	86.5	79.6	77.5	76.4	6.6	5.5	43.3	34.5	13.3	13.0
2010							37.1			

Figure 1. U.S. Planted Acreage for Major Crops: 1990-2009 (Prereport Estimates for 2010)

(Source: USDA National Agricultural Statistics Service & Private Estimates)



Grain Sorghum Acreage

Planted acreage of U.S. grain sorghum has generally trended sideways to lower since 2007, with planted acreage of 7.7, 8.3 and 6.6 million acres over the 2007-2009 period. Because of decreased winter wheat acreage in the western Corn Belt, it is estimated that U.S. grain sorghum area will increase by approximately 500,000 acres in 2010, up to 7.1 million.

Soybean Acreage

Planted acreage of U.S. soybeans has generally trended sideways to slightly higher since 2003. A one-time major “drop” to a low of 64.7 million acres in 2007 (not coincidentally, the same year of the major increase in corn planted acreage) was followed by U.S. soybean planted acreage of 75.7 and 77.5 million acres in 2008 and 2009, respectively. Preliminary estimates from the USDA and private industry sources range from 77.0 to 80.0 million acres, with an average estimate of approximately 78.5 million acres of corn planted in the U.S. in 2010 (i.e., an increase of 1% and 1.0 million acres from 2009).

Other Spring Wheat Acreage

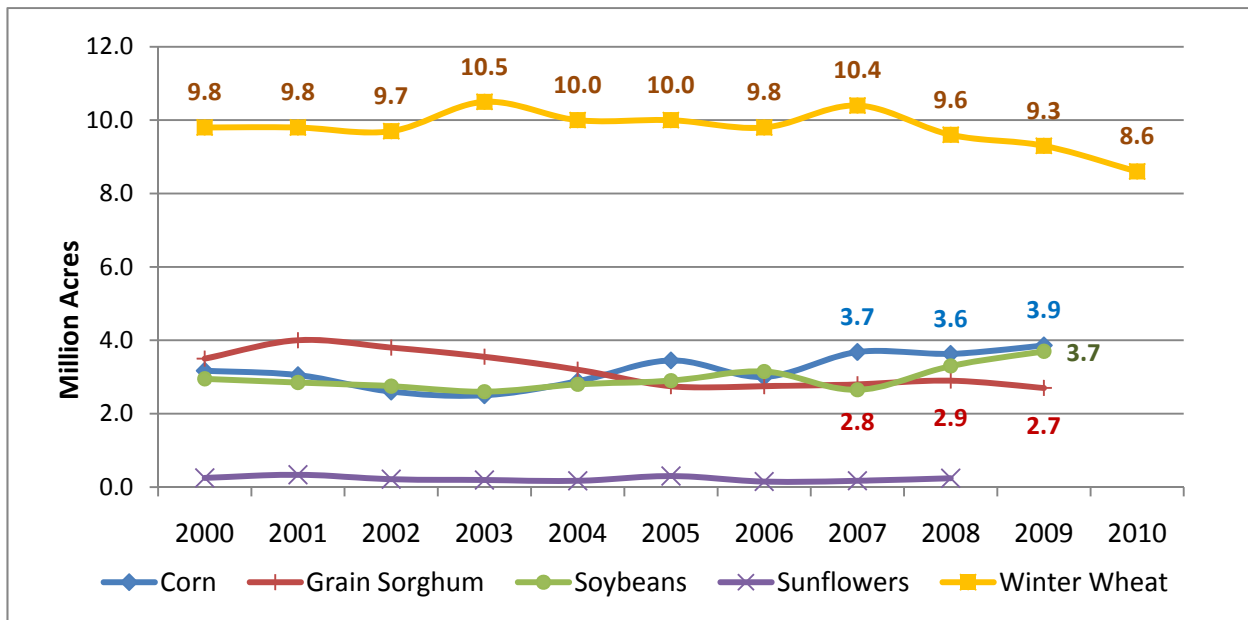
Planted acreage of U.S. winter wheat has generally trended lower on a long term basis since 1990, but has both risen (2006 through 2008) and fallen (from 2008 to 2010). It is assumed here that both winter wheat and durum wheat planted acreage are unchanged from the January 12, 2010 USDA NASS Winter Wheat Seedings Report, at 37.097 and 2.554 million acres, respectively. Preliminary USDA and private estimates range from 12.5 to 15.3 million acres, with an average estimate of approximately 13.9 million acres of other spring wheat planted in the U.S. in 2010. If achieved, this would be an increase of 4.5% or 0.6 million acres from 2009.

Kansas Crop Acreage for 2000-2009

Planted acreage for winter wheat, corn, grain sorghum, soybeans and sunflowers in Kansas has been relatively stable since 2000 (Figure 2). However, recent declines in winter wheat planted acreage since 2007 (from 10.4 million down to 8.6 million in fall 2009 for harvest in 2010) have been offset by increases in other crops, especially soybeans. If Kansas crop acreage in 2010 follows estimated national trends, then there would be 4.06 million acres of corn (a 4% increase), 2.9 million acres of grain sorghum (a 7.5% increase), and 3.75 million acres of soybeans planted this year (a 1% increase).

Figure 2. Kansas Planted Crop Acres: 2000 – 2010

(Source: USDA National Agricultural Statistics Service)

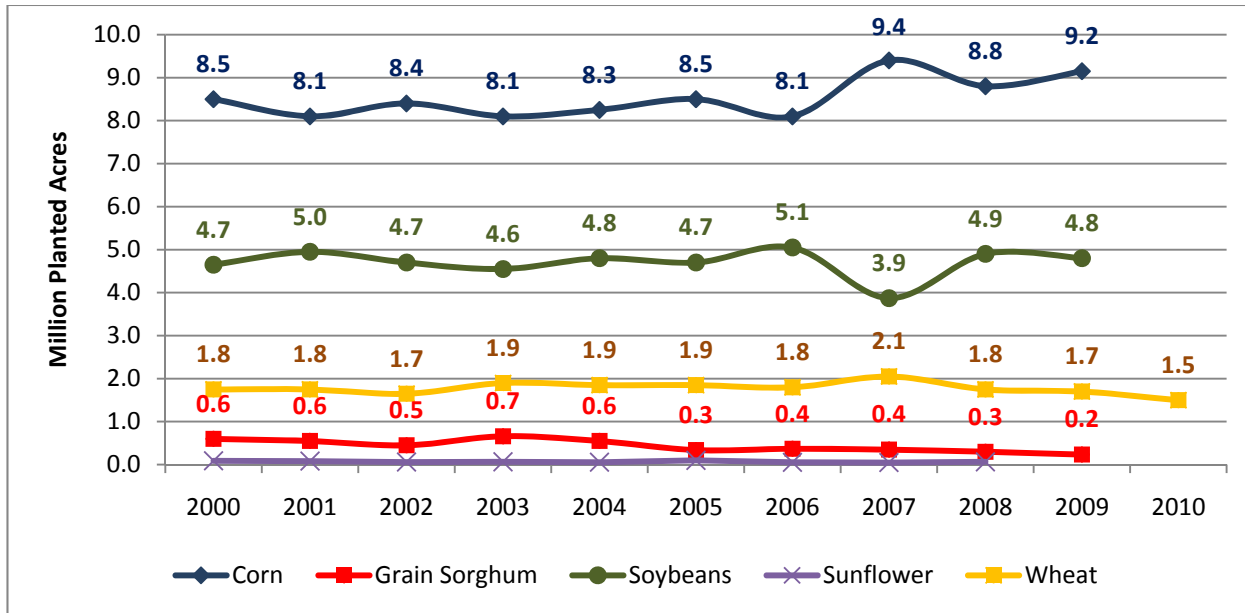


Nebraska Crop Acreage for 2000-2009

Planted acreage for corn in Nebraska has increased since 2006, while acreage for other major crops (soybeans, wheat, and grain sorghum) have declined (Figure 3). Corn area averaged 8.3 million acres during the 2000-2006 period, with lows of 8.1 million in 2001 and 2006. However, Nebraska planted corn acreage has increased to 9.4, 8.8 and 9.2 million acres in 2007, 2008 and 2009, respectively. Soybean acreage has maintained at 4.9 and 4.8 million acres in 2008 and 2009, while other crops have declined in acreage. If Nebraska crop acreage in 2010 follows estimated national trends, then there would be 9.6 million acres of corn (a 4% increase), 2.5 million acres of grain sorghum (a 7.5% increase), and 4.85 million acres of soybeans planted this year (a 1% increase).

Figure 3. Nebraska Planted Crop Acres: 2000 – 2010

(Source: USDA National Agricultural Statistics Service)

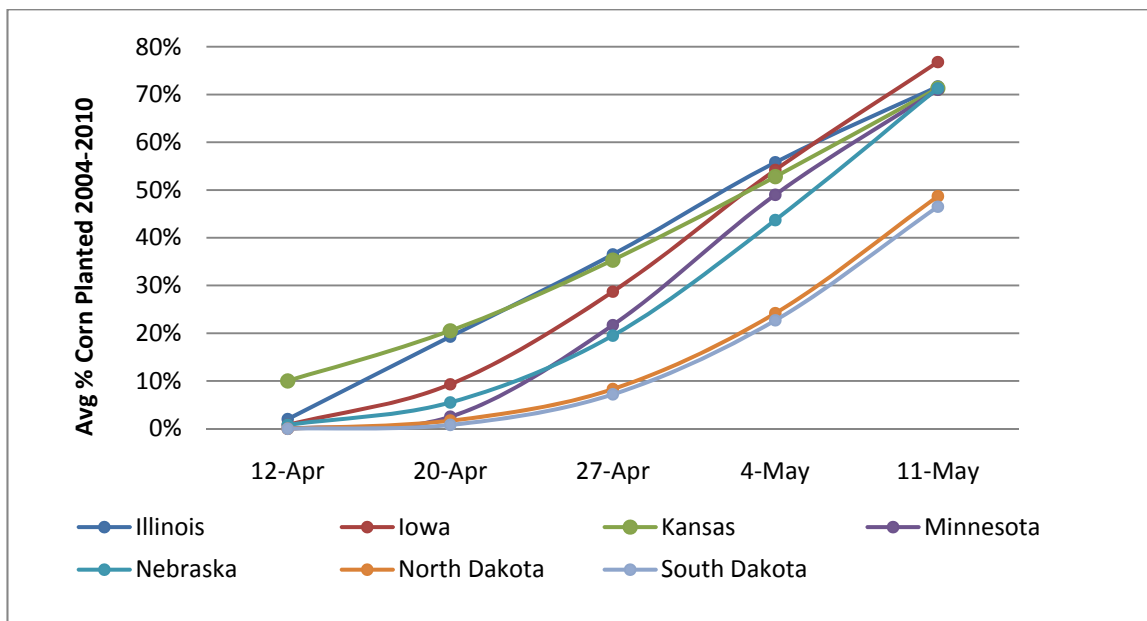


Possible Impact of Wet Field Conditions on Spring Planting

There are several factors that could affect U.S. farmers planting spring 2010 planting decisions which may or may not be reflected in the March 31, 2010 USDA NASS Prospective Planting Report. Prospects for wet soil conditions and subsequent planting delays could lead to reductions in U.S. corn acreage, with acreage shifting over to soybeans. Figure 4 shows the average rate of planting progress for U.S. corn in key Corn Belt states over the 2004-2009 period. The U.S. corn market will likely be all that much more attentive to field conditions, field work and planting progress for corn after April 1st.

Figure 4. U.S. Corn Planting Progress by Week during the 2004-2009 Period

Source: USDA National Agricultural Statistics Service



Wet field conditions and flooding in parts of North Dakota and western Minnesota may eventually affect preparations for planting of hard red spring wheat in 2010. North Dakota Extension wheat production recommendations for hard red spring wheat are to plant “as early as possible”, preferably prior to mid-May:

“Plant as early as possible — as soon as a satisfactory seedbed can be prepared. Historically a 1% per day reduction in yield can be expected for each day planting is delayed after mid May. At a 50 bu/acre yield goal this is a half bushel per day. The main factor contributing to yield reduction due to delayed seeding is the potential of higher temperatures during the 4.0 to 5.5 leaf stage. This is the growth stage when the number of spikelets on the head is determined. The number of spikelets per spike decreases whenever the maximum day temperatures are above 63 F during this specific growth stage. In years when temperatures in June and early July do not exceed 80° F, yield reductions due to late planting will not be as great.”

Source: <http://www.ag.ndsu.edu/pubs/plantsci/smgrains/a1050-3.htm>

According to this information, concerns about spring wheat seeding seem premature at this point in time, but bear watching in the next 30-45 days.

Conclusion

The March 31st Prospective Plantings Report will provide a critical benchmark for U.S. crop acreage in 2010. These initial acreage estimates from the USDA National Agricultural Statistics Service are subject to change given possible weather impacts on planting and changes in farmer’s price expectations. An important question to address in the 2010 Prospective Planting Report will be whether strong soybean market prices thus far in the 2009/10 marketing year have effected farmer’s soybean versus corn planting decisions. The market will also be attentive the impact of reduced winter wheat acres in 2010, and which other competitive crops’ acreage will increase as a result.