



**The Chem Gro Crop Watch, Issue #4, 5/13/10**

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**We have come to face the inevitable = REPLANT.** I have been putting off this agronomy letter for the last week or so in hopes for a slight chance of a miracle from Mother Nature herself. However, after last night's onslaught of pounding rains that keep maintaining our soils of 100% water saturation; it is inevitable that everyone will have some replant to do. The biggest unanswered questions are "how much?" and "how do we go about doing it?" The last twelve years that I have spent in agronomy roles in Illinois have unfortunately given me a lot of experience in replanting corn and soybeans in weather such as this. Here are some of my learning curves that may help you as we get closer to replant.

**Do I keep the corn that I have, or do I tear it up and start over?** The answer to this question is mostly determined by the calendar date that a person can actually replant on, and what the final stand is at that time. For corn replanting, I am "predicting" that it will be all of May 25-30<sup>th</sup> by time the ponds in our fields finally dry out to the point that replanting can begin (this is assuming that the rain does come to a stop, although the 10 day forecast is saying otherwise). Below

is a chart from a Purdue handbook that I use quite regularly to help in making these replanting decisions for corn. Although this chart in my mind needs to be re-done to show the genetic gain and stress tolerance of today's corn hybrids (the chart was made in 1994); it serves as a good starting point in making replant decisions.

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**Expected Grain Yield Due to Various Planting Dates and Final Plant Populations**

Planting date	Plant population (final) per acre in thousands													
	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	Percent of optimum yield													
10-Apr	62	68	73	78	82	85	88	91	92	93	94	94	93	91
15-Apr	65	71	76	81	85	88	91	94	95	96	97	96	96	94
20-Apr	67	73	78	83	87	90	93	96	97	98	99	98	98	96
25-Apr	68	74	79	84	88	92	94	97	98	99	100	100	99	97
30-Apr	68	74	79	84	88	92	95	97	99	100	100	100	99	97
5-May	67	73	79	83	87	91	94	96	98	99	99	99	98	97
10-May	65	71	77	82	86	89	92	94	96	97	97	97	96	95
15-May	63	69	74	79	83	87	89	92	93	94	95	95	94	92
20-May	59	65	71	75	80	83	86	88	90	91	91	91	90	89
25-May	55	61	66	71	75	79	81	84	85	86	87	87	86	84
30-May	49	55	61	65	70	73	76	78	80	81	81	81	80	79

Source: Nafziger. 1994. J. Prod. Ag 7:59-62

Note: The highlighted area represents the optimum ranges (98 to 100% yield) of plant populations and planting dates for productivity levels greater than about 125 bushels per acre. Optimum plant populations for soils with historical yields less than about 100 bushels per acre will likely not respond to final plant populations greater than about 24,000 plants per acre. (RL Nielsen, Purdue Agronomy)

As you look at the chart, you will notice that a 32,000 final stand of corn planted on May 30<sup>th</sup> will have the same yield potential as a 16,000 final stand of corn planted on April 15<sup>th</sup> of 81% yield potential. Then, to confuse the issue a bit more is the argument of fixed ear vs. flex ear corn at that population. My opinion is that today's "flex" eared hybrids are not like the flex eared hybrids that we had 15-20 years ago. Although some current hybrids are considered to be

flex in nature, meaning they will elongate the cob size to put on more kernels under low final stands; the amount of flex is very limited in comparison to hybrids from 15-20 years ago. Today's corn hybrids are bred for not blanking out under stress conditions with high final stands (the large benefit to fixed eared hybrids). I believe most hybrids have this fixed eared trait somewhat bred into them therefore will not flex greatly in reduced final stands.

**Do I tear up and start over, or do I spot in the bad areas?** Although it is easier to tear everything up and start over, I believe when ground conditions are dry enough to replant with the later calendar date that it will be financially worth your while to walk your fields and flag off the good areas from the bad instead of tearing up the entire field. At this point in time (assuming May 25<sup>th</sup>-30<sup>th</sup>), I would be using a final stand of 16-18,000 plants per acre as the breaking point. Anything less than that I would tear up or spot in with a fresh new planting rate.

- Hybrid selection.

- Traits: I would **HIGHLY** consider using corn hybrids with the Bt traits (YieldGard or Herculex 1) for European corn borer. European corn borer moths love delayed plantings of immature corn to lay their second generation eggs into. Prior to Bt corn being on the market, I have seen replanted corn having 4-5 corn borers per plant as these moths target these lush green islands of spotted in replanted corn. These replanted areas are subject to high amounts of yield loss from corn borer larvae tunneling into the stalks, ear shanks, and grain damage.

- Liberty Link corn replanted into Roundup Ready. I know of several people who are planning on using LL corn as the replant corn into their fields of RR corn, and then spraying Ignite (Liberty) to kill off any thin areas of RR corn. This system works, HOWEVER, the original stand of RR corn must be at least V4-V5 for it to work. Ignite (Liberty) will not kill corn without the Liberty trait until the growing point comes out of the ground (V4-V5). If it is sprayed earlier than this, it will flash burn the non-Liberty trait corn to the ground, but will then begin to re-grow and establish itself again. I have learned this lesson the HARD WAY!!!

- Maturity: If it gets to be the end of May, I would be planting corn that falls into 107-110 day maturity. Hybrids fuller season than 110 day will be hard pressed to get much natural dry down in the fall. Hybrids much earlier than 107 day are not very well adapted to our geography. They tend to be much more disease and heat stress susceptible as they are bred for the northern states. I would advise using hybrids commonly grown for our area that fit within the 107-110 day maturity range.

**June corn replanting?** I know it can be done with corn maturities earlier than 107 day; however, I am just not a fan of it. First, you need to be lucky enough that your replant corn makes it to maturity before Jack Frost nips at it. Second, there is usually such a great moisture variance within the grain that makes it about impossible to accurately dry the corn at the bins. Situations like this, it is very common to be shelling corn at 18% moisture from the original planting, then shelling into the replanted corn that is still 30% + in moisture. This usually creates more headaches than what it is worth. If it gets to be June, and there are large holes in the corn fields that need to be replanted, I would much rather take a no-till drill and plant soybeans into these drowned out areas. As much rain as we had in these wet areas, I would not be worried about atrazine hanging around to damage the soybeans as it is very water soluble which means most of it would be below the root zone, or just plain gone.

That's my 2 cents worth ..the choice and decision is always yours.

Lonne