Corn Problems in 2011

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General Guidelines for Corn

- Planting Date:
  - April: western KY
  - Mid-April to Mid-May (central and eastern KY)
- Plant Population: 24,000 to 30,000 plants/A
- Row Width: 30-inch rows
- Nutrients: Follow AGR-1
  - If pH is low, Lime in the fall
  - If P_2O_5 or K_2O is low, apply in fall or spring
  - N must be applied in spring
  - Account for manure
- Control pests before they become a problem

Under Water

Owensboro, Kentucky, May 10, 2011

Water Damage

Owensboro, Kentucky, May 10, 2011

Water Damage

Owensboro, Kentucky, May 10, 2011

Flooded Corn

Christian County, May 20, 2011,

Flooded areas are common this spring. Some spots have since been replanted.

Flooded Areas

Christian County, May 20, 2011

Sidedress N goes up to the wet spot.

Flooded Corn

Christian County, May 20, 2011

Flooded-out corn near the foreground in this image.

Ammonia Burn

Christian County, May 20, 2011

Ammonia burn on the leaves near the end of the field where the machine makes turns and raises out of the ground.

Sidewall Compaction

Breckinridge County, June 16, 2011; 90 lbs of K_2O / acre applied earlier in the spring

Sidewall Compaction

Breckinridge County, June 16, 2011; 90 lbs of K_2O / acre applied earlier in the spring. The roots on this plant were confined to the sides of the seed furrow but are breaking through the bottom of the furrow. K deficiency evident on lower leaves.

Sidewall Compaction

Breckinridge County, June 16, 2011; 90 lbs of K_2O / acre applied earlier in the spring. Most roots are confined to the sides of the seed furrow, but a few have broken through the bottom of the furrow and one has broken through the sides.

Sidewall Compaction

Breckinridge County, June 16, 2011; 90 lbs of K_2O / acre applied earlier in the spring.

June 17, 2011

Edmonson County

Edmonson County

June 17, 2011

Edmonson County

June 17, 2011

Will foliar fertilizer help with sidewall compaction?

Crop		N	P_2O_5	K_2O		Yield		N	P_2O_5	K_2O
		lbs/unit						lbs/acre		
corn grain	bu	0.7	0.4	0.35		100	bu	70	40	35
						200	bu	140	80	70
						300	bu	210	120	105
corn stalks	ton	14	7	29		2.8	ton	39	20	81
						5.6	ton	78	39	162
						8.4	ton	118	59	244

Foliar Product	Rate	Unit	N	P_2O_5	K_2O	S	Organic Carbon	Humic Acids
			lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre
Monty's 4-15-12	32	oz	0.114	0.4275	0.342	0		
Monty's 8-16-8	32	oz	0.224	0.448	0.224	0		
Monty's 2-15-15	32	oz	0.058	0.435	0.435	0		
Monty's Liquid Carbon	32	oz	0	0	0	0	0.02125	0.0425
Agro-Culture Liquid High NRG-N	32	oz	0.54	0	0	0.02		
Agro-Culture Liquid accesS	4	gal	0	0	0	6.8		

† Mention of a trade name is not an endorsement by the University of Kentucky Cooperative Extension Service.

Sulfur?

June 10, 2011, Lexington, KY

Corn

June 10, 2011, Lexington, KY

S Deficiency?

Fayette County, June 6, 2011. Suspected sulfur deficiency. The heavy spring rains washed some of the S out of the soil surface. More root growth will solve this problem. No yield losses expected here.

Table 1. Sulfur (ammonium sulfate) effect on test weight, moisture and yield of corn at Spindletop Farm, Lexington, KY, 2011.

Sulfur Treatment	Test Weight	Moisture	Yield
	lbs/bu	%	bu/acre
1.5 lb S/A	57.6	23.0	221.5
3.0 lb S/A	57.7	22.6	223.7
6.0 lb S/A	57.8	22.7	216.6
UTC	57.6	23.1	217.9
LSD (0.10)	ns	ns	ns
ANOVA	P value	P value	P value
trt	0.9331	0.9339	0.1395
rep	0.7971	0.8721	0.0341

Table 2. Leaf nutrient analysis from V6 corn harvested on June 14, 2011 (7 days after sulfur treatment)†

Sulfur Treatment	N	P	K	Mg	Ca	S	Na	Fe	Mn	B	Cu	Zn
	%							ppm				
1.5 lb S/A	3.02	0.45	2.77	0.27	0.42	0.13	0.001	95	33	6	7	31
3.0 lb S/A	3.13	0.48	2.96	0.27	0.40	0.12	0.001	94	43	6	8	34
6.0 lb S/A	2.79	0.42	2.67	0.29	0.38	0.11	0.001	131	36	4	8	37
UTC	3.37	0.42	3.12	0.18	0.34	0.13	0.002	105	43	7	12	33
Sufficient Level	4.25	0.42	3.20	0.30	0.60	0.29	0.008	175	95	12	11	33
	D	S	S	S-L	L	D	S	D	D	D	L	S

† Leaf samples analyzed by Midwest Laboratories, Omaha, NE.

N Deficiency?

Larue County, June 16, 2011
Yellow corn appears to line up with the width of N application equipment, not with planter passes.

N Deficiency?

Larue County, June 16, 2011
Some yellow streaks were not consistent with low areas of the field.

Hail Damage

Wayne County, June 3, 2011
Corn received hail about 5 days before these images were taken.

Hail Damage

Wayne County, June 3, 2011
Hail ripped leaves and but killed very few plants. Yield loss will be zero or very minimal.

Hail Damage

Pollination

August 18, 2011

“Tip-Back”

Downed Corn

August 16, 2011
Shelby County, Kentucky

Downed Corn

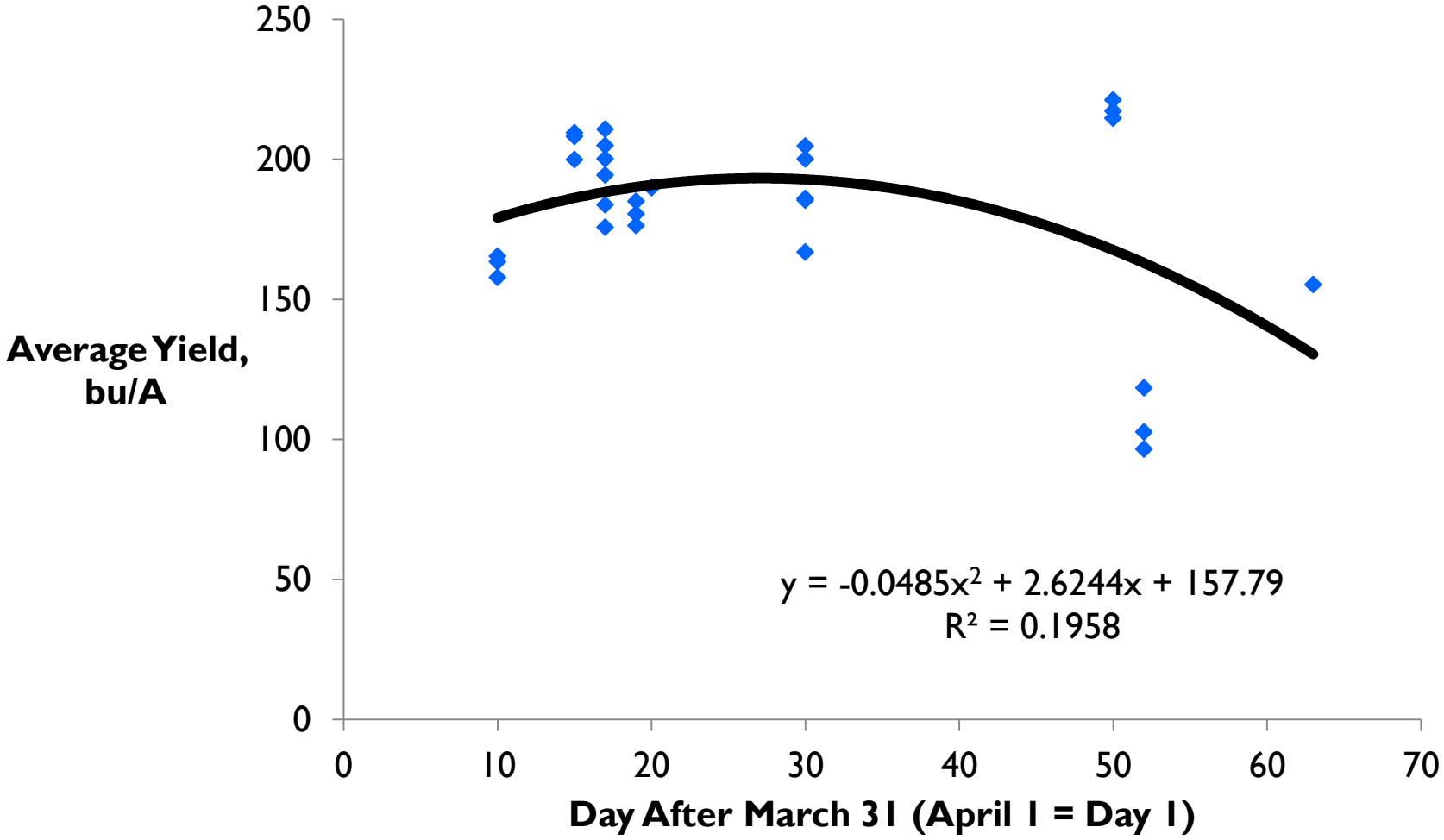
August 18, 2011, about 80 bu/acre yields
Shelby County, KY

Downed Corn

August 25, 2011, 190 bu/acre yields
Bourbon & Scott Counties, Kentucky

Light Interception in Corn

Planting Date Effect on Yield
KY Hybrid Trials, Green River Region, 2001-2010 E, M, L Tests



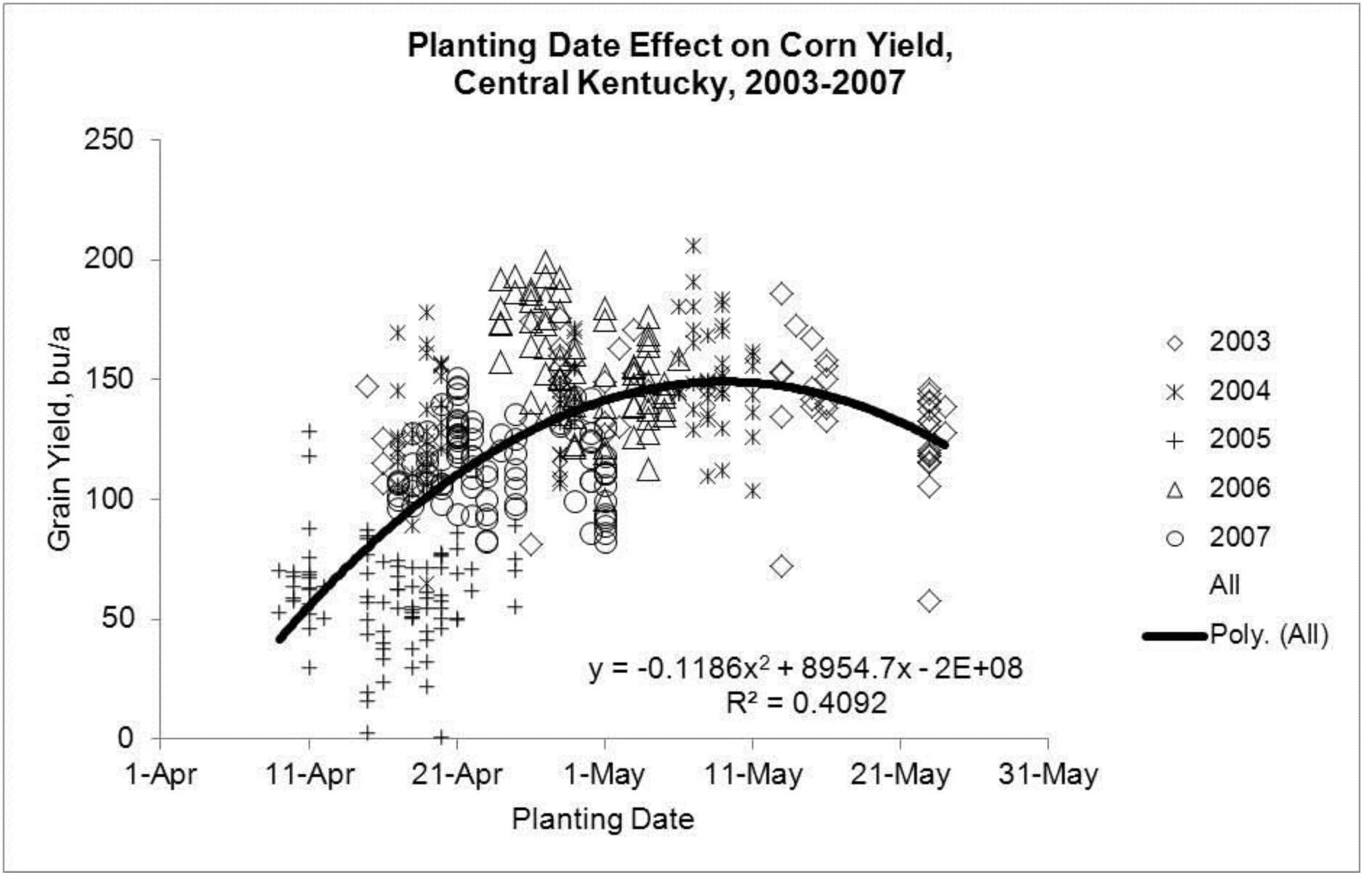


Figure 1. Corn yield versus planting date for 2003 through 2007 from central Kentucky production farms. Equations are based on day of year, where April 15 = 105 and May 15 = 135.

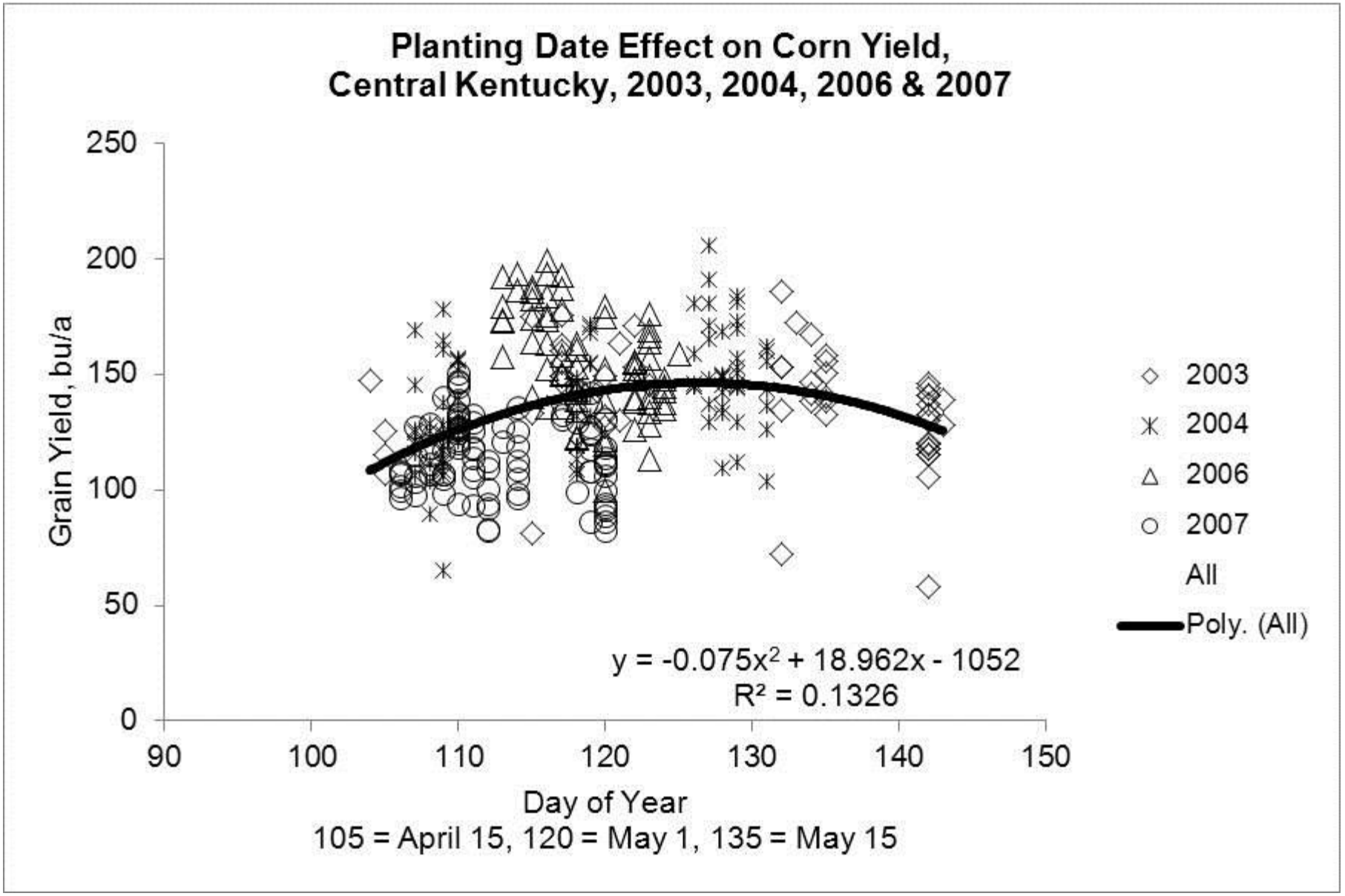


Figure 2. Corn yield versus planting date for 2003, 2004, 2006 and 2007 from central Kentucky production farms. Equations are based on day of year, where April 15 = 105 and May 15 = 135

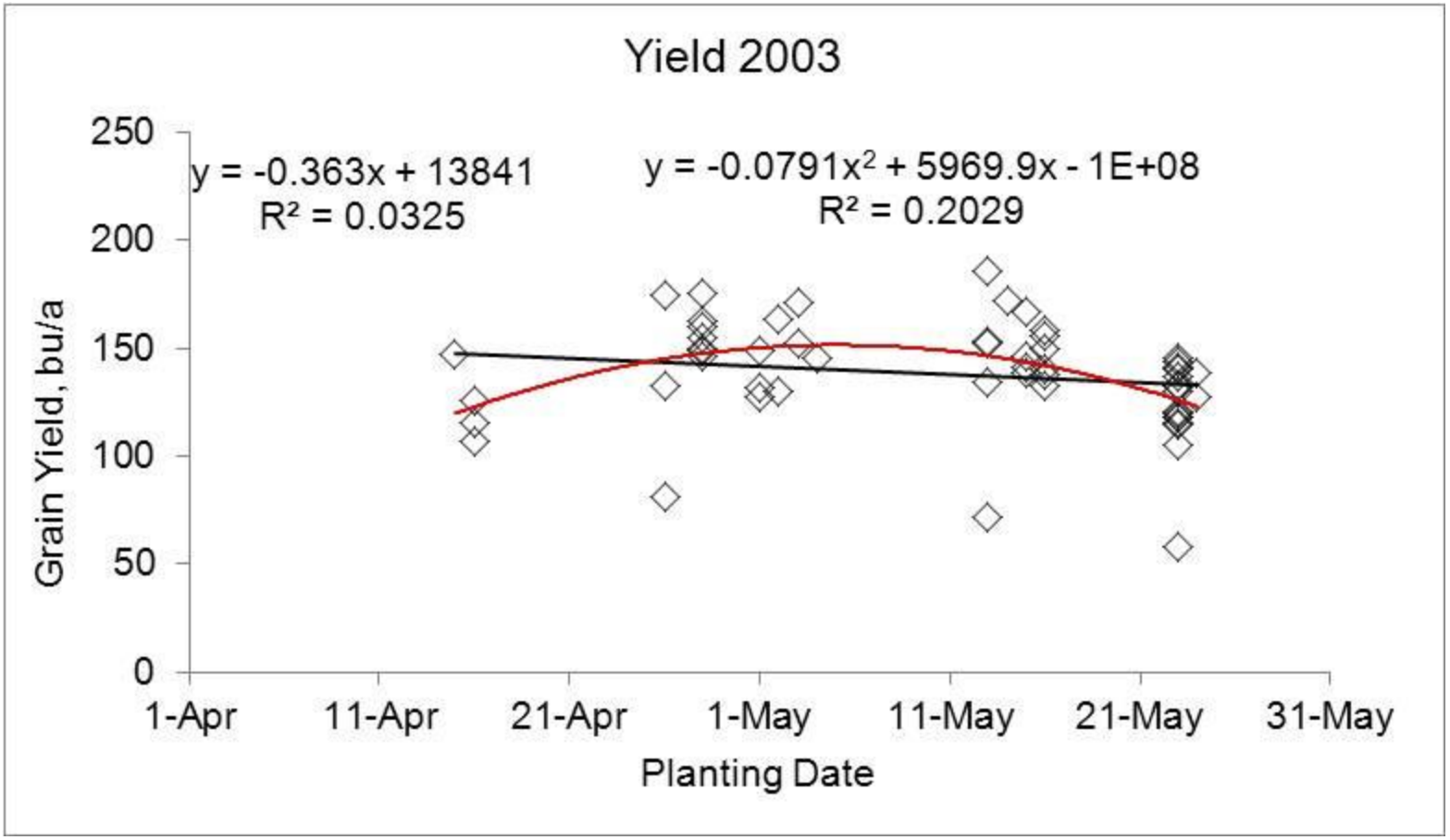
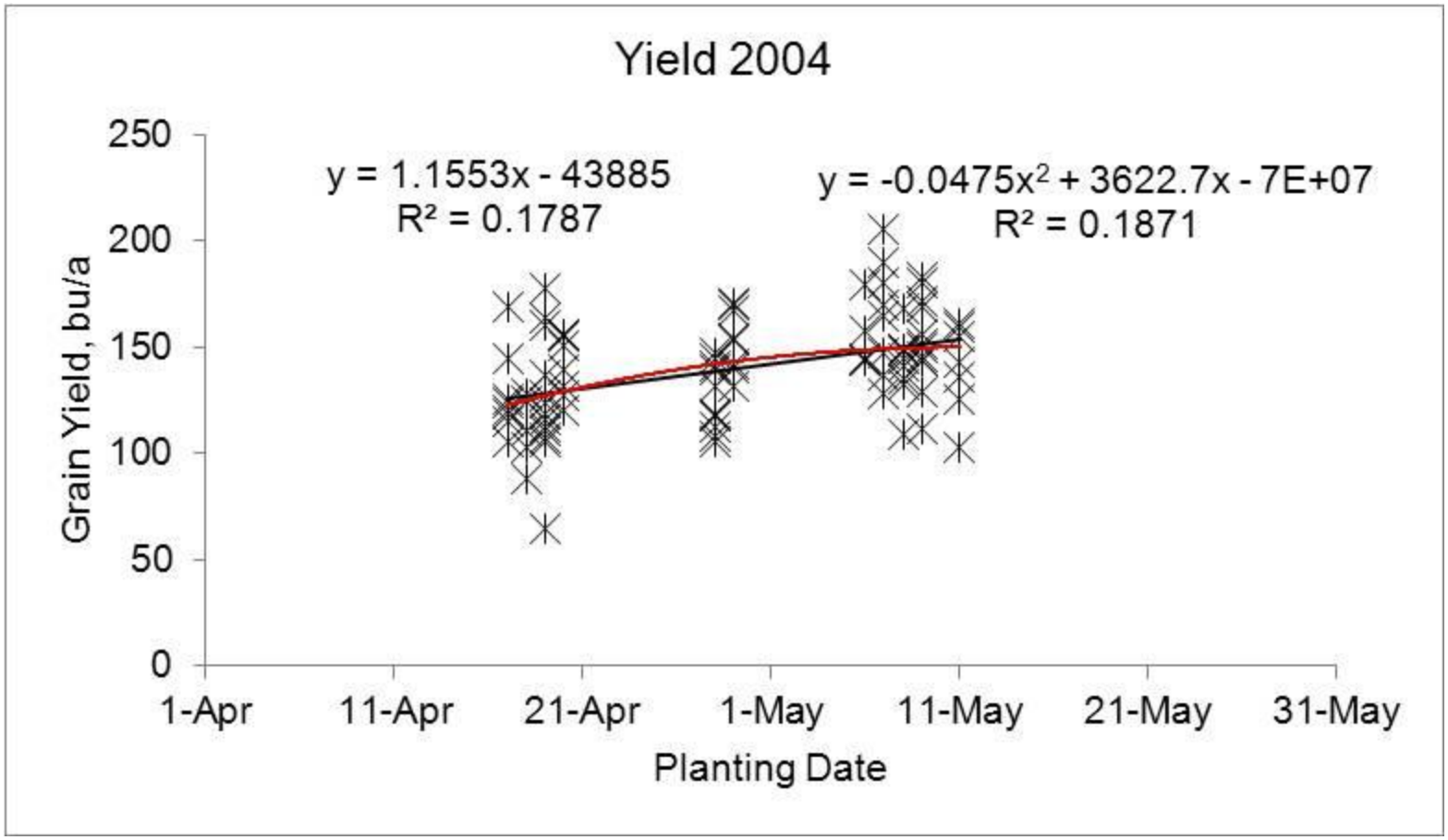


Figure 3. Corn versus planting date for individual years from central Kentucky production farms.



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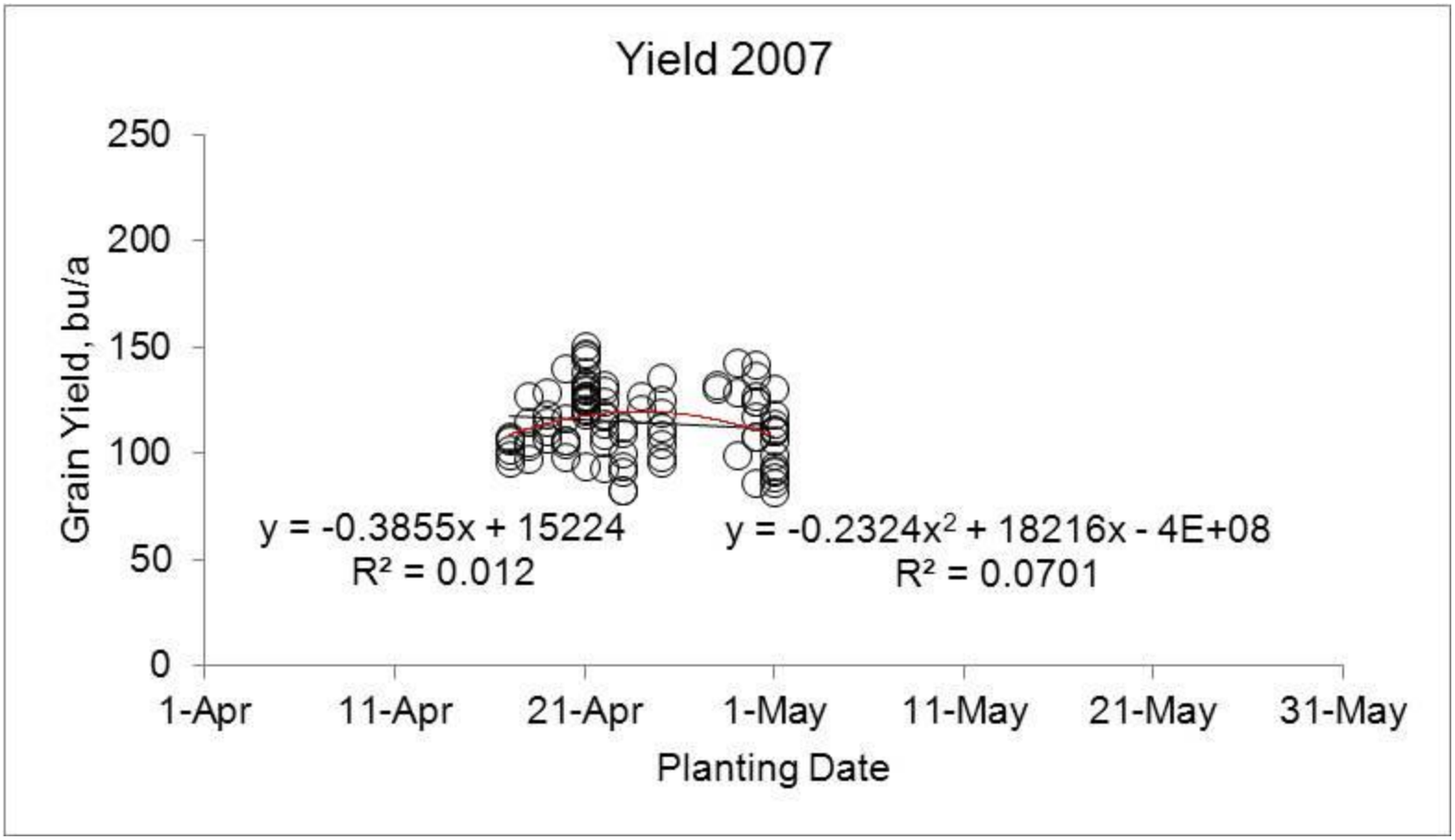

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Corn Harvest