

# LOUISIANA CROPS NEWSLETTER

## Cotton, Corn, Soybeans, Sorghum



Volume 1, Issue 2

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### Soybean Planting Populations

Dr. Ronnie Levy

Too dense a plant population reduces yields, encourages diseases and lodging and increases seed cost. When calibrating planters, use seed per foot as your guide rather than pounds of seed per acre. In the following table, the estimated pounds per acre should be used only to calculate how much seed to buy. Because of varietal difference in seed size, as well as seasonal variation within lots of the same variety, planting rates can be misleading if expressed in pounds per acre. The following rates are recommended:

Row Width (Inches)	Seed/ Row Foot	Plants/ Row Foot	Estimated lbs.Acre	Population in 1000s
36-40	8-9	6-8	35	78-104
30-32	6-7	4-5	40	78-104
20-24	5-6	4-5	45	104-130
7-10	4-5	3	70	104-130
Broadcast	5-6/sq.ft.	3/sq.ft.	75-90	150
Late Planting	6-7	4/sq.ft.	80-100	200

When planting is delayed until June 15 or later, the amount of vegetative growth that the plant produces becomes more critical. It is important to choose varieties that grow rapidly in a short time. When blooming starts, most vegetative growth ceases in determinate varieties. Maturity Group VI soybeans should be used when planting after June 1. **When planting late, seeding rates should be increased to compensate for reduced vegetative growth.**

The chart on the following page can be used to determine your plant population per acre. For multiple planters per row, count all plants on the row for 10 ft. Check several areas of the field to get a good representative sample.



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## Plant Population per acre

Plants per 10 row ft	Row width in inches										
	7.5	8	15	20	30	32	36	38	40	72	80
5	34,848	32,670	17,424	13,068	8,712	8,168	7,260	6,878	6,534	3,630	3,267
10	69,696	65,340	34,848	26,136	17,424	16,335	14,520	13,756	13,068	7,260	6,534
15	104,544	98,010	52,272	38,204	26,136	24,503	21,780	20,634	19,602	10,890	9,801
20	139,392	130,680	68,696	52,272	34,848	32,670	29,040	27,512	26,136	14,520	13,068
25	174,240	163,350	87,120	65,340	43,560	40,838	36,300	34,389	32,670	18,150	16,335
30	209,088	196,020	104,544	78,408	52,272	48,005	43,560	41,267	39,204	21,780	19,602
35	243,936	228,690	121,958	91,476	60,984	57,173	50,820	48,145	45,738	25,410	22,869
40	278,784	261,360	139,392	104,544	69,696	65,340	58,080	55,023	52,272	29,040	26,136
45	313,632	294,030	156,816	117,612	78,408	73,508	65,340	61,901	58,806	32,670	29,403
50	348,480	326,700	174,240	130,680	87,120	81,675	72,600	68,779	65,340	36,300	32,670
55	383,328	359,370	191,664	143,748	95,832	89,843	79,860	75,657	71,874	39,930	35,937
60	418,176	392,040	209,088	156,816	104,544	98,010	87,120	82,535	78,408	43,560	39,204
65	453,024	424,710	226,512	169,884	113,256	106,178	94,380	89,413	84,942	47,190	42,471
70	487,872	457,380	243,936	182,952	121,968	114,345	101,640	96,291	91,476	50,820	45,738
75	522,720	490,050	261,360	196,020	130,680	122,513	108,900	103,168	98,010	54,450	49,005
80	557,568	522,720	278,784	209,088	139,392	130,680	116,160	110,046	104,544	58,080	52,272
85	592,416	555,390	296,208	222,156	148,104	138,848	123,420	116,924	111,078	61,710	55,539
90	627,264	588,060	313,632	235,224	156,816	147,015	130,680	123,802	117,612	65,340	58,806
95	662,112	620,730	331,056	248,292	165,528	155,183	137,940	130,680	124,146	68,970	62,073
100	696,960	653,400	348,480	261,360	174,240	163,350	145,200	137,558	130,680	72,600	65,340
105	731,808	686,070	365,904	274,428	182,952	171,518	152,460	144,436	137,214	76,230	68,607
110	766,656	718,740	383,328	287,486	191,664	179,685	159,720	151,314	143,748	79,860	71,874
115	801,504	751,410	400,752	300,564	200,376	187,853	166,980	158,192	150,282	83,490	75,141
120	836,352	784,080	418,176	313,632	209,088	196,020	174,240	165,069	156,816	87,120	78,408
125	871,200	816,750	435,600	326,700	217,800	204,188	181,500	171,947	163,350	90,750	81,675
130	906,048	849,420	453,024	339,768	226,512	212,355	188,760	178,825	168,884	94,380	84,942
135	940,896	882,090	470,448	352,836	235,224	220,523	196,020	185,703	176,418	98,010	88,209
140	975,744	914,760	487,872	365,904	243,936	228,690	203,280	192,581	182,952	101,640	91,476
145	1,010,592	947,430	505,296	378,972	252,648	236,858	210,540	199,459	189,486	105,270	94,743
150	1,045,440	980,100	522,720	392,040	261,360	245,025	217,800	206,337	196,020	108,900	98,010
155	1,080,288	1,012,770	540,144	405,108	270,072	253,193	225,060	213,215	202,554	112,530	101,277
160	1,115,136	1,045,440	557,568	418,176	278,784	261,360	232,320	220,093	209,088	116,160	104,544
165	1,149,984	1,078,110	574,992	431,244	287,486	269,528	239,580	226,971	215,822	119,790	107,811
170	1,184,832	1,110,780	592,416	444,312	296,208	277,695	246,840	233,848	222,156	123,420	111,078
175	1,219,680	1,143,450	609,840	457,380	304,920	285,863	254,100	240,726	228,690	127,050	114,345
180	1,254,528	1,176,120	627,264	470,448	313,632	294,300	261,360	247,604	235,224	130,680	117,612
185	1,289,376	1,208,790	644,688	483,516	322,344	302,198	268,620	254,482	241,758	134,310	120,879
190	1,324,224	1,241,460	662,112	496,584	331,056	310,365	275,880	261,360	248,292	137,940	124,146
195	1,359,072	1,274,130	679,536	509,652	339,768	318,533	283,140	268,238	254,826	141,570	127,413
200	1,393,920	1,306,800	696,960	522,720	348,480	326,700	290,400	275,116	261,360	145,200	130,680
205	1,428,768	1,339,470	714,384	535,788	357,192	334,868	297,660	281,994	267,894	148,830	133,947
210	1,463,616	1,372,140	731,808	548,856	365,904	343,035	304,920	288,872	274,428	152,460	137,214
215	1,498,464	1,404,810	749,232	561,924	374,616	351,203	312,180	295,749	280,962	156,090	140,481
220	1,533,312	1,437,480	766,656	574,992	383,328	359,370	319,440	302,627	287,486	159,720	143,748
225	1,568,160	1,470,150	784,080	588,060	392,040	367,538	326,700	309,505	294,030	163,350	147,015
230	1,603,008	1,502,820	801,504	601,128	400,752	375,705	333,960	316,383	300,564	166,980	150,282
235	1,637,856	1,535,490	818,928	614,196	409,464	383,873	341,220	323,261	307,088	170,610	153,549
240	1,672,704	1,568,160	836,352	627,264	418,176	392,040	348,480	330,139	313,632	174,240	156,816
245	1,707,552	1,600,830	853,776	640,332	426,888	400,208	355,740	337,017	320,166	177,870	160,083
250	1,742,400	1,633,500	871,200	653,400	435,600	408,375	363,000	343,895	326,700	181,500	163,350
255	1,777,248	1,666,170	888,624	666,468	444,312	416,543	370,260	350,773	333,234	185,130	166,617
260	1,812,096	1,698,840	906,048	679,536	453,024	424,710	377,520	357,651	339,758	188,760	169,884
265	1,846,944	1,731,510	923,472	692,604	461,736	432,878	384,780	364,528	346,302	192,390	173,151
270	1,881,792	1,764,180	940,896	705,672	470,448	441,045	392,040	371,406	352,836	196,020	176,418
275	1,916,640	1,796,850	958,320	718,740	479,160	449,213	399,300	378,284	359,370	199,650	179,685
280	1,951,488	1,829,520	975,744	731,808	487,872	457,380	406,560	385,162	365,904	203,280	182,952
285	1,986,336	1,862,190	993,168	744,876	496,584	465,548	413,820	392,040	372,438	206,910	186,219
290	2,021,184	1,894,860	1,010,592	757,944	505,296	473,715	421,080	398,918	378,872	210,540	189,486
295	2,056,032	1,927,530	1,028,016	771,012	514,008	481,883	428,340	405,796	385,506	214,170	192,753
300	2,090,880	1,960,200	1,045,440	784,080	522,720	490,050	435,600	412,674	392,040	217,800	196,020
305	2,125,728	1,992,870	1,062,864	797,148	531,432	498,218	442,860	419,552	398,574	221,430	199,287
310	2,160,576	2,025,540	1,080,288	810,216	540,144	506,385	450,120	426,429	405,108	225,060	202,554
315	2,195,424	2,058,210	1,097,712	823,284	548,856	514,553	457,380	433,307	411,642	228,690	205,821

## At-planting herbicide considerations for cotton and soybean in 2010

Donnie Miller, Daniel Stephenson, and Bill Williams

### Residual Herbicide Use at Planting

An extremely positive attribute to the herbicides glyphosate and glufosinate, used in a Roundup Ready or Liberty Link weed control system, respectively, is that both can exhibit excellent activity on weed species larger in size than what is recommended for optimum activity on individual labels. Unfortunately, this can also be an extremely negative attribute to each herbicide. Delaying herbicide application for the sake of having a greater population present to get more "bang for the buck" with a single application can allow weeds to compete with emerging crops. Early season weed competition in both soybean and cotton can result in reduced yield with little impact often observable prior to harvest. In addition, application to larger weeds can result in reduced control of less-sensitive species with glufosinate (pigweed, goosegrass, and broadleaf signalgrass) and glyphosate (morningglory species, hemp sesbania, and prickly sida). This in turn can lead to increased weed seed-bank populations in the soil due to continued seed production and negate long term weed management efforts.

Although weed resistance to glyphosate has not been scientifically documented in Louisiana to date, the fact is that various weed populations have proven difficult to control with the herbicide in some cases (amaranths, ragweed, and Johnsongrass). This "practical" resistance is becoming a larger issue and although attributable to spraying weeds that are too large in some instances, a "red flag" should go up whenever control failures exist. Resistance issues in other states have led to increases in herbicide management costs of 40 to 50\$/A with additional herbicides needed or complete field abandonment. The economic impact of weed resistance is also realized in decreased value of the transgenic technology, as weeds previously controlled in the system become less and less susceptible, and potential decreased land rent value.

Use of residual herbicides in today's transgenic world of soybean and cotton production can result in positive benefits including reduced early-season weed competition through prevention of weed germination in early crop development stages and weed resistance management through introduction of alternative modes of action to glyphosate or glufosinate. To achieve maximum activity from residual herbicides, proper activation of the material must occur. Activation is placement of the herbicide in the soil region that maximizes opportunity for herbicide uptake by the emerging weed seedling. Herbicide activation is accomplished through rainfall/irrigation or mechanical incorporation. Most labels will call for a rainfall or irrigation amount of 0.5 inches or greater, preferably in one event. Mechanical uniform incorporation of the herbicide in the top 2 to 3 inches will adequately activate most herbicides. The majority of herbicides soil applied at planting will require me-

chanical uniform incorporation preferably within 7 to 10 days after application if rainfall is not received.

Below is a brief discussion of some of the relatively newer compounds available for preplant use in soybean in 2010, a number of which have been evaluated by LSU AgCenter Weed Scientists. Please refer to individual herbicide labels for plant-back intervals, precautions/restrictions, soil type and rates, and special requirements/uses (ie reduced rate application in planned PRE/POST programs, incorporation instructions, activation requirements, notes for maximum control of selective species etc.). Herbicide labels can be accessed at the following website:

<http://www.cdms.net/LabelsMsds/LMDefault.aspx?srchPdt%20=%20&t>

A table summarizing replant intervals to field corn, cotton, grain sorghum, soybean, and wheat following application of most pre-plant herbicides also follows.

### Newer Herbicides for 2010

**Authority First (soybean):** Authority First combines the active ingredient sulfentrazone (Spartan herbicide) and cloransulam-methyl (FirstRate herbicide). This product is labeled for control of pigweed (Amaranths), morningglory (suppression on pitted), prickly sida (teaweed), groundcherry, hophornbeam copperleaf, smellmellon, yellow and purple nutsedge, and annual sedge. It provides suppression of most annual grasses. The use rates range from 6.45 oz/A (soils 3% organic matter or less) to 8 oz/A (soils greater than 3% organic matter). Do not apply to soils classified as sands with organic matter less than 1%.

**Authority MTZ (soybean):** Authority MTZ combines the active ingredient sulfentrazone (Spartan herbicide) and metribuzin (Sencor or Lexone herbicide). This product expressed good activity on pigweed (Amaranths), morningglory, prickly sida (teaweed), groundcherry, hophornbeam copperleaf, smellmellon, yellow and purple nutsedge, and annual sedge. It provides suppression of most annual grasses. The use rates range from 12 to 20 oz/A depending on soil type (see label). On soils with Ph greater than 7.5, use rate should not exceed 12 oz/A. Research has shown excellent activity at the rate of 14 ounces product per acre, which provides an equivalent rate of 5 oz/A metribuzin. The herbicide label should be consulted for listing of metribuzin-sensitive soybean varieties.

**Axiom DF (soybean):** Axiom DF combines the active ingredient flufenacet and metribuzin (Sencor or Lexone herbicide). The herbicide controls barnyardgrass, crabgrass, foxtail species, goosegrass, and fall panicum. Will provide suppression of seedling johnsongrass, broadleaf signalgrass, pigweed species, prickly sida, Pennsylvania smartweed, and waterhemp. Use rate range is 7 to 13 oz/A. The herbicide label should be consulted for listing of metribuzin-sensitive soybean varieties.

**Envive (soybean):** Envive combines the active ingredients of chlorimuron ethyl (Classic herbicide), thifensulfuron methyl (Harmony GT herbicide), and flumioxazin (Valor herbicide) in one pre-mix product. Envive offers the advantage of two independent modes of action, which can aid in weed resistance management. This product expresses strong efficacy on pigweed, morningglory, sicklepod, prickly sida (teaweed), smartweed, and hophornbeam copperleaf while suppressing annual grasses. Use rates range from 2.5 to 5.3 oz/A. It can be applied up to three days after planting. In non-STS or RR/STS soybean, do not apply within 14 days before or after application of an organophosphate insecticide. Higher rates of Envive may “carry over” when applied to soils with a pH of 7.5 or greater and injure crops planted the following year due to the Classic portion of the herbicide. If a producer wishes to apply Envive on a high pH soil, then **Enlite** at 2.8 oz/A may be an option. **Enlite** combines the same active ingredients as Envive except the Classic portion is less. **Enlite** provides similar performance against the weed spectrum previously listed for Envive.

**Gangster (soybean):** Gangster is a multi-pack combination of the active ingredients flumioxazin (Valor SX) and cloransulam methyl (FirstRate). Labeled for control of morningglory species, pigweed species, Palmer amaranth, prickly sida, smartweed, copperleaf, and wild poinsettia. Suppression of barnyardgrass, large crabgrass, giant foxtail, goosegrass, panicum, and broadleaf signalgrass can be expected. Use rates range from 3 to 3.6 oz/A. The 3 oz/A rate is equivalent to applying 2.5 oz/A Valor SX and 0.5 oz/A FirstRate.

**Prefix (soybean):** Prefix combines the active ingredient smetolachlor (Dual Magnum) and Reflex (fomesafen). Provides control of barnyardgrass, crabgrass, foxtail species, goosegrass, seedling johnsongrass, pigweed species, wild poinsettia, and smartweed species. It provides partial control of morningglory species, yellow nutsedge, and prickly sida (teaweed). Use rates range from 2 to 3 pt/A depending on soil type.

**Sharpen (soybean):** Sharpen contains the active ingredient saflufenacil. This product shows good activity on pigweed species, morningglory species, Palmer amaranth,

waterhemp, and prickly sida (teaweed). Use rate is 1 oz/A.

**Valor XLT (soybean):** Valor XLT combines the active ingredients flumioxazin (Valor SX) and chlorimuron ethyl (Classic). Weeds controlled with this herbicide include copperleaf, prickly sida, pigweed species, morningglory species, palmer amaranth, smartweed, and wild poinsettia. Suppression of barnyardgrass, large crabgrass, broadleaf signalgrass, goosegrass, and panicums can be expected. Use rate ranges from 3 to 5 oz/A.

**Plantback intervals for at-planting soil applied herbicides in soybean and cotton**

Herbicide	Corn	Cotton	Grain Sorghum	Soybean	Wheat
Authority First	10 mo <sup>1</sup>	18 mo	12 mo	0	4 mo
Authority MTZ DF	10 mo, 4 mo <sup>2</sup>	12 mo	18 mo, 12 mo <sup>2</sup>	0	4 mo
Axiom DF	0	8 mo	12 mo	0	4 mo
Boundary 6.5 EC	8 mo	8 mo	12 mo	0	4.5 mo
Canopy <sup>3</sup>	9/10 mo, 18 mo	10 mo, 18 mo	10 mo, 18 mo	0	4 mo
Command 3 ME	9 mo	0 <sup>4</sup> , 9 mo	9 mo	0	12 mo
Cotoran 4L/ Fluometuron	8 mo	0	9 mo	9 mo	3 mo
Enlite	9 mo	9 mo	9 mo	0	4 mo
Envive <sup>5</sup>	10 mo, 18 mo	10 mo, 30 mo	10 mo, 18 mo	0	4 mo
FirstRate	9 mo	9 mo	9 mo	0	3 mo
Fomesafen <sup>6</sup>	See label	0	10 mo	0	4 mo
Gangster	9 mo	9 mo	9 mo	0	3 mo
Lorox DF/ Lorox L	0	4 mo	0	0	4 mo
Microtech	0	0	0 (treated seed)	0	See label
metolachlor/s-metolachlor <sup>7</sup>	0	0	0	0	4.5 mo
Outlook	0	Next spring	0	0	4 mo
Pendimethalin <sup>8</sup>	0	0	Next year	0	4 mo
Prefix	10 mo	1 mo	10 mo	0	4.5 mo
Pursuit/ Pursuit Plus	8.5 mo	18 mo	18 mo	0	4 mo
Scepter	9.5 mo	18 mo	11 mo	0	3 mo
Sharpen	0	See label	See label	See label	See label
Spartan 4F	10 mo	12 mo	10 mo <sup>9</sup>	0	4 mo
Staple LX/ Pyrimax 3.2 L	9 mo, 10 mo <sup>10</sup>	0	Not next season	10	4 mo
Synchrony XP <sup>11</sup>	7 mo	8 mo	9 mo	0	3 mo
Trifluralin <sup>12</sup>	12 mo	0	12 mo	0	4 mo
Valor <sup>13</sup>	1 mo	1 mo	1 mo	0	1 mo
Valor XLT <sup>5</sup>	10 mo, 18 mo	10 mo, 30 mo	10 mo, 18 mo	0	4 mo

<sup>1</sup>18 month replant interval if 6.45 to 8 oz/A was applied to soils with organic matter 1.5% or less and pH > 7.

<sup>2</sup>Field corn can be planted 4 months after application at 14 oz/A or less. Grain sorghum can be planted 12 months after application at 20 oz/A or less.

<sup>3</sup>18 month replant interval for rate greater than 3.5 oz/A and pH > 7. Field corn can be replanted in 9 months given Canopy rate does not exceed 6 oz/A.

<sup>4</sup>Refer to label for **Requirements for Planting Time** section.

<sup>5</sup>Longer replant intervals must be observed for soil pH 7 or greater.

<sup>6</sup>Fomesafen is the active ingredient in herbicides such as Dawn, Reflex, and Rhythm.

<sup>7</sup>Metolachlor or s-metolachlor (see specific label for active ingredient contained) is the active ingredient in herbicides such as Dual Magnum, Cinch, Me-too-lachlor, Stalwart, Parrlay, Parallel, and similar commercially available herbicides.

<sup>8</sup>Pendimethalin is the active ingredient in herbicides such as Prowl 3.3 EC, Prowl H<sub>2</sub>O, Pendimax 3.3 and similar commercially available herbicides.

<sup>9</sup>18 month replant interval for rates above 8 oz/A.

<sup>10</sup>If applied on a band (not exceeding 50% row width) and thorough soil mixing occurs, a 9 month replant interval must be observed. If rate does not exceed 3.8 oz/A total broadcast, a 10 month interval should be observed without additional soil mixing beyond normal in your particular production system.

<sup>11</sup>See label for additional replant notes.

<sup>12</sup>Trifluralin is the active ingredient in herbicides such as Treflan HFP and Trifluralin 4 EC and similar commercially available herbicides.

<sup>13</sup>One inch rainfall must be received in addition to replant interval. Intervals are for rates of 2 oz/A or less.

## The effect of soluble salts in irrigation water on crop yields.

Dr. Jay Stevens and Dr. John Kruse

*"Water, water, everywhere, nor any drop to drink." Samuel Taylor Coleridge, The Rime of the Ancient Mariner*

Irrigation represents a critical component of modern farming production practices. The fact that crops need water goes without saying, but specifically irrigation can assist a crop in surviving drought conditions, optimizing pollination, and filling grain or bolls. Irrigation can also be used for making fertilizer or crop protection chemical applications. Unfortunately many fields in the state are irrigated with water that is less than desirable in terms of water quality. Water quality is a term that is usually associated with water chemistry and takes into account pH, hardness and soluble salts.

The Mississippi River Aquifer (MRA) is hydraulically connected with the Mississippi River and its major tributaries. Recharge is accomplished by direct infiltration of rainfall in the river valley, lateral and upward movement of water from adjacent and underlying aquifers, and overbank stream flooding. The amount of recharge from rainfall depends on the thickness and permeability of the silt and clay layers overlying it. Water levels fluctuate seasonally in response to precipitation trends and river stages. Water levels are generally within 30 to 40 feet of the land surface and movement is down-gradient and toward rivers and streams. Maximum depths of occurrence of freshwater range from 20 feet below surface level to 500 feet below surface level. The thickness of the freshwater is 50 – 500 feet. Parts of the MRA can have a substantial soluble salt content. After an acre-foot of water is applied from a source high in soluble salts, it is astonishing how many salts can end up on the soil (Table 1).

Table 1. Water Quality Measurements from an irrigation well in Catahoula Parish in 2004.

Parameter	mg/L (ppm)	Level	Pounds per acre*
Soluble Salts	606	High	1648
Alkalinity (hardness)	473	Very High	1286
Chloride	51.2	Medium	139
Sulfur	18.6	Medium	17
pH	6.9	Optimal	
Potential CCE	249 (Ca)	-	1693

\*The amount applied on the soil if 1 acre-foot of water is applied.

Excess soluble salts on production farmland can have a substantial impact on crop growth and yield. As the soil solution becomes saltier, the plant has to fight harder to allow water to pass into the root system while keeping excess salts out or sequestering (storing) them in the plant cells. This is energy spent trying to survive that could potentially have gone towards increasing yields. In some cases the salt load is so heavy the plant may not be able to keep up with transpiration and wilts and dies. Some crops are more susceptible than others to the presence of salts in the soil. Information gathered from University of Arkansas data lists crops and the relative productivity in percent compared to the optimal yield that could have been attained (Table 2). It is also interesting to note that the Ca concentration present in the irrigation water will combine with free carbonates in the water and the soil to form a Calcium Carbonate Equivalent, or CCE, that has the effect of liming the soil as if someone had applied 1,693 pounds of lime per acre (Table 1).

Producers will want to test their well water at least by early-summer, but also later in the season as crop maturity approaches. An irrigation well is likely to produce its highest quality water in the spring since the aquifer is somewhat recharged after the winter. However, as the season progresses and more water is pumped out of the aquifer, what remains below ground may be getting saltier and saltier. Be sure to collect a sample after the irrigation well has been running for 30 minutes so that you do not collect salts or micro-debris that may have collected in the irrigation equipment itself. Use a clean plastic container to collect the sample and submit it to the LSU AgCenter Soil Testing and Plant Analysis Laboratory (STPAL) through your Parish Agent, or use the professional lab of your choice. Water quality samples submitted to the STPAL cost \$10. Knowing the quality of water coming from your wells can impact how you manage your crop, including crop rotation decisions.

Table 2. Crop Relative Productivity at various levels of total soluble salts.

Total Soluble Salts mg/L (ppm)	400	920	1,182	1,445	1,970	2,500	3,284	4,466	
Crop	% Relative Productivity								
Corn	100	91	84	76	61	47	24	0	
Cotton	100	100	100	100	100	93	71	57	
Rice	100	100	88	76	51	27	0	0	
Soybean	100	100	100	100	69	20	0	0	
Wheat	100	100	100	100	93	79	57	29	
Sorghum	100	100	100	98	84	70	50	22	
Bermudagrass	100	100	100	100	99	87	67	42	

Example: At 1,970 ppm total soluble salts, corn would be expected to produce about 61% of a normal yield.

### Upcoming Events Upcoming Events To Remember

Ag Magic  
April 19– 25, 2010/ 8-3:00  
Parker Coliseum LSU Campus

May 20, 2010

Red River Research Station Field Day  
June 16, 2010

LSU Day  
April 24, 2010– All day event / LSU Campus

Northeast Research Station Field Day  
June 17, 2010

Wheat and Oat Field Day  
April 26, 2010  
Macon Ridge Research Station

Rice Research Station  
July 1, 2010 /All day event

2010 Biodiesel Workshop  
April 28, /2010 8:30-500  
Callegari Center, 1300 Dean Lee , Baton Rouge, LA

Sugar Cane Filed Day  
July 21, 2010  
St. Gabriel Research Station / 8:00-1:00

Beef and Forage Field Day  
May 6, 2010/ 9:00-1:00  
Rosepine Research Station

Dean Lee Research Station Field Day  
August 5, 2010

Hammond Research Field Day  
5/13/2010

Sweet potato Field Day  
August 24, 2010

2010 Pecan Station Field Day

**Are There Errors in the Louisiana Crops Newsletter?**

**Would you like to receive our Newsletter?**

**Let us know!**

Contact Brandi Woolam @bwoolam@agctr.lsu.edu

## Behind the Scenes – LSU AgCenter Research Profile

Dr. David Weindorf

. An essential component of Extension is to communicate the latest in research to the growers and agricultural stakeholders of Louisiana. This is the first in a series of research profiles that will be published to give the people of the State a better understanding of the basic and applied research that is being conducted for their benefit.

David Weindorf is an Assistant Professor of Soil Classification and Land Use based in Baton Rouge. His research concerns new technologies in soil survey, validation/interpretation of soils data, international translational soil taxonomy, and effective land use/management systems. Current research projects include: 1) use of composted mulches along highway right-of-ways in Louisiana for erosion control, 2) characterization of ironstone subsoils in Northern and Central Louisiana, 3) evaluation of field-portable technologies for soil chemical analysis, and 4) a soil temperature study in the Transylvanian Plain of Romania.

The new technologies being evaluated by Dr. Weindorf’s research team are quite dramatic, almost science fiction! For instance, field portable x-ray fluorescence spectrometry is a handheld device placed on the surface of the soil. The x-ray analysis provides elemental data on soils (plant essential nutrients and heavy metal concentrations) in 30 seconds with parts-per-million accuracy. The best part is that the equipment can be rented very affordably and requires limited training. This puts a powerful new tool in the hands of environmental scientists, agricultural producers and consultants.

Another technology Dr. Weindorf is studying is visible and near infrared diffuse reflectance spectroscopy (DRS). This technology shines super pure white light on soils and carefully measures reflectance patterns. These patterns can be

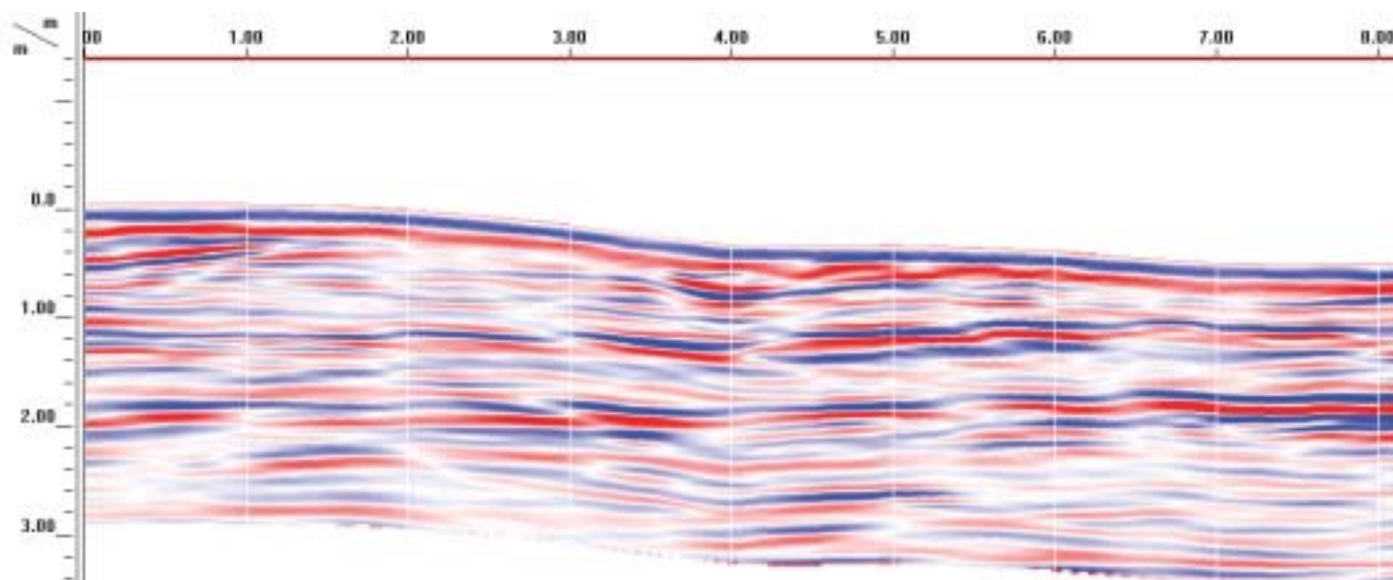
used to a wide variety of soil properties including soil texture, organic matter content, and clay mineralogy. Dr. Weindorf’s team is using DRS to assess hydrocarbon contamination from oil spill areas and determine how wide and how deep the contamination goes.

Finally, Dr. Weindorf’s team recently used ground penetrating radar to evaluate ironstone layers within Louisiana soils. While fractured ironstone is commonplace, the team has identified highly unique, continuously-cemented “placic” horizons within a soil in Vernon parish, a first anywhere in the Southern United States. Such soils pose unique challenges for production as they limit water movement throughout soil profiles.



Dr. Weindorf enjoys interaction with agricultural producers across the state is always happy to answer questions or assist in soil description/classification.

Should you need assistance or have any questions, contact : Dr. Weindorf at (225) 578-0396 or [dweindorf@agcenter.lsu.edu](mailto:dweindorf@agcenter.lsu.edu).



Picture: Ironstone horizons in soil profile in Vernon Parish. Figure: Graph of soil layers using ground-penetrating radar.

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