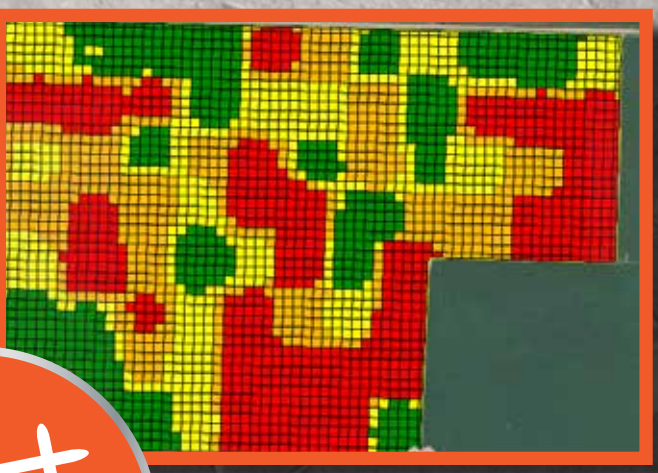
MAPS SAMPLE BOOK

NEW COOPERATIVE INC.



MAPS®
MIDWEST AGRONOMIC PROFESSIONAL SERVICES

YOUR TECHNOLOGY PARTNER IN THE FIELD

PUT the POWER of FARMING in YOUR HANDS!

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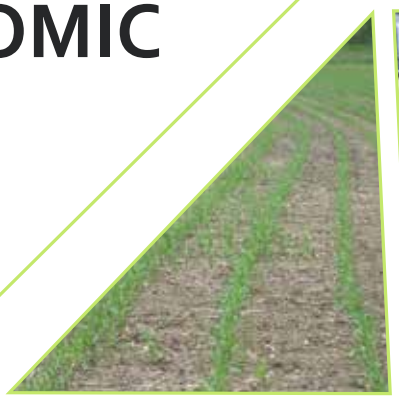
Totally Tubular Manufacturing
TOPCON
360 Yield Center

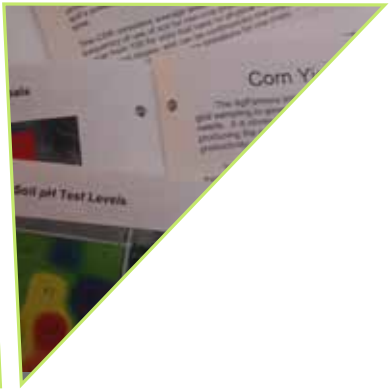
SOILMAP

WHO WE ARE SOILMAP is a full-service agronomic center providing precision agriculture solutions through services, sales and support to customers looking to add value to their farming operations. These products and services assist farmers in gaining insight into each field they operate in order to improve management decisions. All the services and solutions offered by SOILMAP are customized to each farmer's individual needs to optimize specific objectives.

PREPARE for AGRONOMIC POWER

- GRID SOIL SAMPLING
- AGRONOMY DECISIONS
- PRECISION HARDWARE
- APPLICATION & OPERATION
- DATA MINING
- SERVICE AND SUPPORT
- DRONES





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GRID SOIL SAMPLING

The starting point of an intensive nutrient management plan is a quality soil test. Obtaining quality soil cores is one of the most important steps in the MAPS program. MAPS soil samples are tested for the following nutrients:

pH	Calcium (Ca)
Buffer pH (BpH)	Magnesium (Mg)
Phosphorous (P)	Sodium (Na)
Potassium (K)	Sulfur (S)
Zinc (Zn)	Cation Exchange Capacity (CEC)
Organic Matter (OM)	Base Saturations

MAPS ensures that growers will receive timely field data collection with quality results as quickly as possible.

MAPS®
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AGRONOMY DECISIONS

The next step in the MAPS program is developing site-specific nutrient recommendations based on sound agronomic principles. A professional agronomy staff, with practical experience, is key to gaining quality solutions. MAPS methods for managing fertility have been field-tested for over a decade, and each recommendation and decision is customized for your individual grower needs.

Field soil results and staff will assist with commodity and hybrid selection, along with correct fertilizer applications in the spring; followed by fertilizer and tillage practice recommendations through the summer and fall.

PRECISION HARDWARE

In order to effectively strengthen your production efficiency and improve your bottom line, a wise investment in precision farming tools is necessary. MAPS offers a complete line of precision hardware tools for guidance, steering, and controlled input usage.

MAPS understands that every field and grower has individual needs, so we carry multiple brands of precision tools. With the vast amount of precision technology products available today, it is important to MAPS that the knowledge of these products is offered to our customers.

The MAPS staff makes sure our customers are educated on the understanding and use of their equipment, from the beginner to experienced user of precision technology. As technology progresses and changes MAPS ensures that the customers are kept up to date on new advances to their products.

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APPLICATION & OPERATION

Once all the data is collected, recommendations are made and hardware is purchased, it is the actual application that determines the outcome of MAPS tools and solutions.

You will achieve input efficiency through options in variable rate application of fertilizers and other nutrient inputs, along with controlled planting operations to ensure that time and money are not wasted.

Coupled with guidance and steering tools, you will see a positive change in the fuel consumption, machine hours, labor and input costs, and in the amount of skip and overlap, in comparison to your previous operations.

DATA MINING

As field data is collected year after year, it is vital that this information be useful to the future management decisions of the customer's farming operation.

MAPS has developed a software program (MAPS DM) that is able to use multiple years of data and create analyses that give a closer look into how a field is affected by the many variables encountered in farming.

This also provides the ability to compare year to year operations and gain understanding into how your field has been affected. MAPS DM services also include a group setting, at various times throughout the growing season, for those utilizing the data mining service to further compare with other producers results, create interaction between producers, and provide educational opportunities.

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SERVICE & SUPPORT

The most important piece of any agronomic tool is also the most commonly overlooked by other providers. However, the MAPS team has made it their commitment to see that our customers receive the total precision package.

Along with professional soil sampling, data software, numerous hardware products, and accompanied by efficient applications options, the MAPS team offers Professional Consulting Services.

Our consultants can help guide your precision needs and grow your business and improve your work flow processes and accountability.

DRONE SALES AND SUPPORT

With a drone purchase from MAPS, it will arrive to you ready to fly. Our dedicated team will set it up and make sure all of the firmware is up to date on both the drone and the batteries. We can also assist in determining any safety and regulatory needs for your drone.

MAPS partnership with a world leader in sensoring equipment gives us an edge with your imagery options. Drones from MAPS use a true NDVI camera that gauges the health of the plant. MAPS can provide these images to you on an interactive website that allows you to zoom in/out to further inspect the field.

The MAPS team has gained valuable knowledge over the past years of working with drones. They are able to set you up for success.

DRONE SALES
IMAGERY PROCESSING & TRAINING
FAA REGISTRATION

MAPS
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ENROLL TODAY

Now that you have taken the first step and informed yourself on the many services and solutions the MAPS Program offers, it is time to move forward. Take the next step and enroll your farms and fields in the MAPS Program today. Rest assured knowing that your management decisions will greatly improve with the information and recommendations provided by our team of agronomic professionals.

WE FOCUS ON YOUR NEEDS:
ONE SEED, ONE ROW,
and ONE FIELD AT A TIME

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Soil Sample Data Pages

The following pages of the sample book are replicas of information and mapping gathered from soil samples of a specific site. MAPS site specific data ranges from yield mapping to specific nutrient levels and much more. The results better enable you and your agronomist to make the best management decisions for your fields. As an additional management tool, the MAPS book allows you to more easily compare your fields year to year.

You can feel confident in knowing that our MAPS Team and agronomy staff are working with your best interest in mind. We pride ourselves in quality recommendations based on what

Your farming operation needs are, not on your neighbors. Additionally, our services go from start to finish, and that includes the service after the sale. We focus on your needs; one seed, one row and one field at a time.

Anywhere Township of Iowa County

Section 12

Customer	**INNOVATIVE FARMER**
Field Name	**ALL**
Field Code	**EXA12SE**
Sampled	**Summer 2007**
Field Acres	**147.38 acres**

MAPS Ratings

To maintain a given soil fertility level, one needs to apply the amount of nutrients used by the crop. A fertilizer application that is greater than what the crop removes will build soil fertility levels. Conversely, applying less than crop removal will deplete the soil fertility levels.

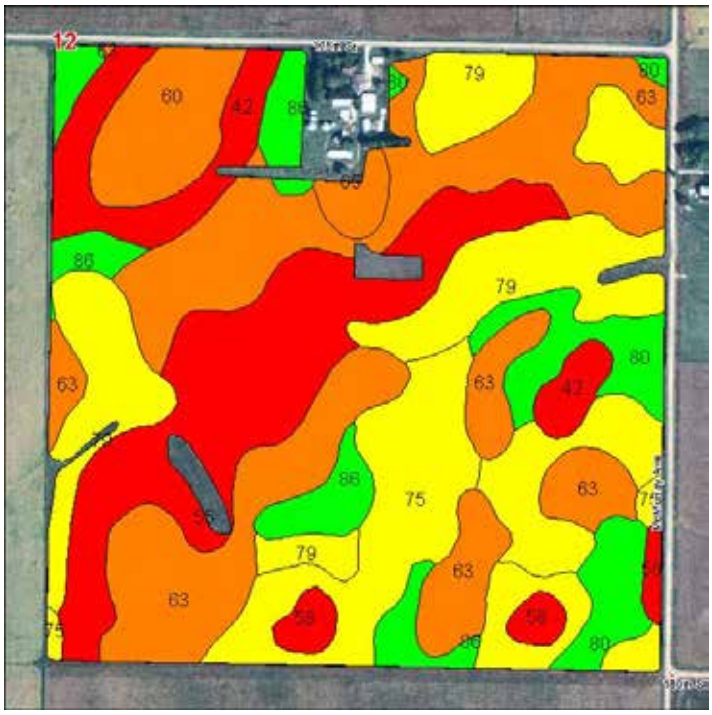
Throughout the MAPS fertility management book the following color scheme is used.

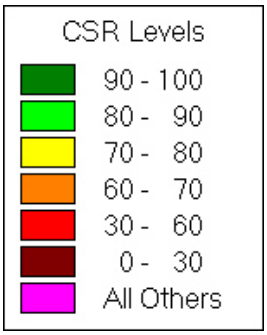
Very Low Red	Yields are usually restricted.
Low Orange	Yields are usually restricted unless conditions are ideal.
Optimum Yellow	Enough nutrients for most conditions for a typical year.
High Green	Enough nutrients for high yield goals under a wide range of conditions.
Very High Blue	It is unlikely to see any economic response to fertilizer applied to these areas.

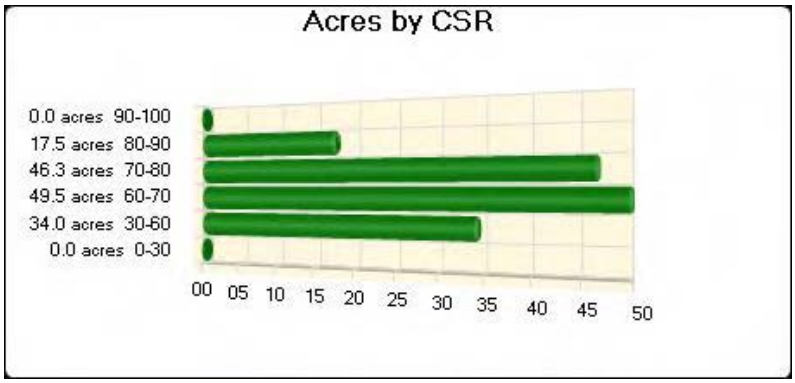
Disclaimer

The MAPS recommendations included in the book are based on the best information that we currently have available to us. The final decision as to the best methodology to be used rests with the individual producer who is aware of the variables involved in successful crop production. MAPS makes no expressed or implied warranties with respect to crop yield or successful production with respect to the information contained herein.

Corn Suitability Rating







Summary

67.27 is the weighted average CSR value. Field is 147.38 acres in size.

CSRs provide a relative ranking of all soils mapped in the state of Iowa based on their potential to be utilized for row crop production. The CSR is an index that can be used to rate one soils potential yield production against another over a period of time.

Adapted from Miller, Gerald A, 1988. Corn Suitability Ratings - An Index to Soil Productivity, Iowa State University. University Extension, Publication Pm-1168. Revised January 2002

EXA12SE

Corn Suitability Ratings
(CSR)

Corn Suitability Rating (CSR) is an index procedure developed in Iowa to rate each different kind of soil for its potential row-crop productivity. Soil profile properties and weather conditions are the dominant factors that affect productivity. Slope characteristics are major factors that determine how land should be used. Slope gradient and slope length affect potential erosion rates, water infiltration, and ease and efficiency of machine operation.

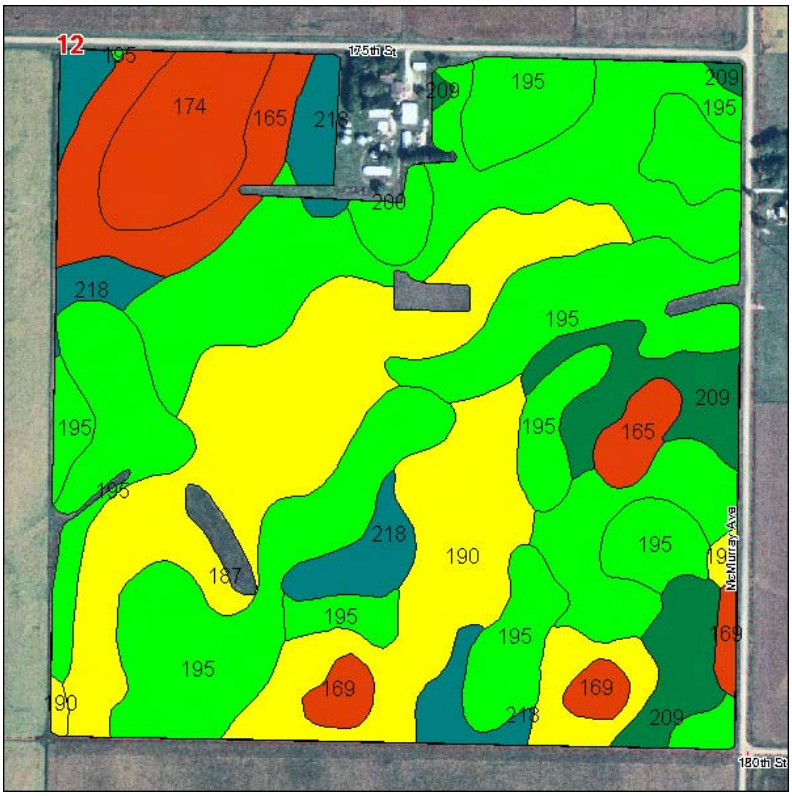
CSRs provide a relative ranking of all soils mapped in the state of Iowa based on their potential to be utilized for row-crop production. The CSR is an index that can be used to rate one soil's potential yield production against another over a period of time.

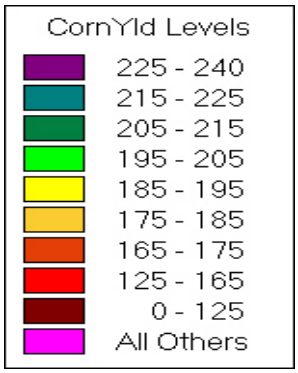
The CSR considers average weather conditions as well as the frequency of use of soil for row-crop production. Ratings range from 100 for soils that have no physical limitations, occur on minimal slopes, and can be continuously row-cropped to as low as 5 for soils with severe limitations for row crops.

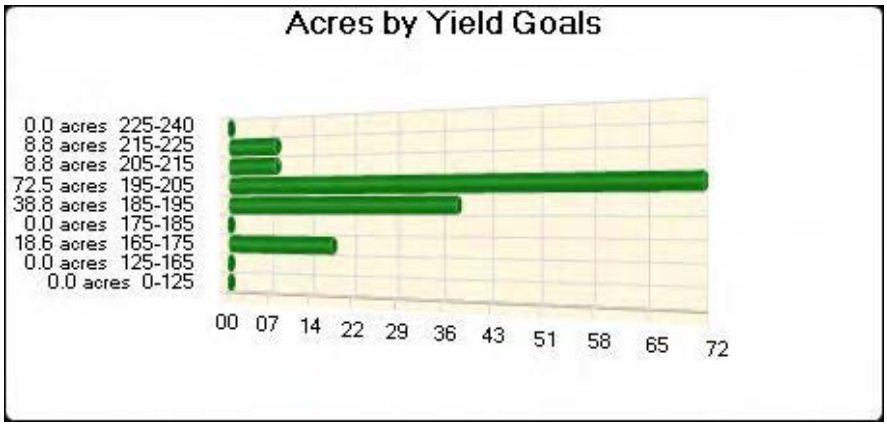
The CSR assumes: (a) adequate management, (b) natural weather conditions (no irrigation), (c) artificial drainage where required, (d) soils lower on the landscape are not affected by frequent floods, and (e) no land leveling or terracing. The CSR for a given field or farm can be modified by sandy spots, rock outcroppings, field boundaries, wet spots, and other special soil conditions.

Predicted yields are expected to change with time. CSRs are expected to remain relatively constant in relation to one another. CSRs can be used to quantify the productivity potential for individual fields, farms or larger tracts of land.

Corn Yield Goals







Weighted Averages

192.2 bu/acre is the average yield goal set for this field. Due to uncontrollable factors these yields can not be guaranteed. The production goal for this field is 28,325 total bushels of Corn.

EXA12SE

Corn Yield Goals

The MAPS program uses soil productivity along with grid sampling to generate the best possible recommendation for nutrient needs. It is obvious that not all areas of a given farm are capable of producing the same yield, therefore yield goals are assigned by productivity and recommendations are made accordingly.

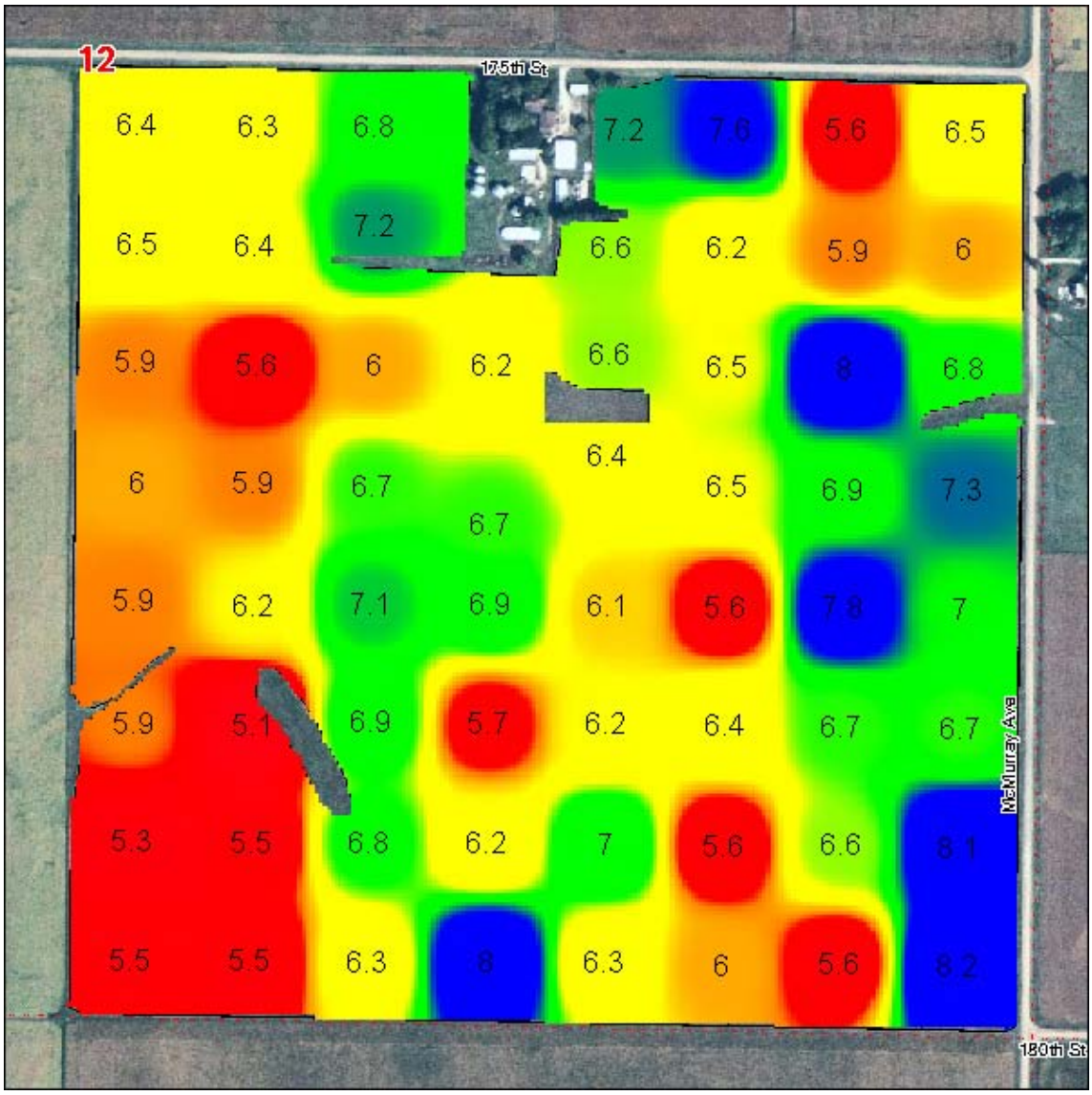
Iowa is fortunate to have most of their soil survey data in digital format allowing it to be used with a Geographic Information System. This digitized data is what is used to predict productivity for each field.

Corn yield is in bushels per acre. The benchmark yield is for weather conditions in a specific area and is based off historical yield. The yield estimate for each soil mapping unit SMU is based on kind of parent material, slope class, erosion class, natural drainage class, and nature of the subsoil in terms of rooting environment to include limiting layers, soil depth, and plant available water capacity. In addition, potential for periodic flooding and weather conditions is included.

Even though it is difficult to predict yield goals from year to year, long-term averages will give definite trends in productivity. The historical corn yields for each soil type are taken from the newly updated Soil Survey Geographic (SSURGO) Database that is established through NRCS at each county office. With the help of your local agronomist, this yield layer may be edited to meet your specific farm goals. These variable yield goals, defined by soil type, along with any adjustments that you might have made, are the base for productivity for each farm and are used for determining nutrient applications.

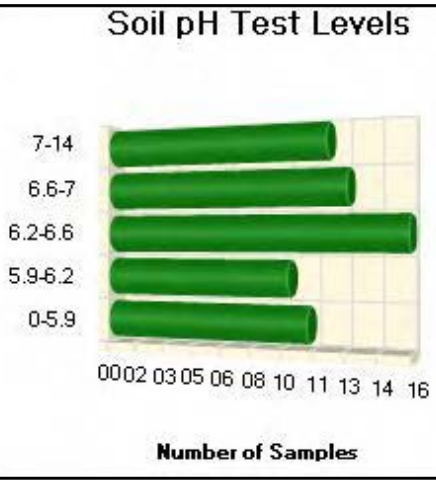
It is also important to match specific hybrids to the field situation in which the hybrid will be planted. For example, a quick emerging hybrid with good early season plant vigor may be advantageous for a soil that tends to be wet. A different hybrid may be necessary where a very high soil fertility level exists.

Soil pH Test Levels



RANGES

- Very High
- High
- Optimum
- Low
- Very Low



Statistics

MIN.	5.1
AVG.	6.5
MAX.	8.2

EXA12SE

Soil pH

Soil pH is a measure of the **degree** of soil acidity or of the **active hydrogen** in the soil solution. This hydrogen is present in the soil solution as positively charged particles or ions.

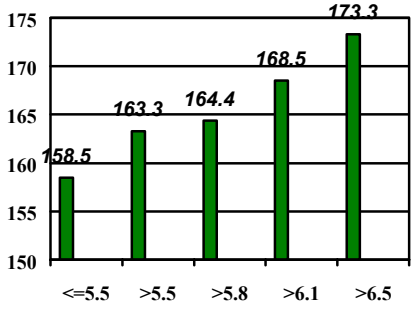
Soil pH can have a dramatic effect on the availability of nutrients as displayed by the chart to the right. Soil pH is the measure of how alkaline or acid a soil is. A pH of slightly below 7 is considered ideal for most crops. A pH <7 is considered acidic and a pH >7 is considered alkaline. Acid soils can be corrected by using aglime. Alkaline soils are very difficult to practically treat. Our soils in this area range anywhere from 5.5 to 8.0 with some exceptions on either side.

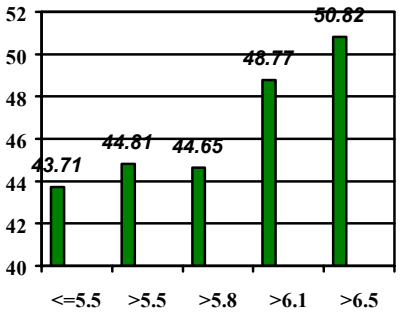
Uniform spreading on the land surface and mixing into the plow layer are assumed when making a limestone recommendation. Because lime moves very slowly in the soil and since uniform mixing is difficult to attain, it may be several years before the lime can be completely effective in neutralizing soil acidity in the plow layer. For any cropping system, apply lime before tilling the soil. Avoid spreading lime when the soil is wet, especially in the spring.

Farmers can do everything right, except one basic step... and lose profitable yields. Long-term research has shown that failing to lime acid soils can cause yield losses even with high fertility.

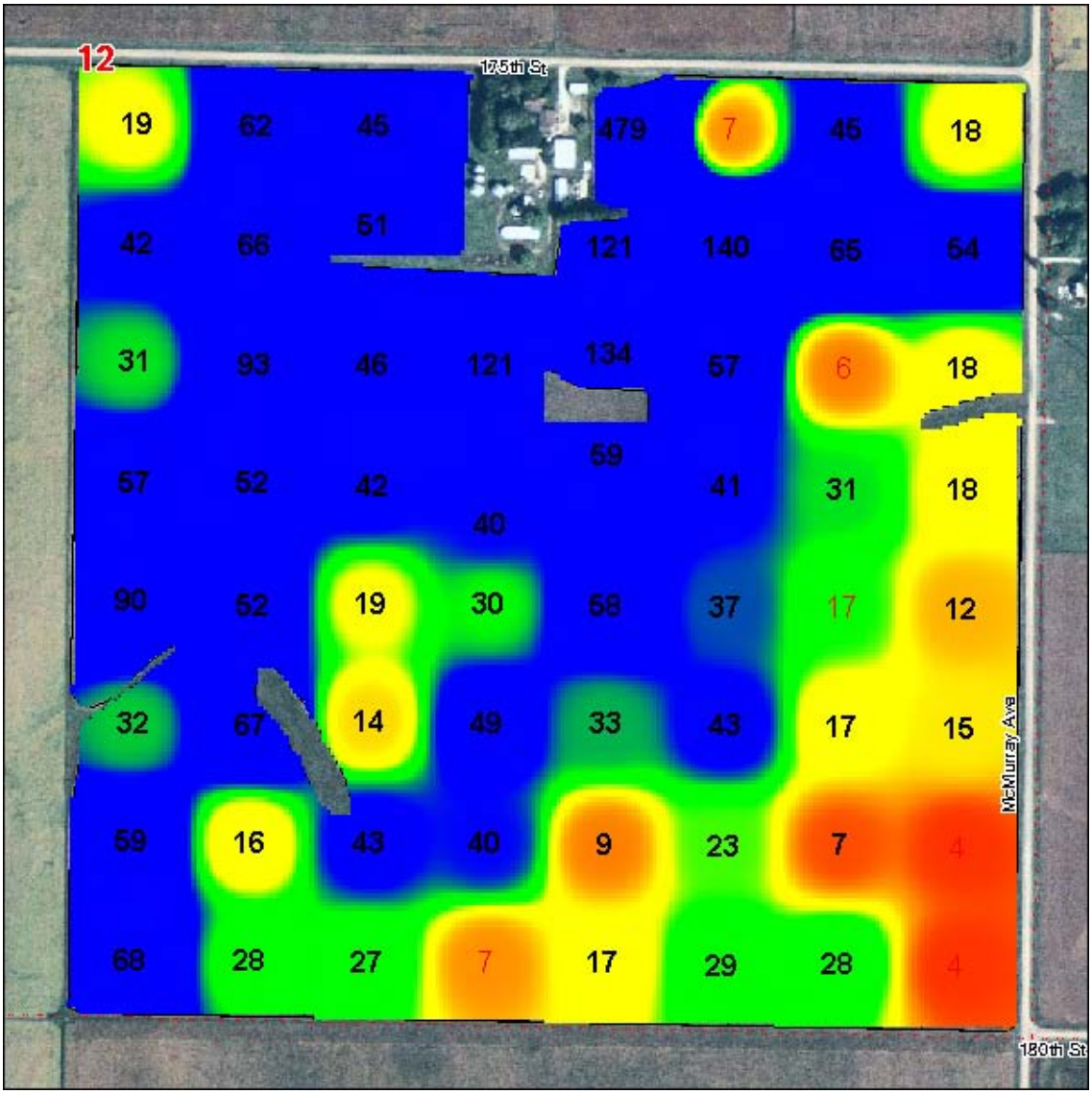
The tables at the right are results from research done at Christenson Research Farms near Humboldt, Ia. In these studies, P & K levels were at adequate levels so that the increase in yield was the effect of the pH correction.

The table on top represents corn yield response and the bottom table is for soybean response.





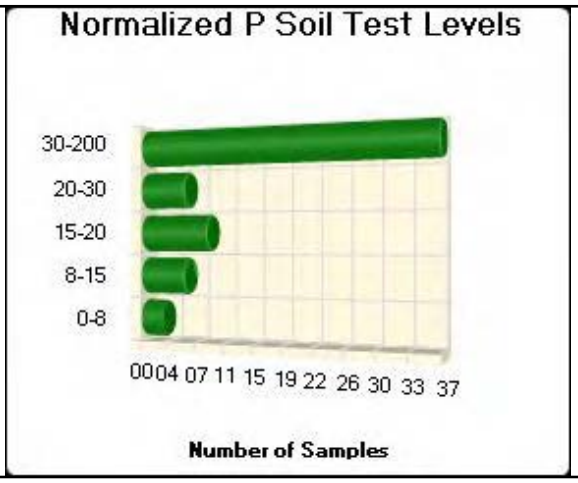
Phosphorus Soil Test Levels



(Olsen, Mehlich, or Bray Test)

RANGES

- Very High
- High
- Optimum
- Low
- Very Low



Statistics

MIN.	6.0
AVG.	49.6
MAX.	479.0

EXA12SE

Phosphorus

Phosphorus (P) is essential for crop growth. No other nutrient can be substituted for it. The plant must have P to complete its normal production cycle. It is one of the three major nutrients. The other two are nitrogen (N) and potassium (K).

Phosphorus plays a role in photosynthesis, respiration, energy storage and transfer, cell division, cell enlargement, and several other processes in the living plant. It promotes early root formation and growth. Phosphorus improves the quality of fruit, vegetable, and grain crops and is vital to seed formation. It is involved in the transfer of heredity traits from one generation to the next.

Phosphorus helps roots and seedlings develop more rapidly. It increases water use efficiency, contributes to disease resistance in some plants and hastens maturity…important to harvest and crop quality.

Phosphorus is very immobile in the soil. Due to this fact, it is important to maintain adequate levels of phosphorus to insure maximum yields. It can also become less available to the plant under cold wet conditions and at abnormal pH levels.

Pure phosphorus does not occur naturally. Commercial fertilizers consist of phosphate rock that has been strip mined at about 15 percent P and upgraded for use as fertilizer. Upgrading removes clay and other impurities. The phosphate rock is then treated with ammoniating phosphoric acid to produce what we know as diammonium phosphate or DAP.

DAP (18-46-0) represents 18 lbs. nitrogen and 46 lbs. phosphorus for every 100 lbs. material. Corn grain removes .38 lbs. phosphorus per bushel and soybeans remove .8 lbs. of phosphorus per bushel. For example, a crop rotation of 165 bushels corn and 55 bushels soybeans removes 107 lbs. of actual phosphorus or 232 lbs. of the product 18-46-0. A typical target level for phosphorus is 21 ppm.

Phosphorus (P) Recommendations

Corn

Soil Test Category:	Bray P1 or Mehlich-3 P ppm	Olsen ppm	P205 to apply
Very Low	0-8	0-5	100
Low	9-15	6-10	75
Optimum	16-20	11-14	55
High	21-30	15-20	0
Very High	31+	21+	0

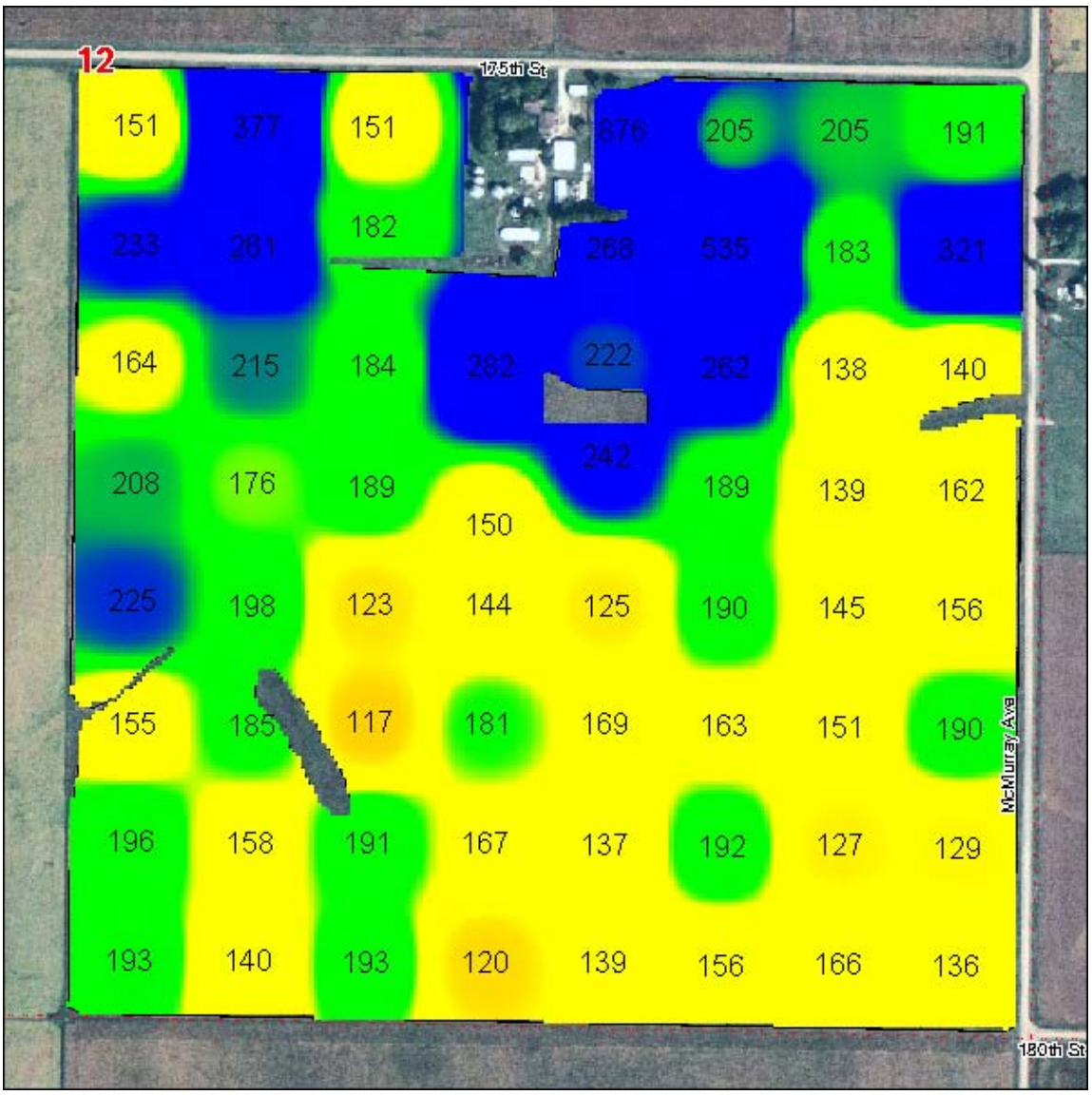
Soybeans

Soil Test Category:	Bray P1 or Mehlich-3 P ppm	Olsen ppm	P205 to apply
Very Low	0-8	0-5	80
Low	9-15	6-10	60
Optimum	16-20	11-14	40
High	21-30	15-20	0
Very High	31+	21+	0

Iowa State PM-1688/Revised November 2002

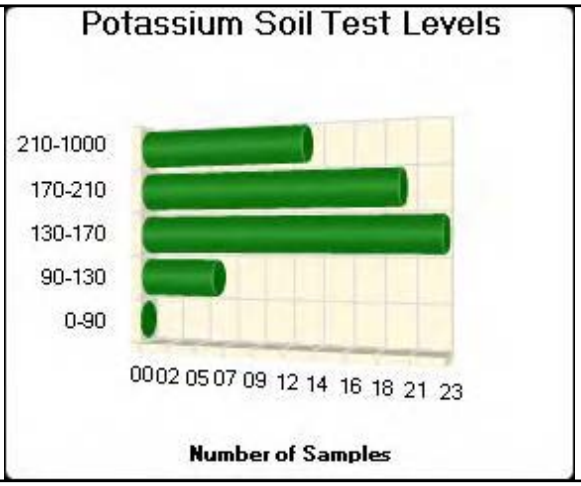
- The recommended amounts for the optimum soil test are based on nutrient removal for 150 bu. corn and 50 bu. soybeans. Adjustments are made for more suitable yield goals by soil productivity.
- Olsen tests are run on all samples with a pH>7.3

Potassium Soil Test Levels



RANGES

- Very High
- High
- Optimum
- Low
- Very Low



Statistics

MIN.	117.0
AVG.	199.3
MAX.	876.0

EXA12SE

Potassium

The chemical symbol for potassium is K, which is derived from the German word, Kalium. Potassium is another one of the major plant nutrients including nitrogen and phosphorus. No other nutrient can replace it.

Potassium has a great impact on crop quality, including increased kernel weight and kernels per ear in corn and improved oil and protein content in soybeans. Potassium is vital to photosynthesis. High K levels help increase crop tolerance to drought stress. When K is deficient, photosynthesis declines, and the plant's respiration increases. Potassium is critical to maintaining favorable plant water status. If K becomes deficient, stomates do not function properly, inhibiting photosynthesis and interfering with plant water relations. K in the cell water allows the cells to maintain high internal water pressure. More K permits the maintenance of this pressure as the plant's environment gets drier and drier. With sufficient K, plants can continue to photosynthesize and to grow through periods of dry conditions. Sufficient levels of potassium also improve seedling vigor, plant health, and stalk strength.

Potassium's importance in disease suppression cannot be overstated. Many trials have shown potash as a key element in reducing leaf blight and stalk rot in corn as well as mold and mildew in soybeans. When K helps a plant resist disease, it doesn't do it as a direct agent of control, but by strengthening the natural resistance mechanisms of the plant.

Potash (0-0-60) represents 60 lbs. K2O for every 100 lbs. material. Corn grain removes .3 lbs. K2O per bushel and soybeans remove 1.5 lbs. of K2O per bushel. For example, a crop rotation of 165 bushels corn and 55 bushels soybeans removes 132 lbs. of actual potassium or 220 lbs. of the product 0-0-60. A typical target level for potassium is 170 ppm.

Potassium (K) Recommendations

Corn

Soil Test Category:	(ppm)	K20 to apply
Very Low	0-90	130
Low	91-130	90
Optimum	131-170	45
High	171-200	0
Very High	201+	0

Soybeans

Soil Test Category:	(ppm)	K20 to apply
Very Low	0-90	120
Low	91-130	90
Optimum	131-170	75
High	171-200	0
Very High	201+	0

Iowa State Pm-1688 /Revised November 2002

- The recommended amounts for the optimum soil test are based on nutrient removal for 150 bu. corn and 50 bu. soybeans. Adjustments are made for more suitable yield goals by soil productivity.

METHODS OF FERTILIZATION

Phosphorus and Potassium Recommendations

The recommended amounts of P2O5 and K2O are based on research conducted in Iowa over many years. Applying the recommended rates for the very low and low soil test categories will result in profitable crop responses in that year and at the same time increase soil test values after crop harvest because of significant residual effects from the applied P and K. The recommended P and K rates for the optimum soil test category are based on average nutrient removal in harvested grain. The fertilization amounts shown in the following pages reflect the build levels for expected removal based on soil test levels and variable yield goals by soil type as defined in the front of this book.

There are 3 different levels of fertility build to choose from in this book. Through these 3 different recommendations, the opportunity is given to select which level of fertility you would like to achieve on each field. As nutrient levels increase, there is a decreasing probability of an *economic* yield response to applied nutrients. The percentage of P and K applications expected on average to produce a yield response within each category is *80% for very low, 65% for low, 25 % for optimum, 5% for high, and <1% for very high*, according to Iowa State University. *PM 1688 November 2002

Listed below are the target levels for the 3 different recommendations.

Yellow (Optimum) P target level = 20ppm, K target level = 160ppm

This method applies the amount of fertilizer that will build soil test levels to the Optimum range. This level will achieve the greatest *economic* response of the three levels of application. For example, high testing soils will receive less than removal and very high testing soils would receive no applications. Optimum testing soils would receive approximately crop removal rates. Low and very low testing soils would receive more than maintenance levels since an economic response can be realized in the year of application.

Green (High) P target level = 25ppm, K target level = 180ppm

This method applies the amount of fertilizer that will build soil test levels to the High range. Additional amounts are applied to low testing fields or parts of the field so that in time the soil test rises to a high level. Less than maintenance amounts are applied to very high testing parts of the field so in time the soil test level falls to a high level. When soil tests are maintained at a high level, fertility is removed as a yield-limiting factor no matter how favorable or unfavorable other agronomic conditions are. No matter where soil tests are maintained, (low, medium or high), the same amount of nutrients are required to produce a specified number of bushels of corn, soybeans or other crop. Therefore, once the ideal agronomic level of soil fertility is reached, there is no additional cost over maintenance to retain that level.

Blue (Very High) P target level = 30ppm, K target level = 200ppm

This method also applies the amount of fertilizer that the crop is expected to remove as well as build fertility levels to the Very High range. This recommendation would apply to those who want to insure sufficient levels for an extended period of time, not necessarily looking at most economic yield, but more as an investment option.

**Recommendations in book represent individual crop year needs.*

NUTRIENT RECOMMENDATIONS

The nutrient recommendations on the following pages are expressed in pounds of *actual* nutrient, not in pounds of material, and have no machine constraints as they will when making an actual application file. Since there are numerous materials that may be used to acquire these nutrient levels, with many different formulations, we've chosen to display what is actually needed and let you and your advisor decide which products will be used to attain the goals.

For example:
Lime recommendations are expressed as 100% ECCE (effective calcium carbonate equivalent). If a field calls for 30,000 total pounds of ECCE, and the lime you are using is 75% effective (1500 ECCE/ton), then take 30,000 / 1500 = 20 tons lime. <u>The lime recommendation is a one-time application for the 4 year life of the samples.</u>

Machine constraints also need to be accounted for depending on the material being applied. Lime applicators usually go no lower than ½ -1 ton per acre, and no higher than 3.5 - 4 tons, in that spread patterns are difficult to maintain with rates outside of these ranges.

Other dry products such as MAP, DAP, and Potash, have constraints as well, in that machines are unable to apply properly at very low rates. Your local agronomic advisor will be able to explain what the machine constraints are for each of these materials.

Nitrogen rates, if recommended, are in pounds of total N required for 1st year corn following soybeans. If multiple products are applied that contain nitrogen, the total of all products applied will equal the total N required if calculated correctly. Make sure you discuss with your advisor all sources intended on being used, such as starter fertilizers or split applications.

<u>Phosphorus and Potassium recommendation pages are for 1 crop year, and if making a multiple year application, need to be added together</u>
(example: 2 year corn/soybean rotation).

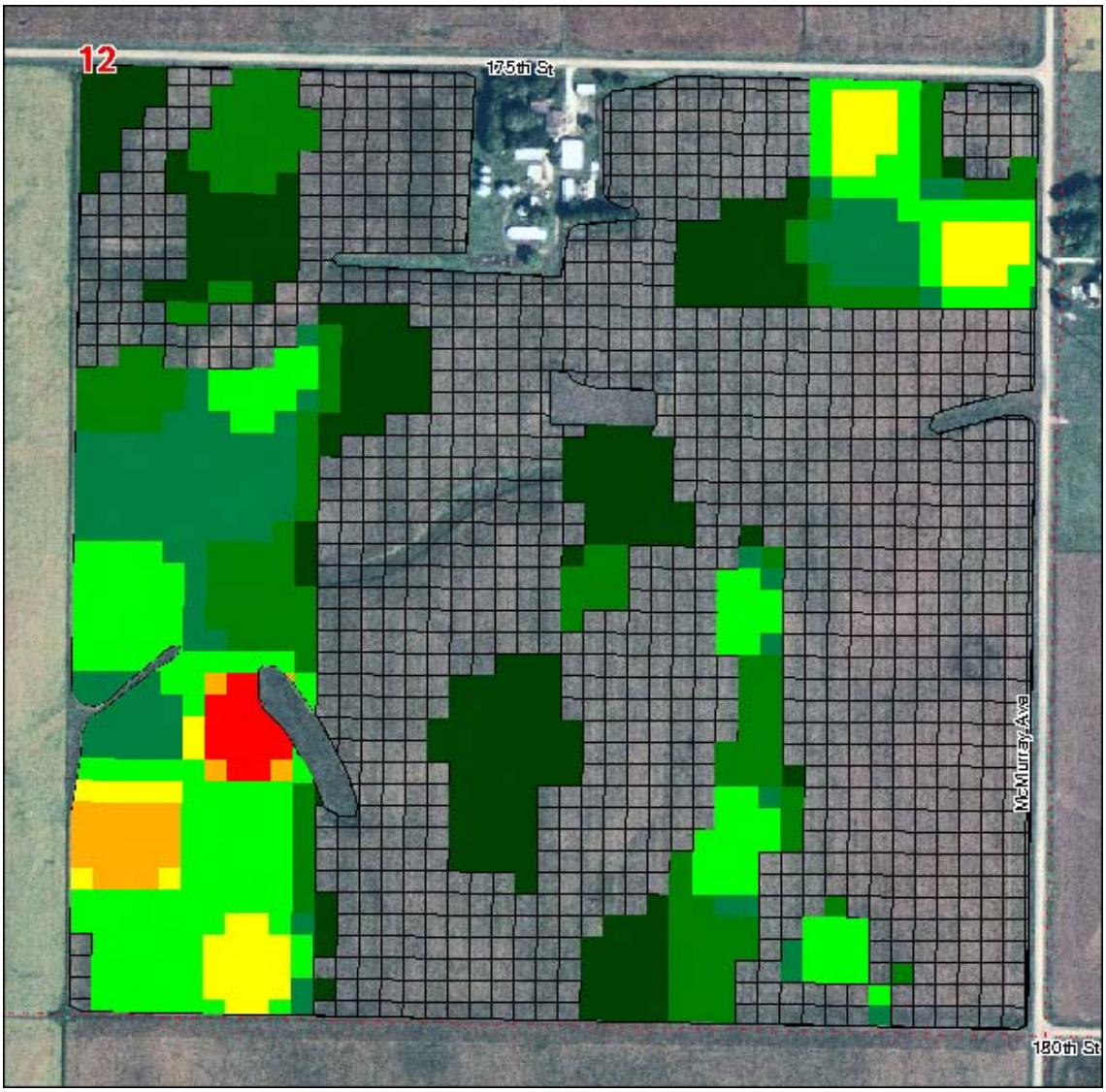
Use these pages only as a guideline as to approximately how much nutrient will be required to achieve your goals.

ECCE to 6.5

INNOVATIVE FARMER

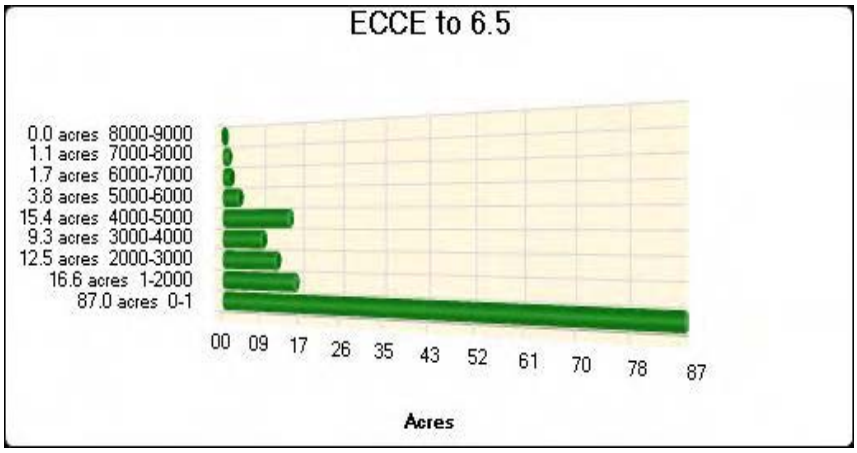
County Name

Township / Section #



ECCE65 Levels

- 8000 - 9000
- 7000 - 8000
- 6000 - 7000
- 5000 - 6000
- 4000 - 5000
- 3000 - 4000
- 2000 - 3000
- 1 - 2000
- 0 - 1
- All Others



UNITS	
Min.	0.0
Avg.	1286.01
Max.	7869.6
Acres	147.38
Total	189532.8

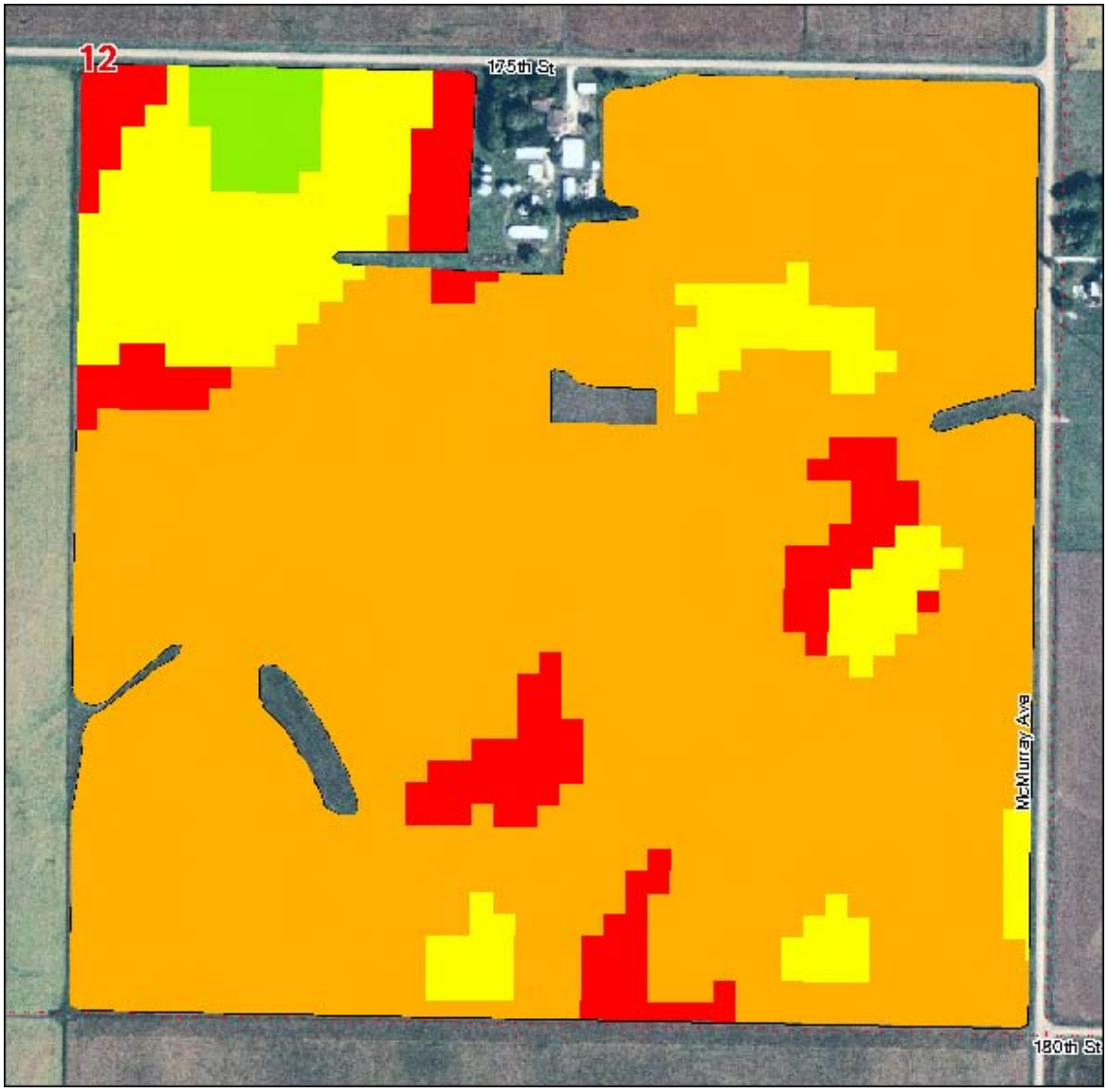
EXA12SE

Corn N

INNOVATIVE FARMER

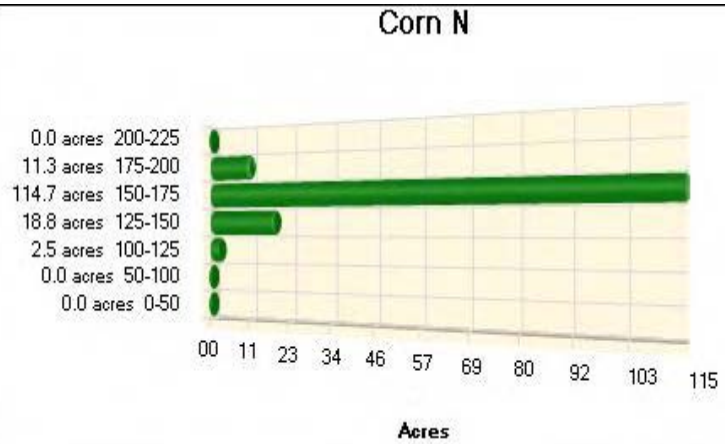
County Name

Township / Section #



CornN Levels

- 200 - 225
- 175 - 200
- 150 - 175
- 125 - 150
- 100 - 125
- 50 - 100
- 0 - 50
- All Others



UNITS	
MIN.	107.6
AVG.	159.62
MAX.	194.5
Acres	147.38
Total	23524.2

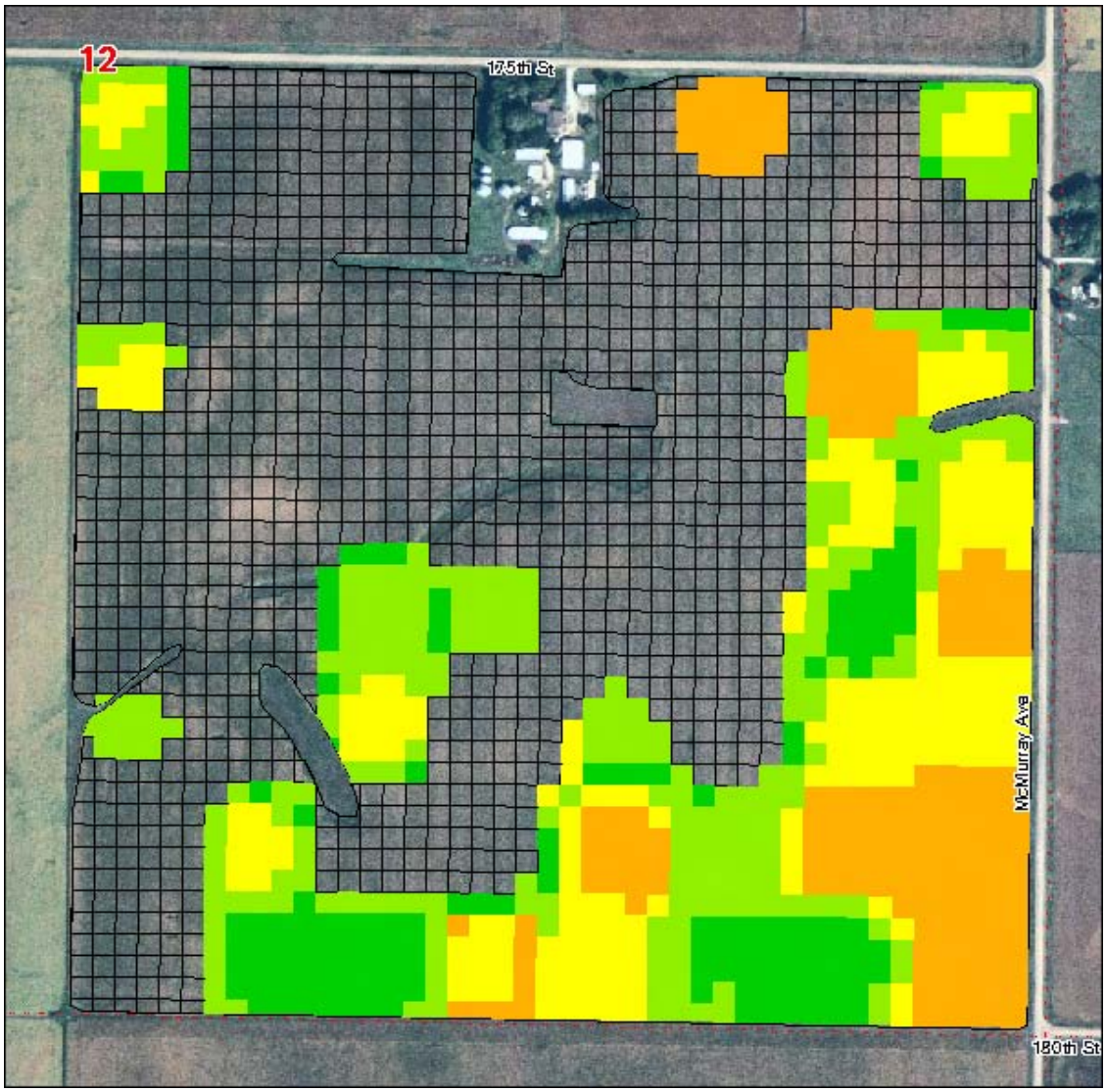
EXA12SE

Corn Green P

INNOVATIVE FARMER

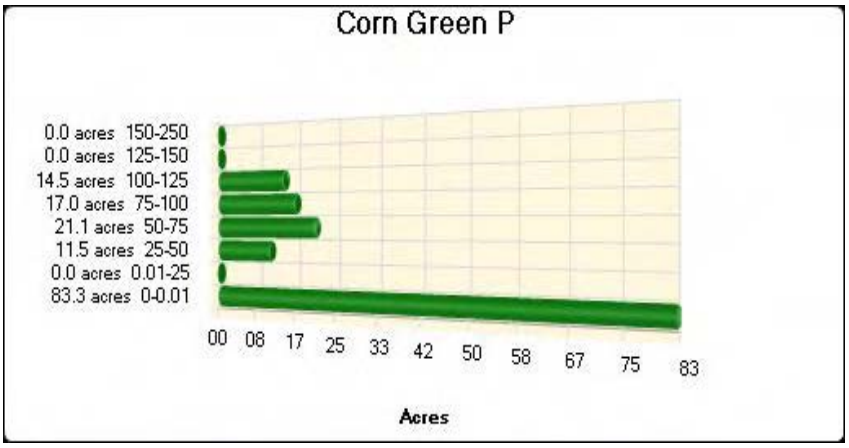
County Name

Township / Section #



CornGreenP Levels

150	- 250
125	- 150
100	- 125
75	- 100
50	- 75
25	- 50
0.01	- 25
0	- 0.01
All Others	



UNITS	
Min.	0.0
Avg.	34.08
Max.	118.4
Acres	147.38
Total	5022.2

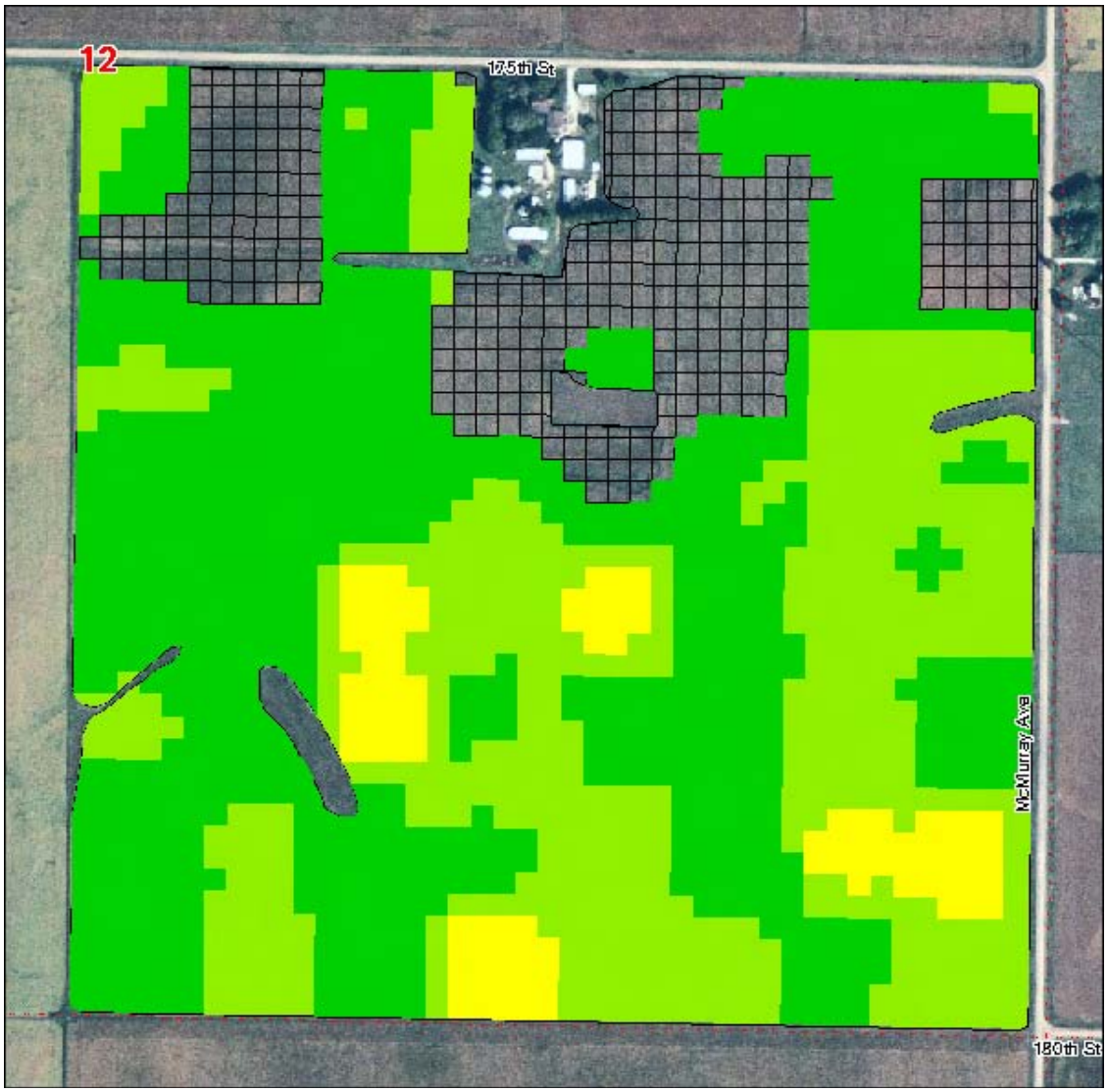
EXA12SE

Corn Green K

INNOVATIVE FARMER

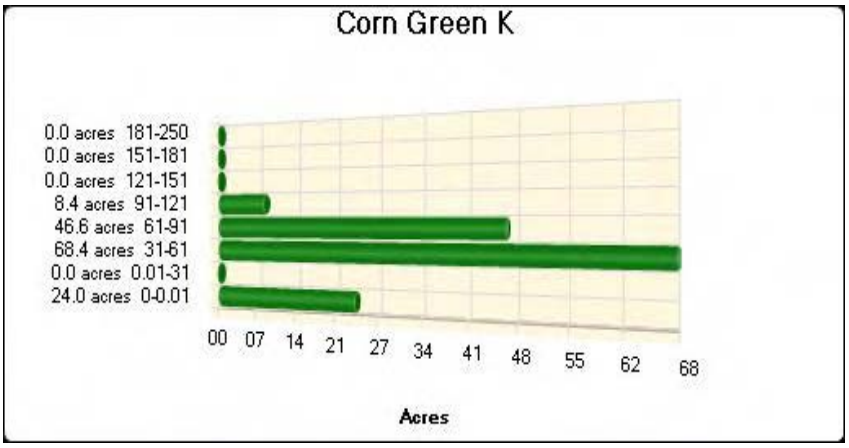
County Name

Township / Section #



CornGreenK Levels

181	- 250
151	- 181
121	- 151
91	- 121
61	- 91
31	- 61
0.01	- 31
0	- 0.01
All Others	



UNITS	
Min.	0.0
Avg.	54.47
Max.	110.5
Acres	147.38
Total	8027.9

EXA12SE

SPRING COST COMPARISON FOLLOWING SOYBEANS

INNOVATIVE FARMER
FARM: EXAMPLE
FIELD: ALL
FIELD CODE: EXA12SE
ACRES: 147.4
1/28/2009 9:48:05 AM

CCID # 14675
COMPANY NAME
LOCATION: ANYWHERE
SALESMAN: TOP SELLER
CROP 1: CORN
CROP 2: SOYBEANS

	Product	lbs/Acre	Cost/Acre	N	P	K	Zn
BLUE	NH3 FERTILIZER	157.8	$72.35	129	0	0	0.0
	32% LIQUID FERTILIZER	407.1	$90.59	130	0	0	0.0
	28% LIQUID FERTILIZER	457.8	$89.13	128	0	0	0.0
	46-0-0 UREA BULK FERT	281.5	$96.49	129	0	0	0.0
	18-46-0 DAP BULK FERT	170.7	$90.05	31	79	0	0.0
	0-0-60 POTASH BULK FERT	232.4	$98.65	0	0	139	0.0
	ZINC SULFATE 33.0% FERT	3.2	$3.46	0	0	0	1.0
	TOTALS			**160**	**79**	**139**	**1.0**
GREEN	NH3 FERTILIZER	159.6	$73.18	131	0	0	0.0
	32% LIQUID FERTILIZER	411.2	$91.50	132	0	0	0.0
	28% LIQUID FERTILIZER	463.9	$90.32	130	0	0	0.0
	46-0-0 UREA BULK FERT	284.7	$97.59	131	0	0	0.0
	18-46-0 DAP BULK FERT	160.3	$84.56	29	74	0	0.0
	0-0-60 POTASH BULK FERT	198.2	$84.12	0	0	119	0.0
	ZINC SULFATE 33.0% FERT	3.2	$3.46	0	0	0	1.0
	TOTALS			**160**	**74**	**119**	**1.0**
YELLOW	NH3 FERTILIZER	163.4	$74.90	134	0	0	0.0
	32% LIQUID FERTILIZER	420.6	$93.58	135	0	0	0.0
	28% LIQUID FERTILIZER	475.8	$92.64	133	0	0	0.0
	46-0-0 UREA BULK FERT	291.4	$99.88	134	0	0	0.0
	18-46-0 DAP BULK FERT	140.1	$73.88	25	64	0	0.0
	0-0-60 POTASH BULK FERT	173.9	$73.83	0	0	104	0.0
	ZINC SULFATE 33.0% FERT	3.2	$3.46	0	0	0	1.0
	TOTALS			**159**	**64**	**104**	**1.0**
LIME	LIME (F.D. & MOORE)	1919.0	$38.00	ECCE per acre - 1439			
REMOVAL	NH3 FERTILIZER	150.2	$68.85	123	0	0	0.0
Corn 183.9	18-46-0 DAP BULK FERT	245.1	$129.31	44	113	0	0.0
Beans 53.6	0-0-60 POTASH BULK FERT	226.0	$95.92	0	0	136	0.0
	ZINC SULFATE 33.0% FERT	15.2	$16.52	0	0	0	5.0
	TOTALS			**167**	**113**	**136**	**5.0**

REMOVAL based on average of yield goals assigned.

Prices are subject to change and are for comparison purposes only. Many factors such as machine and controller constraints, sample point distribution, clipping by soil types, and different past crops will cause final amounts to be slightly different.

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