## Indiana Aglime Protects Your **Green**



### **INSIDE:** Your 2015-2016 Indiana Aglime Quality Report





Acidic soil decreases fertilizer effectiveness. Balance your soil pH with Indiana Aglime.

	Pe	ercent Utilize	Foutilitary	Cost of			
Soil Acidity	Nitrogen	Phosphate	Potash	Wasted	Fertilizer Wasted		
Extremely Acid 4.5pH	30%	23%	33%	75%	\$177.60/ac		
Very Strong Acid 5.0pH	53%	34%	52%	54%	\$127.87/ac		
Strong Acid 5.5pH	77%	48%	77%	33%	\$78.14/ac		
Medium Acid 6.0pH	89%	52%	100%	20%	\$47.36/ac		
Neutral 7.0pH	100%	100%	100%	0%	\$0/ac		

Based on a conservative application of 200N, 100P and 100K, \$236.80 per acre - August 2015 average pricing









# INDIANA AGLIME PROTECTS Your Investment

Soils naturally progress toward low pH, resulting in But today, agricultural trends and acidic soil. fertilizer treatments are accelerating this natural progression. Why is this a problem? Because acidic soils undermine the effectiveness of expensive fertilizers and cause a significant yield drag.

To protect your investment and your yields, balance your soil pH with Indiana Aglime.

# Indiana Aglime ensures the full value of expensive fertilizers • Acidic soil increases the solubility and toxicity of aluminum iron and manganese

- Acidic soils inhibit a plant's ability to uptake and use applied nutrients. When soil pH moves below 6.0, over 20% of applied fertilizer is wasted.
- Grubs and weeds, such as vine weed, thistle, dandelion, butter print and horsetail, thrive in acidic soil.
- toxicity of aluminum, iron and manganese, which adversely affects your crop yields.
- Acidic soil reduces the breakdown of applied fertilizers into usable plant nutrients. Microbial bacteria necessary for breaking down fertilizers cannot thrive in acidic soils. Without bacteria, fertilizers lay inert until they are washed away by leaching, or until a more balanced soil pH is restored.



## INDIANA AGLIME PROTECTS Your Yields

Indiana Aglime is a natural soil remedy, bolstering crop yields through a number of benefits. When your soil is too acidic, apply Indiana Aglime to:

- Balance the soil pH, optimizing your plants' ability to uptake applied fertilizers.
- Slow the leaching of expensive fertilizers below the root zone.
- Add valuable nutrients such as calcium and magnesium back into your soil.
- Improve soil tilth by increasing the number of microbial bacteria that aid in the decomposition of agricultural residue, such as corn stalks and other plant matter.
- Promote deeper root growth in dry conditions.
- Improve drainage in wet conditions.



#### Microbial Bacteria thrive in Neutral soil Indiana Aglime balances your soil pH

Extremely Acidic	4.4 pH	1.5 million Bacteria
Strongly Acidic	5.2 pH	7.9 million Bacteria
Mildly Acidic	6.4 pH	12.3 million Bacteria
Neutral Soil	7.0 pH	14.9 million Bacteria

## INDIANA AGLIME PROTECTS Your Environment

Indiana Aglime helps to keep water supplies clean and healthy by reducing the amount of nitrates and other fertilizer components that otherwise seep into the groundwater.

Furthermore, Indiana Aglime is a cost-efficient remedy for treating acidification in lakes, reservoirs and ponds. It reduces the toxic effects of aluminum, lead, zinc and other metals harmful to humans and aquatic life.

By adjusting the pH in water, Indiana Aglime supports the survival and reproduction of many fish populations and adds calcium, which aids in the growth and development of bones, scales and shells.





## YOUR INDIANA AGLIME Buyers Guide

#### Test your soil

Regular soil tests provide vital information used to determine the best treatment plan for your specific soil needs. Soil pH, fertility, drainage, organic decomposition and other factors derived from the tests will develop the plan for healthy soil maintenance and optimum yield potential.

**How often you should test your soil** depends on a number of variables, including soil type, crops grown, amount of rain, irrigation tools, type and amount of applied fertilizer, and other farming practices. As a general rule, experts recommend testing your soil every 2 to 3 years.

**How deep you should take your soil samples** is a science, but, in general, samples should be taken at 2, 4 and 6 inches from at least three different locations for every two acres.

**It's important to note:** every laboratory uses its own standard of particle size when recommending Indiana Aglime based on soil test results. Learn your lab's particle-size standard to ensure you buy the correct amount and type of Indiana Aglime.

#### AGLIME EFFECTIVENESS BY PARTICLE SIZE AND RATE

Physical Description and Use	Particle Size	Within 1 Year	Within 4 Years
Coarse: like sand with fine particles •For sustained pH adjustment •To add calcium or magnesium •For soil treatment	Between the #8 and #60 sieve	~50%	100%
Fine: very fine to pulverized •For rapid pH adjustment •To add calcium or magnesium •For soil treatment •When buyer desires the full value of aglime within the first year	Passing the #60 sieve	100%	Offers no sustained benefit after first year



#### **Particle Size Matters**

Common perception is that aglime is a slow-acting material with little to no results until one or two years after application. This is only true for particle sizes larger than that passing through a #8mesh sieve.

Particles passing through a #60-mesh sieve have an immediate effect upon contact with the soil, and are fully used within one year.

Particles passing through a #100-mesh sieve are fully used within one month.

## READING THE Indiana Aglime Quality Report

The Indiana Aglime Quality Report indicates the percentage of elemental calcium (Ca) and magnesium (Mg) inherent in the aglime you can buy.

**Calcium** is necessary for organisms that break down and transform unusable nitrates in the soil into usable plant nutrients. Calcium may be deficient in soils where lime has not been applied, where potash fertilizer is used, or where crops are subject to drought.

**Magnesium** may be deficient in some soils. Dolomitic or high magnesium Indiana Aglime is the most economical way to add this precious nutrient back into your fields.

#### **PARTICLE SIZE + PURITY = RNV**

Understanding the significance of these two variables is key to making the wisest aglime sourcing selection for optimum results and value.

#### **Particle Size Sieve Analysis**

Particle size has a bearing on how fast Indiana Aglime will react in your soil and is depicted by the percent passing through a specified sieve size. #8 and #60 are the most commonly used measures.

Acidic soils needing an immediate pH balance adjustment call for a high percent of fine particles small enough to pass through #60 sieve.

To ensure full use of applied fertilizers, specify an Indiana Aglime product with a mix of coarse and fine particles, ensuring both a quick and sustained interaction.

#### **Purity CCE NV Percent**

Chemical purity is defined as "CCE NV percent" (or Calcium Carbonate Equivalent Neutralizing Value Percent).

Simply stated, CCE NV is a measure of an Indiana Aglime product's ability to neutralize soil acidity, relative to that of pure calcium carbonate. For example, a CCE of 100 is equal to pure calcium carbonate.

Therefore, the higher the aglime product's CCE, the less of it is needed to neutralize the soil.

#### **RNV INTERACTION**

This figure identifies the overall effectiveness of any particular Indiana Aglime product. The RNV percent, or Relative Neutralizing Value, indicates the interaction between particle size and chemical purity during the first year.









## aglime.org

(Mesh Size)



#### 2015-2016 Sieve Analysis **Indiana Aglime Quality Report**

India	na Aglime	<b>Quality Report</b>		Percent Passing			CCE N	•	3	RN
County	Producer Member	Contact	Sample	#8	#60	#100	W%	Ca%	%pl	IV%
Allen	HANSON AGGREGATES MIDWEST Ardmore Quarry - Fort Wayne, IN	Kevin Cross   (260) 747-3105 kevin.cross@lehighhanson.com		100	95	79	97.9	21.2	11.7	95.4
	Hanson Aggregates Midwest Midwest Quarry - Woodburn, IN	Rick Hullinger   (260) 747-3105 rick.hullinger@hanson.com		98	95	91	91.4	21.5	9.7	87.9
	STONE-STREET QUARRIES, INC. Poe Quarry - Hoagland, IN	Jeff Fee   (260) 414-4767 jeffssq@frontier.com		89	37	31	94.7	20.2	11.7	59.4
Bartholomew	U.S. AGGREGATES, INC.	Jordan Holt   (317) 538-8467	Sample A	94	43	37	98.1	27.3	7.3	67.3
Blackford		Mike Gross   (765) 661-0312	Sample B	97	37	32	97.8	24.4	9.2	65.4
DIACKIOIU	Montpelier Plant - Montpelier, IN	mike.gross@irvmat.com		100	45	35	96.3	20.8	11.3	69.7
Carroll	U.S. AGGREGATES, INC. Delphi Plant - Delphi, IN	Caleb Brown   (260) 726-7642 caleb.brown@usagg.com		99	27	21	105.2	22.1	12.5	66.5
Cass	ENGINEERING AGGREGATES CORP.	Tom Busch   (574) 753-5506	Sample A	94	39	34	96.5	25.7	7.9	64.0
	Logansport Plant - Logansport, IN	tomb@engagg.com	Sample B	95	40	35	97.7	20.8	11.4	65.9
Clark	MULZER CRUSHED STONE, INC.	Greg Hagedorn   (812) 395-8017 greghagedorn@mulzer.com	Sample A	83	27	22	99.6	21.1	12.0	55.1
	Charlestown, IN		Sample B	81	31	26	97.9	24.1	8.9	54.7
Crawford	MULZER CRUSHED STONE, INC. Cape Sandy Quarry - Leavenworth, IN	Greg Hagedorn   (812) 395-8017 greghagedorn@mulzer.com		100	40	31	94.1	35.3	1.7	65.6
	MULZER CRUSHED STONE, INC. Temple Quarry - English, IN	Greg Hagedorn   (812) 395-8017 greghagedorn@mulzer.com		95	33	27	95.4	34.2	2.4	61.2
	MULZER CRUSHED STONE, INC. Tower Quarry - Leavenworth, IN	Greg Hagedorn   (812) 395-8017 greghagedorn@mulzer.com		97	27	20	90.9	35.6	1.0	56.3
Decatur	New Point Stone Company Harris City Quarry - Greensburg, IN	Steve Wanstrath   (812) 852-4225 stevew@newpointstone.com		86	25	21	91.9	31.7	3.1	50.8
	NEW POINT STONE COMPANY New Point Quarry - New Point, IN	Steve Wanstrath   (812) 852-4225 stevew@newpointstone.com		95	36	30	92.8	28.2	5.1	60.4
Franklin	NEW POINT STONE COMPANY Derbyshire Quarry - Laurel, IN	Steve Wanstrath   (812) 852-4225 stevew@newpointstone.com	Sample A	94	39	32	95.2	21.1	10.7	63.0
			Sample B	94	42	37	83.9	19.5	8.9	57.2
Hamilton	IRVING MATERIALS, INC. Stony Creek - Noblesville, IN	Mike Gross   (765) 661-0312 mike.gross@irvmat.com		99	47	40	94.2	24.9	7.8	68.7
Harrison	MULZER CRUSHED STONE, INC. New Amsterdam Quarry - New Amsterdam, IN	Greg Hagedorn   (812) 395-8017 greghagedorn@mulzer.com		92	34	28	94.4	30.1	4.5	59.4
Howard	MARTIN MARIETTA AGGREGATES Kokomo Plant - Kokomo, IN	Brent Leininger   (765) 459-3194 brent.leininger@martinmarietta.com		98	38	32	88.4	30.9	2.2	59.8
Huntington	IRVING MATERIALS, INC. Huntington Plant - Huntington, IN	Mike Gross   (765) 661-0312 mike.gross@irvmat.com		93	40	30	95.4	21.1	11.2	63.3
Jay	U.S. AGGREGATES, INC. Portland Plant - Portland, IN	Caleb Brown   (260) 726-7642 caleb.brown@usagg.com		100	99	96	107.5	22.1	12.8	106.9
Lake	U.S. AGGREGATES, INC. Lowell Plant - Lowell, IN	Paul Overton   (219) 696-5467 paul.overton@usagg.com		73	18	14	106.7	22.1	12.5	48.8
Lawrence	ROGERS GROUP, INC. Mitchell Crushed Stone - Mitchell, IN	Craig Huffine   (812) 849-3530 craig.huffine@rogersgroupinc.com		88	29	22	95.8	37.5	0.7	55.9
	ROGERS GROUP, INC.	Craig Huffine   (812) 279-3539	Sample A	100	95	82	92.5	35.7	1.2	90.0
	Sieboldt Quarry - Springville, IN	craig.huffine@rogersgroupinc.com	Sample B	76	25	21	94.9	35.8	1.5	48.1
	U.S. AGGREGATES, INC. Springville Plant - Springville, IN	Jordan Holt   (317) 538-8467 jordan.holt@usagg.com		97	43	34	82.1	32.4	1.4	57.3

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County	Producer Member	Contact	Sample	#8	#60	#100	٧%	a%	%p	%۸
Marion	HANSON AGGREGATES NORTH REGION	Don Roadruck I (317) 491-0681	Sample A	99	42	34	94.3	29.4	4.9	66.4
	Indianapolis, IN	don.roadruck@hanson.com	Sample B	98	34	27	94.1	37.4	0.5	62.0
	MARTIN MARIETTA AGGREGATES Kentucky Avenue Mine - Indianapolis, IN	Brent Leininger   (765) 459-3194 brent.leininger@martinmarietta.com		84	27	22	94.4	37.8	0.7	52.3
Miami	HANSON AGGREGATES MIDWEST LLC Milner Quarry - Peru, IN	Rick Hullinger   (260) 747-3105 rick.hullinger@hanson.com		98	47	43	104.0	22.3	12.0	75.6
	IRVING MATERIALS, INC. Peru Plant - Peru, IN	Mike Gross   (765) 473-5578 mike.gross@irvmat.com		96	33	28	89.8	28.6	4.1	57.8
Monroe	ROGERS GROUP, INC. Bloomington Plant - Bloomington, IN	Chris Hill   (317) 201-6781 chris.hill@rogersgroupinc.com		89	35	28	94.7	34.7	2.5	58.8
Montgomery	PLANT TUFF, INC. Whitesville Mill Service - Crawfordsville, IN	Joe VanderWerff   (855) 85-PLANT jvanderwerff@planttuff.com		98	33	24	99.4	21.1	7.2	64.8
Newton	ROGERS GROUP, INC.	Adam Regich   (765) 414-6845	Sample A	100	33	25	95.8	23.0	9.2	63.8
	Newton County Stone - Kentland, IN	adam.regich@rogersgroupinc.com	Sample B	96	37	31	95.9	23.4	9.2	64.0
Porter	PLANT TUFF, INC. Burns Harbor, IN	Joe VanderWerff   (855) 85-PLANT jvanderwerff@planttuff.com		99	27	21	94.1	20.9	6.7	59.2
Pulaski	HANSON MATERIAL SERVICE	Tom Bryja   (800) 691-9777 S   tom.bryja@hanson.com S	Sample A	93	28	23	104.8	21.6	12.4	63.2
	Francesville Plant - Francesville, IN		Sample B	98	38	30	104.8	22.0	12.7	71.3
	U.S. AGGREGATES, INC. Paul Overton   (219) 567-9155 Francesville Plant - Francesville, IN paul.overton@usagg.com		Sample A	88	16	9	106.6	21.9	12.5	55.3
		Paul Overton   (219) 567-9155	Sample B	97	53	43	106.8	22.0	12.6	79.9
		Sample C	64	18	15	106.9	22.0	12.7	44.2	
Putnam	HANSON AGGREGATES MIDWEST LLC Putnamville Quarry - Cloverdale, IN	Joey Thomas   (765) 653-7205 sj.thomas@hanson.com		98	39	31	94.6	37.0	0.8	64.7
	MARTIN MARIETTA AGGREGATES Cloverdale Quarry - Cloverdale, IN	Brent Leininger   (765) 459-3194 brent.leininger@martinmarietta.com		93	32	26	90.5	36.3	0.4	56.4
	NALC, LLC 243 Quarry - Cloverdale, IN	Tom Hingst (765) 653-4100   (317) 937-8958 thingst@nalimestone.com		89	30	25	95.5	34.5	1.9	56.9
Ripley	New Point Stone Company Napoleon Plant - Napoleon, IN	Steve Wanstrath   (812) 852-4225 stevew@newpointstone.com	Sample A	97	38	32	94.4	34.5	1.8	63.8
			Sample B	98	47	38	95.0	36.6	0.9	68.7
Rush	RUSH COUNTY STONE CO., INC.	Bo Humphries   (765) 629-2211 bo.humphries@jrjnet.com	Sample A	82	33	29	101.8	23.7	10.5	58.2
	Milroy Plant - Milroy, IN		Sample B	80	30	26	91.8	27.7	5.5	50.5
Shelby	NEW POINT STONE COMPANY	Steve Wanstrath   (812) 852-4225 stevew@newpointstone.com	Sample A	85	21	19	104.1	23.1	11.1	55.3
	St. Paul Plant - St. Paul, IN		Sample B	93	37	31	91.6	32.0	2.7	59.6
	U.S. Aggregates, INC.	Jordan Holt   (317) 538-8467	Sample A	86	32	28	101.2	24.8	9.3	59.6
	Cave Plant - Flat Rock, IN	jordan.holt@usagg.com	Sample B	89	21	17	95.4	32.5	3.0	52.2
Wabash	WEST PLAINS MINING, LLC Kentner Creek Quarry - Wabash, IN	Tim Langley   (260) 571-7054 tim.langley@westplainsmining.com		93	38	33	97.8	36.9	1.7	64.3
Wayne	BARRETT PAVING MATERIALS, INC.	Mark Comer	Sample A	100	52	42	100.9	25.4	9.1	76.4
	Richmond Plant - Richmond, IN	mcomer@barrettpaving.com	Sample B	88	32	25	98.9	24.4	9.2	59.5
White	HANSON MATERIAL SERVICE Plant #579 - Monon, IN	Tom Bryja   (800) 691-9777 tom.bryja@hanson.com		100	28	21	103.9	22.1	12.4	66.7
	U.S. AGGREGATES, INC. Monon Plant - Monon, IN	Paul Overton   (219) 567-9155 paul.overton@usagg.com		87	14	7	104.9	22.0	12.4	52.8
Whitley	PLANT TUFF, INC. Columbia City Mill Services - Columbia City, IN	Joe VanderWerff   (855) 85-PLANT jvanderwerff@planttuff.com		78	34	27	102.6	24.4	5.9	57.7

\*Samples taken by The Aglime Council in 2015. Samples tested by Bowser-Morner Testing Laboratories, Dayton, OH, ISO 17025 Accredited Laboratory

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