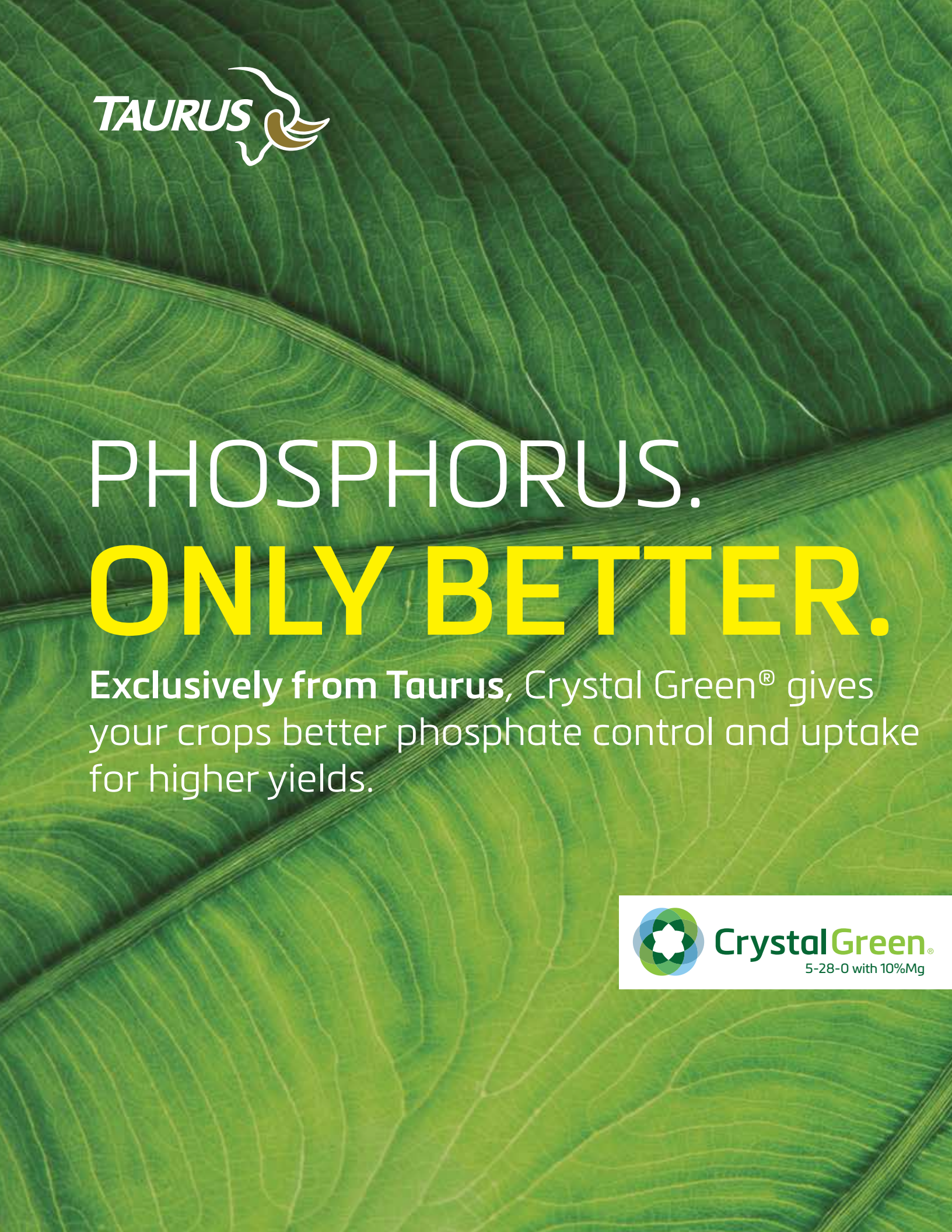

TAURUS
PHOSPHORUS.
ONLY BETTER.
Exclusively from Taurus, Crystal Green® gives your crops better phosphate control and uptake for higher yields.
CrystalGreen®
5-28-0 with 10%Mg

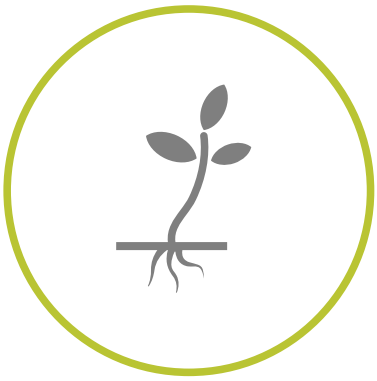
GUARANTEED ANALYSIS

Total Nitrogen (N).....5%
5% ammoniacal nitrogen
Available Phosphate (P_2O_5).....28%
Magnesium (Mg) 10%

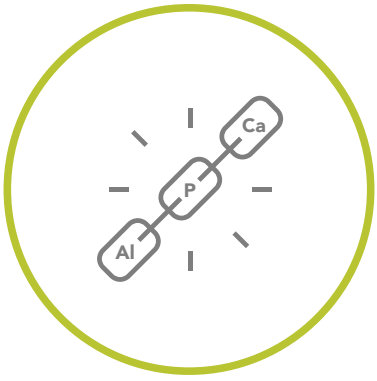
Derivation: Magnesium ammonium phosphate hexa-hydrate ($MgNH_4PO_4 \bullet 6H_2O$)

CRYSTAL GREEN PROVIDES **PHOSPHORUS** WHEN ROOTS NEED IT

INCREASED YIELD



IMPROVED EFFICIENCY



MINIMIZES TIE-UP

Put your plants in control of their phosphate needs, not the soil.

Crystal Green delivers plant-available phosphorus on demand. With a proven Root-Activated™ release that improves uptake. The difference is enhanced yields and reduced tie-up, especially in high and low pH soils.

Phosphorus. Only Better.

Phosphorus, nitrogen and magnesium in one powerful granule (5-28-0 +10). More than 8 years of university and field trials globally with proven results.

WHY IS IT DIFFERENT?

Nutrient stewardship starts with source.

Crystal Green is produced by Ostara Nutrient Recovery Technologies. It is the first phosphorus to come from a renewable source. It is manufactured differently than MAP or DAP, so it performs differently. Using Ostara's patented Pearl® nutrient recovery technology, Crystal Green is produced by recovering nutrients in water streams that contain high amounts of phosphorus and transforming them into a granular phosphate fertilizer.

By removing nutrients from where they shouldn't be – in our water – and returning them safely to where they should be – available in our fields – Crystal Green offers an innovative solution to nutrient management so farming today is farming tomorrow.

The Next Generation of Phosphorus

ROOT-ACTIVATED ™

ONE SEASON-LONG APPLICATION

ENVIRONMENTAL STEWARDSHIP

Features and Benefits

High-Yielding Performance

- University proven, unique mode-of-action prevents tie-up of phosphorus in low and high pH soils
- Improves seed safety and soil health
- Complements traditional phosphates for season long phosphorus

Environmental Benefits

- Sustainably and locally sourced using nutrient recovery
- Proven to reduce leaching and runoff
- Helps protect sensitive waterways

THE SUCCESS BEHIND THE **SOLUBILITY**

How it Works: Season Long Plant-Availability

Phosphorus is essential to all life. It is the foundation for high quality yields, but it isn't always available in the soil when plants need it. Until now.

Crystal Green is the next generation of phosphorus. Crystal Green's citrate soluble granules don't tie-up in the soil, or run-off, their release is triggered by the organic acids produced by growing roots, supplying nutrients on-demand. The difference of improved uptake is increased yields and reduced nutrient loss.

Crystal Green is Citrate Soluble and Plant-Available vs. MAP and DAP

Crystal Green

4% Water Soluble
96% Citrate Soluble

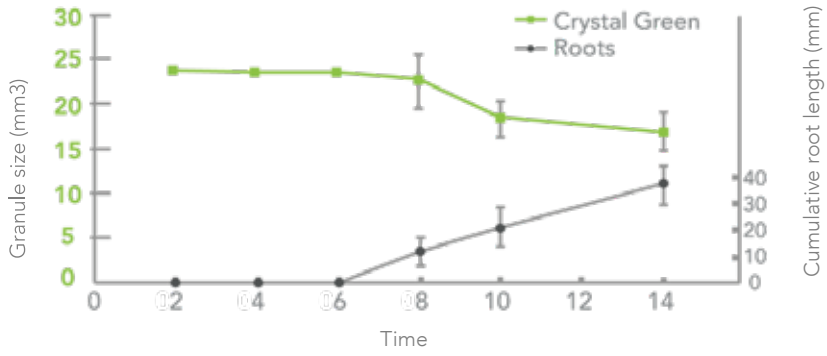
MAP

90% Water Soluble
10% Citrate Soluble

DAP

93% Water Soluble
7% Citrate Soluble

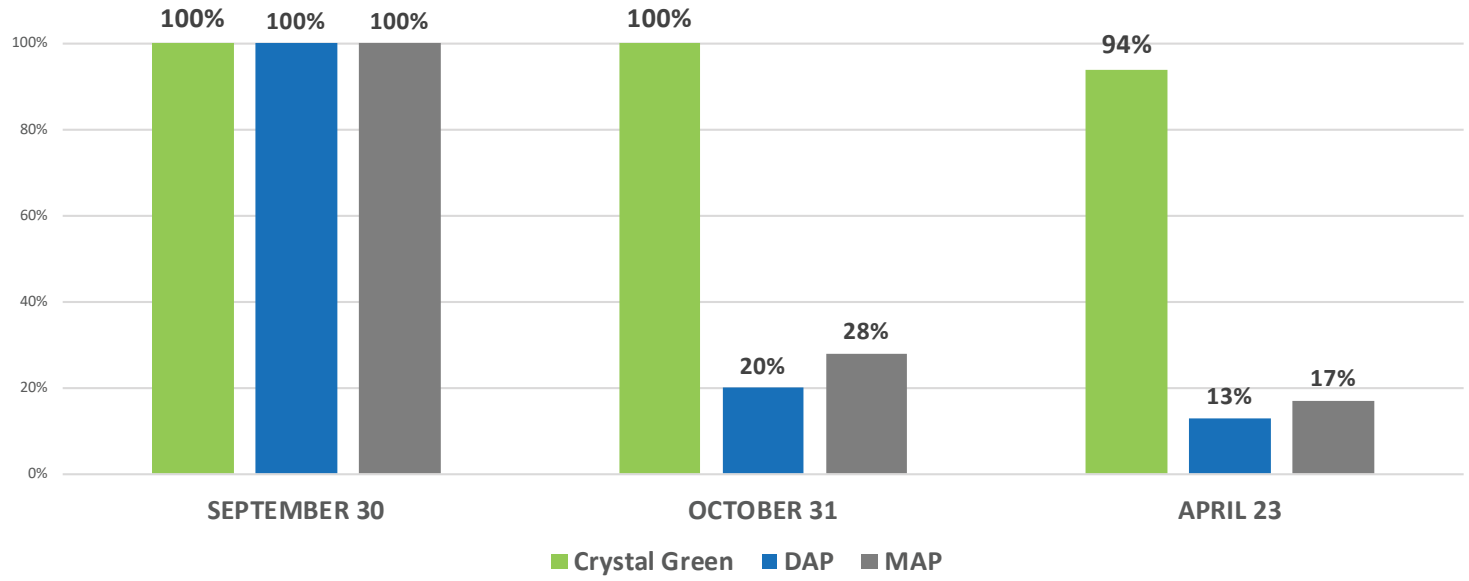
Interaction of Growing Roots and Crystal Green Release



Crystal Green Release is Key to Root Growth

Source: "Imaging the interaction of roots and phosphate fertilizer granules using 4D X-Ray tomography". Ahmed et al., Plant Soil (Springer International Publishing, Switzerland,2014) 401:125-134

94% Remains Plant-Available Even After Fall Fertilization



North Dakota State University, Dr. Joel Ransom, 2017-18

Improved Seed Safety, Lower Salt Index.

It's a proven fact that the salt index of traditional phosphorus sources, such as MAP and others, cause injury to crops when placed near the seed. This seedling injury reduces stand count and yield. In contrast, Crystal Green's salt index is extremely low, only one quarter of that which is found in MAP or DAP. This reduced salt index increases seed safety by reducing salt injury, resulting in an increase in stand count and ultimately, yield.

	DAP	MAP	S15	Crystal Green®
Salt Index*	29	27	21	7.7

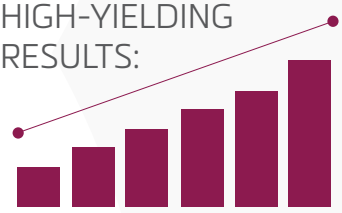
*Salt Index is based on the Jackson Method, current standard for North American fertilizers.

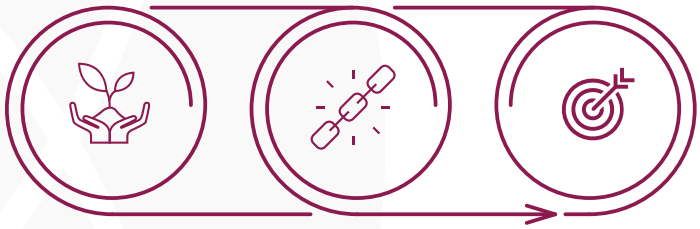
HOW CAN CRYSTAL GREEN WORK FOR YOU?

Canadian research has proven it. Canadian growers have defined it. Let your crops benefit from Crystal Green with better phosphate control and uptake for higher yields.

That's not just good economics. It's sustainable agronomics.

3 YEARS OF CANADIAN RESEARCH PROVE HIGH-YIELDING RESULTS:





REDUCED RISK OF SALT INJURY (LOW-SALT INDEX)

REDUCED NUTRIENT LOSS TO pH TIE-UP AND RUN-OFF

ENHANCED YIELDS FOR IMPROVED ROI

Crystal Green® is a fit for you if:

- ✓ Seed safety is a concern for your crop
- ✓ You farm in challenging pH soils, where phosphorus tie-up is common
- ✓ You broadcast, seed place or band phosphorous
- ✓ Your crops need available phosphorus for season-long uptake

RESEARCH DATA SUMMARY

POSITIVE YIELD RESPONSE ACROSS WIDE VARIETY OF CROPS IN NORTH AMERICA

CROP	RESEARCH INSTITUTE	RANGE: UNIT/ACRE YIELD INCREASE
Canola	AgQuest, ICMS, Vision Research, New Era Technologies	2.7 bu/acre
Spring Wheat	AgQuest, ICMS, Vision Research, Agvise Labs	2.9 bu/acre
Peas	AgQuest, Vision Research	2.1 bu/acre
Lentils	AgQuest, Vision Research	5.1 bu/acre
Soy Beans	AgQuest, Vision, Agvise Labs	2.3-3.1 bu/acre
Corn	University of Illinois	7.9 bu/acre
Alfalfa	University of Manitoba	1.4 ton/acre
Potato	Gaia Consulting (Darin Gibson), Province of Alberta (Michelle Konschuh), North Dakota State University, University of Wisconsin, Brigham Young University of Idaho, Michigan State University, University of Florida, Arizona State University	28.9 cwt/acre
Sugar Beets	Michigan State University, Brigham Young University, Agvise Labs	4.34 ton/acre
Winter Wheat	Kansas State University, Montana State University	3.8 bu/acre

CANOLA RESEARCH SUMMARY

SOIL pH

CRYSTAL GREEN vs. MAP

YIELD INCREASE

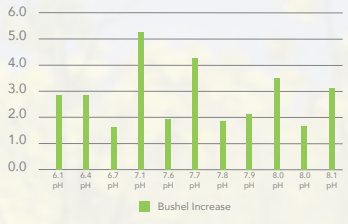
↑ **2.7**

Bushel Increase

LOCATION

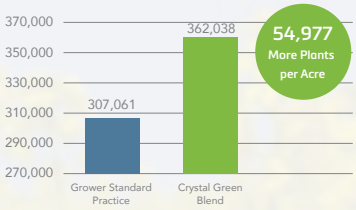
Manitoba
Saskatchewan
North Dakota

3 Year Results
2016-18



INCREASED STAND COUNT

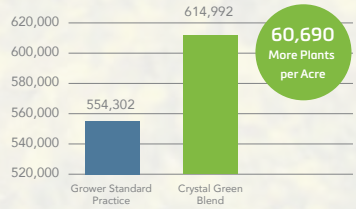
CRYSTAL GREEN vs. GROWER STANDARD PRACTICE



RESEARCHER	LOCATION	YEAR
AgQuest	Manitoba	2017

INCREASED STAND COUNT

CRYSTAL GREEN vs. MAP



RESEARCHER	LOCATION	YEAR
New Era Technologies	Swan River, MB	2018

POSTHARVEST AVAILABILITY

CRYSTAL GREEN vs. GROWER STANDARD PRACTICE

CRYSTAL GREEN

23.4%

Remaining Postharvest

RESEARCHER	LOCATION	YEAR
New Era Technologies	Swan River, MB	2018

CANOLA RESEARCH SUMMARY

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE

↑ **5.0**

Bushel Increase

APPLICATION
In-furrow

UNITS OF P
38lbs/acre

SOIL pH
7.9

SOIL TEST P
6 ppm

RESEARCHER	LOCATION	YEAR
ICMS	Portage La Prairie, MB	2018

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE

↑ **1.7**

Bushel Increase

APPLICATION
In-furrow

UNITS OF P
30lbs/acre

SOIL pH
6.1

SOIL TEST P
13 ppm

RESEARCHER	LOCATION	YEAR
AgQuest	Saskatoon, SK	2018

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE

↑ **2.3**

Bushel Increase

APPLICATION
In-furrow

UNITS OF P
25lbs/acre

SOIL pH
7.6

SOIL TEST P
6 ppm

RESEARCHER	LOCATION	YEAR
Vision Research	Berthold, ND	2018

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE

↑ **2.1**

Bushel Increase

APPLICATION
In-furrow

UNITS OF P
30lbs/acre

SOIL pH
8.0

SOIL TEST P
15 ppm

RESEARCHER	LOCATION	YEAR
AgQuest	Minto, MB	2018

CANOLA RESEARCH SUMMARY

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **1.8**
Bushel Increase

APPLICATION
In-furrow

UNITS OF P
58lbs/acre

SOIL pH
8.1

SOIL TEST P
8 ppm

RESEARCHER	LOCATION	YEAR
New Era Technologies	Swan River, MB	2018

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **1.8–3.2**
Bushel Increase

APPLICATION
In-furrow

UNITS OF P
32lbs/acre

SOIL pH
8.0

SOIL TEST P
7 ppm

RESEARCHER	LOCATION	YEAR
AgQuest	Minto, MB	2017

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **4.2**
Bushel Increase

APPLICATION
In-furrow

UNITS OF P
34lbs/acre

SOIL pH
6.4

SOIL TEST P
34 ppm

RESEARCHER	LOCATION	YEAR
AgQuest	Saskatoon, SK	2017

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **1.8**
Bushel Increase

APPLICATION
In-furrow

UNITS OF P
32lbs/acre

SOIL pH
6.7

SOIL TEST P
22 ppm

RESEARCHER	LOCATION	YEAR
AgroTech	Velva, ND	2017

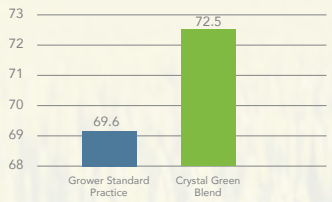
SPRING WHEAT RESEARCH SUMMARY

2 Year Results 2017-18

CRYSTAL GREEN vs. MAP
SIX REPLICATED TRIALS

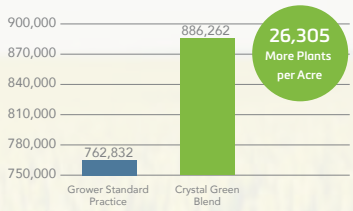
YIELD INCREASE
↑ **2.9**
Bushel Increase

LOCATION
Portage La Prairie, MB
Minto, MB
Saskatoon, SK
Portage La Prairie, MB
Northwood, ND
Minot, ND



INCREASED STAND COUNT

CRYSTAL GREEN vs. MAP



RESEARCHER AgQuest
LOCATION Minto, MB
YEAR 2018

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **1.7**
Bushel Increase

APPLICATION In-furrow
UNITS OF P 34lbs/acre
SOIL pH 6.1
SOIL TEST P 13 ppm

RESEARCHER AgQuest
LOCATION Saskatoon, SK
YEAR 2018

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **2.9**
Bushel Increase

APPLICATION In-furrow
UNITS OF P 38lbs/acre
SOIL pH 7.9
SOIL TEST P 16 ppm

RESEARCHER AgQuest
LOCATION Minto, MB
YEAR 2018

SPRING WHEAT RESEARCH SUMMARY

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE

↑ **3.1**

Bushel Increase

APPLICATION
In-furrow

UNITS OF P
40lbs/acre

SOIL pH
7.9

SOIL TEST P
6 ppm

RESEARCHER	LOCATION	YEAR
ICMS	Portage La Prairie, MB	2018

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE

↑ **5.4**

Bushel Increase

APPLICATION
In-furrow

UNITS OF P
35lbs/acre

SOIL pH
7.9

SOIL TEST P
13 ppm

RESEARCHER	LOCATION	YEAR
ICMS	Portage La Prairie, MB	2017

WINTER WHEAT RESEARCH SUMMARY

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **3.9**
Bushel Increase

VARIETY
Bob Dole

APPLICATION
With Seed

UNITS OF P
40lbs/acre

SOIL pH
5.9

SOIL TEST P
18 ppm

RESEARCHER	LOCATION	YEAR
Kansas State University	Manhattan, KS	2017-18

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **2.2**
Bushel Increase

VARIETY
Yellowstone

APPLICATION
With Seed

UNITS OF P
15lbs/acre

SOIL pH
7.4

SOIL TEST P
12 ppm

RESEARCHER	LOCATION	YEAR
Montana State University	Moccasin, MT	2017-18

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **4.4**
Bushel Increase

VARIETY
Yellowstone

APPLICATION
With Seed

UNITS OF P
20lbs/acre

SOIL pH
7.4

SOIL TEST P
30 ppm

RESEARCHER	LOCATION	YEAR
Montana State University	Conrad, MT	2017-18

PEAS
RESEARCH SUMMARY

REPLICATED TRIALS
CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **3.0**
Bushel Increase

APPLICATION
In-furrow

UNITS OF P
35lbs/acre

SOIL pH
6.1

SOIL TEST P
13 ppm

RESEARCHER	LOCATION	YEAR
AgQuest	Saskatoon, SK	2018

REPLICATED TRIALS
CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **2–3**
Bushel Increase

APPLICATION
In-furrow

UNITS OF P
31lbs/acre

SOIL pH
7.9

SOIL TEST P
7 ppm

RESEARCHER	LOCATION	YEAR
Vision Research	Minot, ND	2018

REPLICATED TRIALS
CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **2.2**
Bushel Increase

APPLICATION
In-furrow

UNITS OF P
30lbs/acre

SOIL pH
6.1

SOIL TEST P
15 ppm

RESEARCHER	LOCATION	YEAR
AgQuest	Saskatoon, SK	2017

LENTILS RESEARCH SUMMARY

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE

↑ **5.1**

Bushel Increase

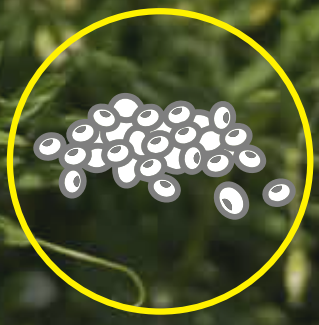
APPLICATION
In-furrow

UNITS OF P
34lbs/acre

SOIL pH
6.1

SOIL TEST P
26 ppm

RESEARCHER	LOCATION	YEAR
AgQuest	Saskatoon, SK	2018



SOYBEANS RESEARCH SUMMARY

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE

↑ **2.9**

Bushel Increase

APPLICATION
In-furrow

UNITS OF P
30lbs/acre

SOIL pH
8.0

SOIL TEST P
7 ppm

RESEARCHER	LOCATION	YEAR
AgQuest	Minto, MB	2017

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE

↑ **2.3**

Bushel Increase

APPLICATION
In-furrow

UNITS OF P
30lbs/acre

SOIL pH
6.7

SOIL TEST P
8 ppm

RESEARCHER	LOCATION	YEAR
AgroTech	Velva, ND	2017

CORN RESEARCH SUMMARY

Corn Banded Trial

CRYSTAL GREEN vs. DAP

YIELD INCREASE

↑ **7.9**

Bushel/Acre

VARIETY
RR

APPLICATION
Spring Banded

UNITS OF P
100lbs/acre

SOIL pH
6.5

SOIL TEST P
29 ppm

RESEARCHER	LOCATION	YEAR
Dr. Fred Below University of Illinois	Champaign, IL	2018

ALFALFA RESEARCH SUMMARY

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE

↑**1.4**

Ton/Acre

APPLICATION
Spring Banded

UNITS OF P
28lbs/acre

SOIL pH
8.1

SOIL TEST P
3 ppm

RESEARCHER	LOCATION	YEAR
University of Manitoba	Libau, MB	2018

POTATO RESEARCH SUMMARY

3 YEAR TRIAL RESULTS

CRYSTAL GREEN vs. MAP

YIELD INCREASE

↑ **29** CWT

VARIETY
Burbank

APPLICATION
Broadcast

UNITS OF P
Variable

SOIL pH
Variable

SOIL TEST P
low to medium

RESEARCHER	LOCATION	YEAR
Darin Gibson	6 sites in Manitoba	2016 to 2018

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE

↑ **17** CWT

VARIETY
Musica

APPLICATION
Broadcast

UNITS OF P
100lbs/acre

SOIL pH
7.8

SOIL TEST P
13 ppm

RESEARCHER	LOCATION	YEAR
KR Crop Check	Winkler, MB	2016

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE

↑ **40** CWT

VARIETY
FL 2137

APPLICATION
Broadcast

UNITS OF P
120lbs/acre

SOIL pH
7.6

SOIL TEST P
22 ppm

RESEARCHER	LOCATION	YEAR
Michele Konschuh	Rolling Hills, AB	2016

SUGAR BEETS RESEARCH SUMMARY

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **4.7** Tons/Acre

APPLICATION Broadcast
UNITS OF P 120lbs/acre
SOIL pH High
SOIL TEST P Low ppm

RESEARCHER	LOCATION	YEAR
Idaho BYU	Melba, ID	2014-2018

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **4.6** Tons/Acre

APPLICATION Broadcast
UNITS OF P 120lbs/acre
SOIL pH High
SOIL TEST P Low ppm

RESEARCHER	LOCATION	YEAR
AgroServ	American Falls, ID	2014-2018

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **4.3** Tons/Acre

APPLICATION Banded
UNITS OF P 90lbs/acre
SOIL pH High
SOIL TEST P Low ppm

RESEARCHER	LOCATION	YEAR
Michigan State University	Bad Axe, MI	2014-2018

REPLICATED TRIALS

CRYSTAL GREEN vs. MAP

YIELD INCREASE
↑ **3.0** Tons/Acre

APPLICATION Broadcast
UNITS OF P 80lbs/acre
SOIL pH High
SOIL TEST P Low ppm

RESEARCHER	LOCATION	YEAR
Agvise	Northwood, ND	2014-2018

Crystal Green®
5-28-0 with 10%Mg

Interested in Learning More?
Contact us:
crystalgreen@taurus.ag

Crystal Green is sustainably produced by
Ostara Nutrient Recovery Technologies Inc.

OSTARA

OSTARA.COM