

WELCOME TO THE 1ST EDITION

THE CO-EDITORS



G-Mac's AgTeam continues to look for new ways to present intriguing, applicable information to our valued customers. We are very pleased to introduce our newsletter, "The Agronomy Den", as another tool to be used in your crop production.

The goal of this publication is to present information about the industry, agronomic issues, new products and practices, and innovative ideas; basically an overview of everything

prairie agriculture has to offer.

We hope that you enjoy our first issue, and look forward to the ones that follow. Input is welcome, and subject suggestions or questions you have will be appreciated. If you have any inquiries, please contact your local G-Mac's AgTeam.

Enjoy!

Jeremy German & Bennie Dunhin
The Co-Editors

HIGH pH WATER EFFECTS HERBICIDE PERFORMANCE

BRENAN GLASFORD



Brenan GLASFORD

Water quality is a very important factor to consider before application of any herbicide. Factors that effect water quality include dissolved solids, organic matter and pH. The pH of the water in the west central region of Saskatchewan averages anywhere from 7.8 to 8.2. This high pH effects the performance of acid-based herbicides such as glyphosate.

All glyphosates contain three components:

- Parent Acid Glyphosate
- Salt : IPA- isopropylamine, K+ potassium, Ammonium
- Proprietary Components: Surfactants, defoamers, etc.

The parent acid has a negative charge and the salt has a positive charge and these two components bind together to form a compound that moves readily into the plant.

High pH water contains calcium and magnesium ions

which are positively charged, the positive charge on these ions is very strong and these ions will displace the salt that is attached to the glyphosate parent acid. The new compound that is formed does not move into the plant as readily and up to a 30% reduction in efficacy can be seen.

So what is the solution to this Problem?

The solution is to tie up the calcium and magnesium ions in the water before the addition of glyphosate to the spray solution, in other words –lowering the pH of the water. This can be accomplished by adding water conditioning products with a high negative charge such as pHix™ (for burn off, chem fallow and desiccation) and BB5™ (for incrop sprays). By adding this product to your spray solution you can ensure optimal water pH for maximum glyphosate performance. So- get your water tested today!

syngenta

Pre-Seed Bonus

Save an additional \$1/acre on Syngenta Seed Care™ products with matching acres of Touchdown Total® and Traxion™.



Cruiser Maxx Beans and Cruiser Maxx Sunflowers also qualify.

+ **TOUCHDOWN** **=** **\$1/acre**
× **Traxion**

In order to qualify for the Pre-Seed Bonus, a producer must purchase 320 acres of graminicides (Step #1) and purchase at least \$10,000 in qualifying product on the Partner Program.

MVP

Most Value and Performance.

If you're looking for an insecticide with performance you can count on™ and outstanding value to ensure that your peas and lentils crops deliver the yields you expect, trust Nodulator™.

Available in liquid, sterile pest or granular formulations, Nodulator™ can help you offer the most consistent performance and best value on the market. Bank on it!



Nodulator
 Insecticide

BY
 BECKER
 UNDERWOOD

At this price, it's hard not to smile.

Roundup Transorb® HC herbicide with its legendary pre-seed weed control, industry leading warranties and guarantees and superior customer support, is now available at a great new lower price. That's worth smiling about. See your retailer for details.

NOW
 JUST **2.45**
 PER ACRE

Price per acre is calculated based on a recommended pre-seed application rate of 0.33L per acre and the manufacturer's suggested retail price of \$7.35 per litre. Actual retail price may vary. Price subject to change without notice. See your retailer for details. ALWAYS READ AND FOLLOW LABEL DIRECTIONS. Roundup and Roundup Transorb are registered trademarks of Monsanto Technology LLC, Monsanto Canada Inc. licensee. ©2010 Monsanto Canada Inc.



GROUP 2 RESISTANT KOCHIA CONFIRMED

JEREMY GERMAN



Kochia has been a persistent weed in Western Canada for over 100 years. In fact, the first seeds were actually brought over from Eurasia in the early 1900's as garden ornamentals. Most farmers are familiar with Kochia scoparia as a weed which germinates early in spring, and has a strong tolerance to frost and drought. Kochia has a unique plant architecture which allows the plant to break off at the base of the stem and disperse seeds as a "tumbleweed". Individual Kochia plants produce between 15,000 to 25,000 seeds per plant!



Resistance to Group 2 herbicides confirmed in Kochia populations across the west.



A recent study by Ag Canada confirmed that over 90% of Kochia populations showed resistance to Group 2 herbicides. Products such as Pursuit (Imazethapyr), Odyssey (Imazamox + Imazethapyr), Refine (Thifensulfuron methyl), and Express (Tribenuron methyl) are valuable Group 2 herbicides which need to be applied diligently. Rotating herbicide groups and choosing products formulated with multiple modes of action is key to breaking the resistance cycle.

Kochia seedlings have a significant impact on yield! In Wheat, Kochia densities at 21 plants/m² have resulted in yield losses of 33%. If we take this impact and apply it to a potential 30 bu/ac Red Lentil crop (at \$15/bu) – then a 10 bushel yield loss is worth \$150/acre!!!

Lentils are an important revenue crop which is typically treated with either Pursuit or Odyssey (CL Lentils) every year. There are two options that can provide relief from kochia pressure – one is applying Edge Granular (Group 3) herbicide prior to seeding, the second method is applying a timely pre-emergent glyphosate (Group 9) based burnoff.

Another innovative option for Cereal crops is using the Precision Pak machine to dispense a custom blend of herbicide chemistry to fine tune the attack on specific weeds. Mixing Refine or Express with chemistry such as Dicamba (Group 4) has been successful in controlling Group 2 resistant kochia.

It is imperative that we recognize Group 2 resistant Kochia as a significant management issue in the West Central area. By scouting your fields early or employing our Agronomy Services to get you the information we can strategically approach Group 2 Resistant Kochia. If you have questions, or would like to create a herbicide management plan I encourage you to access the services of one of our qualified Agronomists.



The miracles of science™

Custom herbicides designed for your fields.

www.PrecisionPac.com

As with all crop protection products, read and follow label instructions carefully. The DuPont Oval Logo, DuPont™, The miracles of science™ and PrecisionPac™ are registered trademarks or trademarks of E. I. du Pont de Nemours and Company, E. I. du Pont Canada Company is a licensee. Member of DrexelCo Canada. © Copyright 2010 DuPont Canada. All rights reserved.



DuPont™ PrecisionPac™ herbicides



SAKUNDIAK EQUIPMENT

Grain Storage Bins | Grain Augers
Aeration & Unload Systems

PROVIDING GRAIN STORAGE & HANDLING
SOLUTIONS FOR OVER 60 YEARS

Toll Free: (800) 667-5904 or (306) 545-4044
www.sakundiak.com



Call Blyth 463-4622, cell 460-6546
or visit our website
www.gmacsagteam.ca

SAKUNDIAK THE BEST AUGERS BY FAR

GREG KIRBYSON



Greg KIRBYSON

G-Mac's AgTeam are pleased to announce that we are the newest Sakundiak dealer in west central Saskatchewan. Sakundiak are the industry leaders in manufacturing quality grain augers and corrugated grain bins.

Sakundiak manufacture a large selection of belt driven augers from seven inch to twelve inch diameter, and ranging from thirty three feet to sixty. These augers are the best on the market, and have a size for all situations on the farm.

Whether it is a small seven inch for cleaning out bins and loading trucks, to a ten inch sixty foot model for filling bins – these augers are strong and dependable. For farmers with a need for high capacity, the twelve inch truck loading auger will allow you to load grain quickly.

Sakundiak also manufactures mechanical swing drive augers ranging in diameter from ten to twelve inch, ranging from sixty two feet to eight five. These augers are very quiet running, and very well built. They are not the biggest on the market, but if you are looking for a smaller auger, Sakundiak would be a great choice.

Sakundiak manufactures utility augers for seed plant applications, grain dryers, and many other applications. They range in diameter from seven to ten inch, and in length from ten to thirty feet in length. Custom lengths are available upon request. These augers can be ordered with either hydraulic or electric motors.

Finally, G-Mac's Ag Team is excited to offer corrugated grain bins. Sakundiak manufactures flat bottom grain storage with either stiffened or unstiffened sheets. These bins range in diameter from fifteen to forty two feet, with storage capacity ranging from nineteen hundred to fifty seven thousand bushels. The large diameter bins can be equipped with both full floor aeration and center load systems up to ten in diameter. The smaller diameter bins can be up on a hopper cone for easy unloading. G-Mac's Ag Team has access to complete hopper bin packages – call any of our locations for full details. ■



Growers agree. It's the better way to grow lentils.



Q AND A

Q: WHAT ARE THE BENEFITS TO THE AGROW PLOW?

A: The Agrow plow will loosen up the soil and can promote more root growth by letting the roots get to the water easier, also by loosening the soil it will be able to hold more water which means more yield.

Q: HOW OFTEN WILL I HAVE TO USE THE AGROW PLOW?

A: Since this is new in our area and there isn't much data yet, we expect anywhere from 5-8 years before the hard pan will redevelop. In Australia where this machine is built, they have been getting 8 years in between applications. Their soil conditions are similar to ours.

Q: WHERE CAN I RENT OR BUY A AGROW PLOW?

A: At any of the Gmac's Ag Team's locations (Kindersley, Leader, Marengo, Plenty, Eatonia)

Q: HOW MUCH HORSEPOWER WILL I NEED TO PULL THE AGROW PLOW?

A: There are various sizes (5,7,9,11,13,15,17,19,21,27 shanks machines) and it takes about 15-25 hp per shank to pull the Agrow Plow depending on how much ground pressure (traction) there is on the tractor tires, or how deep the machine is set.

Q: WHEN IS THE BEST TIME TO USE THE AGROW PLOW?

A: In the fall after harvest, so that all of the runoff from the snow will go in the soil not the dugouts and ditches. Spring time will work but time can be an issue with seeding and the snow moisture that could have been saved into the soil is now runoff. Chem fallow fields are well suited for this kind of practices because it can bank moisture throughout the growing season as well.

Q: HOW DEEP DOES THE AGROW PLOW NEED TO GO TO WORK PROPERLY?

A: Find out how deep the bottom of the hardpan is (preferably with a Penetrometer) and use that as a guide. If the hardpan bottom is down 18 inches down then set the machine for 18 inches. But if the field has many rocks, set the machine shallower so that the trips (of the machine) have room to lift the shanks out of the way of rocks. Even eight inches of working depth will show a huge benefit than not using the Agrow plow at all.

Q: HOW MUCH DOES THIS AGROW PLOW COST PER ACRE?

A: About \$30 per acre plus wearing/breaking parts (Shanks, Shank carriers, Boots, etc.)

AGROW PLOW

BRANDON ZIMMER



Brandon ZIMMER

I don't have any hardpans in my field - is one of the major miss-conceptions in western Canada. With the change in farming practices over the last 15 years, cultivation practices are almost non-existent. With that said, there has been a

hardpan develop over western Canada from equipment compaction and rain compaction, and the freeze thaw cycle doesn't break this hardpan up as it may seem to (this only effects the hardpan about 0.5 - 1 inch from the splits of the cracks in the soil). The only thing that a farmer can do to deal with the hard pan is deep tillage, but some subsoilers (deep tillage) mix soil horizons and change the characteristics of the soil.

The Agrow plow is a non inversion subsoiler (which means it does not mix the soil horizons) that increases yield potential and stores water for those dry years. The design of the Agrow plow keeps the soil horizons where they lie and has minimal disturbance compared to the traditional style subsoilers. It breaks up the hardpan which increases water holding capability and can increase root growth. It leaves the stubble standing to catch the snow fall from the winter, loosens up the soil to take in all of the moisture and

promotes root growth. All of these benefits can increase yield and production and put more money in your pocket. ■



AGROW PLOW

SOIL CARE SYSTEMS INTERNATIONAL PTY. LTD. A.B.N. 51 015 82 947

An illustration of a subsoiler roller symbolizing the soil compaction created by every day farming activities.

IMPROVED YIELDS & HEALTHIER SOIL

Agrowplow maximizes seeding performance and versatility - using techniques from zero tillage systems, for summer crops, cereals, legumes, oil seeds and pasture renovation.

RECTIFYING SOIL COMPACTION

Step 1: Break up compacted soils, hard pans, clay pans, tillage pans and impenetrable barriers with an Agrowplow subsoiler.

Step 2: Re-establish plants with strong, deep root systems to rebuild and hold the soil structure, bulk and porosity in a healthier state - preferably using direct drilling or minimum tillage techniques.

Step 3: Use farming practices which minimize soil cultivation, soil inversion and traffic in wet soils.

Gmac's Ag Team Inc. PHONE 463-4622
www.gmacsagteam.ca

FREE DVD
Call now for a FREE DVD on the benefits of the Agrowplow and Agrowdrill sustainable soil care system.

Leading the way to prosperity through soil care.

For more information please visit us at
www.agrowplow.com
(403) 946-5300

AGROW PLOW

ASCOCHYTA IN LENTILS CAN BE DISASTROUS

BENNIE DUNHIN



Bennie DUNHIN

Lentils are one of Saskatchewan's biggest export crops. Serious yield losses can occur if the wrong practices are followed. One big factor to keep in mind is diseases. Ascochyta Blight is caused by the fungus *Ascochyta lentis* and can infect leaves, pods and stems. Lesions appear as spots which are light gray to tan colored and are often spotted with little black fruiting bodies called "pycnidia". Discoloration on seeds can also be visible as a brownish purple color and may be shriveled.

This fungus is seed borne but can also overwinter in lentil stubble. Even seed as low as 1-2 % infected can cause problems. The disease is spread by splashing raindrops and is favored by moist conditions. Long wet periods can cause serious yield altering effects on the crop.

There are however some methods to control *Ascochyta* Blight. The biggest control method would be to use disease-free seed. This will help to start with the best chance you've got. Accredited labs will be able to test seed samples for this fungus. Crop rotation is another important control measure. It is safe to re-seed a field to lentils every 3 years. In heavy infected fields even 4-5 years should be waited before you can re-seed to lentils. There are also some chemical treatments that can stop the fungus from spreading. Registered seed treatments can be used (such as Vita Flow, Apron Max and Trilex), but keep in mind not to kill the inoculants. Please refer to the label of the inoculants. Foliar application of especially the strobilurin family (e.g. Headline, Quadris) should be applied as soon as symptoms appear for it to be the most effective.




Please don't confuse *Ascochyta* Blight with Anthracnose. White to grey or cream-colored lens-shaped spots on leaflets and stems is visible with small, brittle-like sporebearing structures on affected tissue. Anthracnose can also cause plant defoliation and premature death and is becoming a bigger issue the last few years, especially in the Kindersley region. The same chemicals can be used to control Anthracnose. ■

GROWERS, START YOUR PULSES.

New Trilex® AL seed treatment takes the checkered flag for seed and seedling disease protection in pulses and soybeans. In addition, it clears the track to allow your pulse inoculant to supercharge nodulation.


Led by trifloxystrobin and metalaxyl, the finest pit crew on tour, Trilex AL has been engineered for high performance disease protection. This high level of disease protection and synergistic benefits with inoculants provides growers with their best return on investment. Now that's a winning formula.



Trilex® AL

NEW

GET YOUR PULSES RACING.


Bayer CropScience

BayerCropScience.ca or 1 888-283-6847 or contact your Bayer CropScience representative.
 Always read and follow label directions. Trilex® is a registered trademark of Bayer. Bayer CropScience is a member of CropLife Canada.

PUTTING DOWN N ON FROZEN SOIL

JEREMY GERMAN

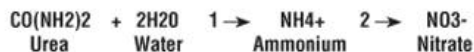


Can we put Nitrogen down on frozen soil?

We've had loads of interest in applying nitrogen this winter. Some of the main drivers have been price reduction - the ability to take advantage of prices without having to store. The second is simply reducing spring workload. There are certainly more positives out there, but the big stumbling block has been the question of "How much N will I lose applying this fall/winter?". This article will hopefully provide the facts to address some of these concerns.

What is the soil chemistry of Urea conversion?

Nitrogen is plant available in the ammonium and nitrate forms. Using urea as an example, it is applied as:



The conversion (1 →) happens quickly in moist, warm conditions. Broadcasting in conditions below 5 degrees C will reduce the amount of ammonium which converts (too quickly) to nitrate. The second reaction (2 →) is a biological process facilitated by soil borne bacteria. The long and short of the above illustration is that urea is not immediately plant available. Now let's take a quick look at where the risk lies in a fall/winter broadcasting application.

Where are the risks?

- 1. Soil Moisture** – excess soil moisture can impact losses in sandy soils by leaching, in heavily water logged soils N losses due to denitrification can also occur.
- 2. Form of Nitrogen** –
 - a. Urea (46-0-0) - dry granular – volatile losses with

heavy trash, very moist, or windy.

b. UAN (28-0-0) – liquid mix of ammonium nitrate and urea – proportion already as nitrate.

3. Application Method – broadcasting N through a floater equipped with a guidance system is a more accurate means of applying nutrients to the soil than without the guidance because of overlapping and misses.

What are the agronomic keys to avoiding N losses?

If we delay application until the ground is frozen we increase the proportion of fertilizer N which will remain in the ammonium form (this is purely management and timing!). Clay soils minimize the risk of nitrate losses in the spring due to their ability to hold water. In sandy soils nitrate is very mobile and has the potential to leach out of the rooting zone if there are heavy (2 inch) spring rains before roots are developed. Another potential risk is nitrate losses (or rather conversion) to N₂ and Oxygen gases under water logged conditions (denitrification). This is typically not a huge concern as our soils were not loaded with moisture this fall, and even if we have a high snowfall winter we will welcome the moisture to approach field capacity.

One relatively new piece of technology is the use of urease and nitrification inhibitors such as Agrotain or the polymer coated urea - ESN. These two products work differently, but the concept of reducing N losses by managing the release timing is effective. If your interested in this technology, or any further information please feel free to contact an Agronomist at any of our G-macs Locations. ■



Nu-tri-ca-tion [noo-tri-key-shuh n]

- **noun** **1.** The process of imparting intellectual knowledge regarding the proper nourishing of plants.
- 2.** The knowledge, or skill obtained, or developed by learning the science of providing proper plant nutrition. **3.** see **OMEX** — ORIGIN Latin, from *nutrire* 'nourish'.

Defining a crop's nutritional needs is essential in today's market. Omex provides you and your growers with the knowledge and science to establish yield potential in the **FIRST 30 Days**® and maintain this yield potential in the **FINAL 30 Days**®.

Want to learn more? Call one of our Plant Health Professionals at **1-866-860-9660**

OMEX
the plant health professionals



TagTeam[®] More yield
MultiAction[™] Legume Fortify

Next Generation TagTeam[®] is the only inoculant that delivers increased phosphate efficiency and more fixed nitrogen for 6% more yield* compared to any other inoculant.

Choose TagTeam for the best phosphate and nitrogen use efficiency – and get the best yield and best value in pulse inoculants.

WEBSITE: www.bioag.novozymes.com
1-888-744-5662



novozymes[®]
Rethink Tomorrow

Novozymes is the world leader in bioinnovation. Together with customers across a broad array of industries we create tomorrow's industrial biosolutions, improving our customers' business, and the use of our planet's resources. Read more about Novozymes at www.novozymes.com.

Smart farmers read the fine print
* On average, Next Generation TagTeam inoculants for pea and lentil outperformed competitor, single-action (nitrogen fixing only) inoculants by 6% in farmer-conducted split-field trials. That's an average increase of 2.1 bushels per acre, for a net return of \$10.52/acre. Net return is calculated after the cost of the inoculants is removed, using current commodity prices of \$19.60/bu for lentils and \$5.85/bu for peas. See our website for details. © TagTeam and MultiAction are registered trademarks of Novozymes AS. © 2009 Novozymes. All rights reserved. 9080 10.02 LUNA 2009-21794-01

IMPORTANCE OF PROPER INOCULATION

TANNER McCULLOUGH



Tanner McCULLOUGH

Legume inoculation is the process of introducing commercially prepared sources of rhizobia to promote nitrogen fixation. This is done by introducing specific Nitrogen fixing bacteria to the seed (lentils, Peas, Beans, Alfalfa) encouraging contact between the plant roots and the nitrogen fixing rhizobia. The Rhizobia forms nodules that have white exteriors and pink/red interiors. The reason why nodules appear red inside is because they are in an oxygen restricted environment. The roots of the specific legume hosts and the nodules convert atmospheric nitrogen into essential plant building blocks. One common misconception is that the inoculant will automatically create an association with the plant - the key here is this is a symbiotic relationship. In this symbiotic relationship, the plant provides carbon and energy to the bacterial nodules in exchange for nitrogen, thus for a high rate of inoculation we need a healthy host plant and viable rhizobia. For maximum yields on pulse crops you need a good balance between your Nitrogen and Phosphate uptake. When inoculating your peas it is equivalent to using 80-120 lbs. of nitrogen and inoculating lentils is comparable to using 60-90 lbs. of nitrogen. On that note, it takes 2.43 lbs. of nitrogen uptake to achieve 1 bushel of peas and 2.1 lbs. of nitrogen to pull off 1 bushel of lentils.

The key to getting the most out of your inoculants each growing season is to use the proper rotation. A 3-4 year rotation is most recommended for our area. If pulses are seeded back to back, or in a 2 year rotation, remaining rhizobia from previous cropping seasons are often left in the soil. The issue with this is that normally, the commercially prepared inoculant strains die in the winter months, therefore the inoculant remaining in the soil is a mutated form. The most common mutation in bacterial inoculant strains is to cause it to become parasitic instead of symbiotic, therefore it will continue to use the plant host to get its nutrients, without providing the plant with nitrogen. This is also why these mutated strains will form nodules that have a white interior instead of a red interior, they aren't producing N! A good option to follow your peas and lentils in rotation are cereals mainly because they can benefit most from the nitrogen stored in the roots and organic matter of your legumes. If you need any more assistance on inoculation, please feel free to contact your nearest G-Mac's location for help.

A few **do's** and **don'ts** with using inoculants... **do not** leave your inoculants out in the sun, the UV rays and heat from the sun will kill the rhizobia. **Do** store in a cool dry place when not in use. **Do** sow your treated seed as soon as possible and **do not** leave your inoculated seed in the tank over night. Also, **do not** let your inoculant freeze... this will kill the rhizobia bacteria. ■

G-mac's
AgTeam Inc.
"our business is growing"



KINDERSLEY 463-4622
PLENTY 932-4622
EATONIA 967-2211
MARENGO 968-2262
LEADER 628-3886

WWW.GMACSAGTEAM.CA