

# ProfitPro<sup>®</sup>AG Farm Report

June 2020

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More from Every Acre, Every Animal  
& Every Gallon of Manure

## Crop Management News

Dr. Jim Ladlie, ProfitProAG President, will be presenting a series on “The Full-Circle Regenerative & Sustainable Crop & Livestock Production System.” This series will be a discussion on “A Natural Microbiological & Nutritional Approach to Enhanced Profitability.”

Over the next several months, there will be discussion on how we can farm using natural technologies to improve soil health and control pests. Experienced growers and experts in a given technology will be asked to join in on the discussion.

Please join us for our free webinar the third Thursday of each month from 8 to 9 p.m. (CT). See directions on last page.

## THE FULL-CIRCLE REGENERATIVE & SUSTAINABLE CROP & LIVESTOCK PRODUCTION SYSTEM:

*“A Natural Microbiological & Nutritional Approach to Enhanced Profitability.”*

### Today's Industrialized Agriculture

- The basic idea in conventional agriculture is that nature is somehow flawed and that it needs fixing.
- Insects and diseases are viewed as though they are normal.
- The soil is not considered to be alive.
- Typically the soil is treated as though it's inanimate and intervention at every point seems to be the mode of action that everyone thinks is necessary for survival.
- Operations that take place on conventional farms are typically input/output based.
- They're focused around hauling inputs on to the field, providing inputs to the crop and in some way then translating that into an output that they can haul off the field.
- The general approach can be summed up as being antibiotic.
- If there's something there you don't like, be it insect or disease, the typical remedy is just take it out. *“Just get rid of it.”*

### Conventional Agriculture Profitability

- As soil health has declined, the need for more N-P-K high salt fertilizers and pesticides has increased to achieve the same yield.
- In turn, grower costs increase each year, which narrows their profit margin.
- On low market years, there is no profit margin.

## FREE Webinar

### Agronomic/Livestock

3<sup>rd</sup> Thursday of the Month

**June 18, 2020**

### Time

8 to 9 pm Central Time

Visit [www.profitproag.com](http://www.profitproag.com)  
& click on “Monthly Teleconference”

To join the Webinar click on:  
“<https://event.webinarjam.com/go/live/14/ox65ofruxsgs0>”

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Ask about the **ProfitMaster<sup>™</sup>**  
**Full-Circle System** and the  
**Manure Master<sup>™</sup> Program**  
[www.profitproag.com](http://www.profitproag.com)



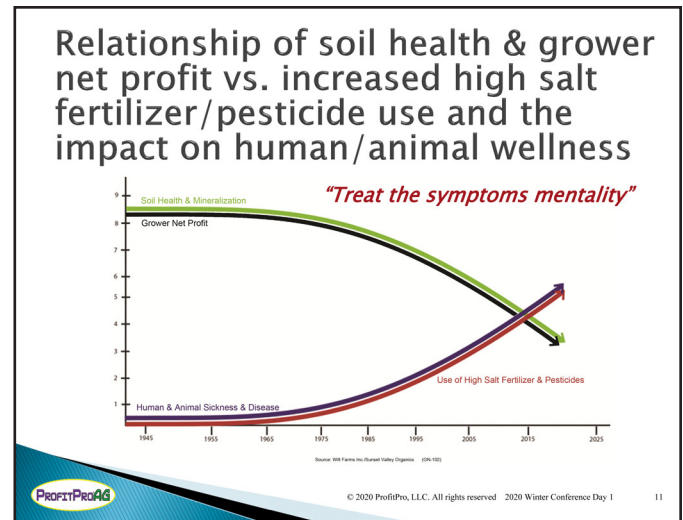
Innovative Manure Management

**[manuremaster.com](http://manuremaster.com)**

*“The Manure Treatment Experts”*

## Regenerative & Sustainable Biological Agriculture

- On the other hand **biological agriculture** comes from a very different perspective.
- The basic idea in biological agriculture is that nature is highly ordered and intelligent.
- Insects and diseases are nature's garbage collectors.
- They're there to take out the production that shouldn't go further down the food chain.
- The soil is considered to be living and dynamic and in many respects in allegiance to the ruminant digestive system, alive with microbiology and dependent on that microbiology to function properly.
- Overall, cooperation is the key to survival and operations are cyclically based as opposed to input/output based.
- The general approach is one that is probiotic — at every turn, life at every level tries to be enhanced as opposed to the antibiotic approach of conventional agriculture.



## Adopt a Biological Perspective

- Charles Mercer, in 1919 said, the farmer's work is with living things; and living things, whether animal or plants, can not be managed by coercion.
- It's fairly obvious that in much of the agricultural world the essence of this message has been lost because coercion at whatever level just seems to be the order of the day.

## BIOLOGICALS

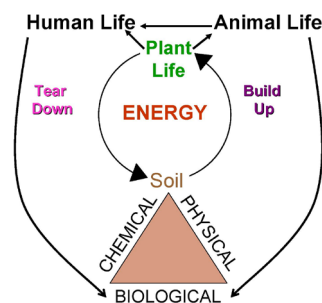
### The specific advantages of an active soil biological system include:

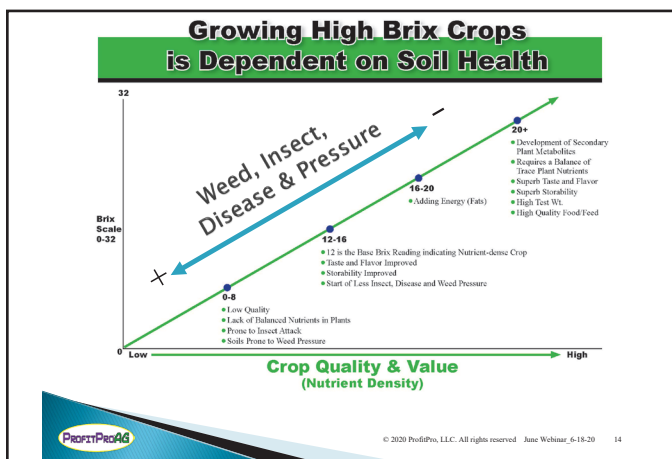
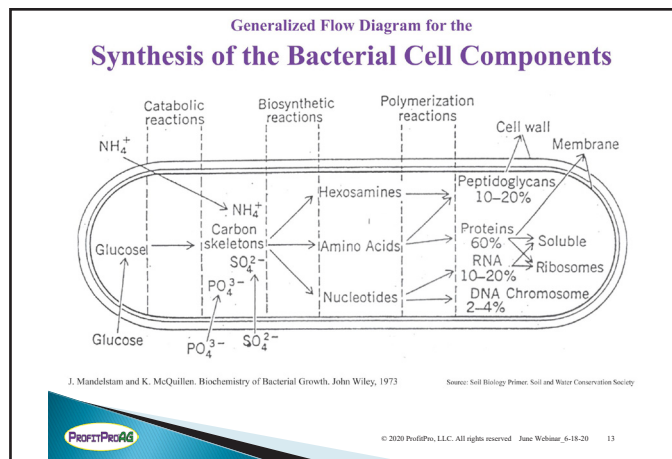
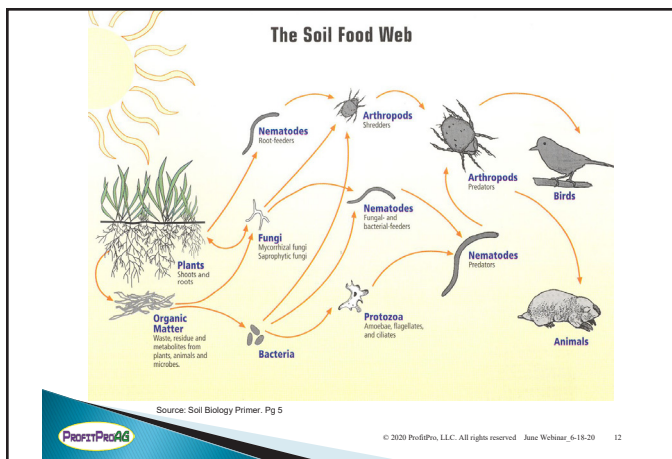
- Improved nutrient uptake and utilization
- Renewed soil aeration
- Improved water infiltration, utilization and drainage
- Reduced soil compaction and improved soil tilth
- Surface crop residue mixed into the soil through biological activity
- Increased crop residue decomposition
- Increased soil organic matter/humus
- Balancing of soil pH and increased micronutrient chelation
- Subsoil minerals become available
- Improved pathogen resistance
- Improved nematode control
- Decreased soil toxicity
- Stronger and healthier plants
- Improved crop yields and quality

## Microbiology is Everywhere Soil and Plants



## Microbiology is the Foundation to a Healthy Production System





### Biological Nutrient Cycles

- All of our nutrients function within biological cycles—carbon, nitrogen, phosphorous, sulfur—these are all good examples of major nutrients that function in biological cycles and it's only as you understand how the biology will impact these nutrients that you can really begin to manage them.
- Microorganisms are central to the operation of these cycles and the nutrient forms will change depending on the microbiology that is present in your soil.

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### Mineral Percent of Dry Weight Plant Matter

MACRO NUTRIENTS			
	Symbol	Atomic Weight	Plant Dry Weight %
Hydrogen	H	1	0.6
Carbon	C	12	45
Nitrogen	N	14	1.5
Oxygen	O	16	45
Magnesium	Mg	24	0.2
Potassium	K	39	1
Calcium	Ca	40	0.5
Phosphorous	P	31	0.2
Sulfur	S	32	0.1
<b>Total</b>			<b>99.65%</b>

Structural Components

MICROS AND TRACE NUTRIENTS			
	Symbol	Atomic Weight	Plant Dry Weight %
Boron	B	11	0.002
Chlorine	Cl	35	0.01
Manganese	Mn	55	0.005
Iron	Fe	56	0.01
Copper	Cu	64	0.005
Zinc	Zn	65	0.002
Molybdenum	Mo	96	0.00001
<b>Sub Total</b>			<b>0.03501</b>
<b>All others</b>			<b>0.46499</b>
<b>Total</b>			<b>0.50%</b>

Cofactor Enzyme Activators

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### Building Test Weight, Nutrient Density and Brix Level

Percentage of Plant Weight			
45%	45%	6%	1.5%
C	O	H	N
Atomic Weight			
12	16	1	14

Test Weight & Quality Building Nutrients

Minerals	Atomic Wt.
P	31
K	39
S	32
Ca	40
Mn	55
Fe	55
Cu	63
Zn	65
Mo	95
etc.	

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### What does Mineral and Microbial Balance Do?

Reduces	Improves
Compaction	Drainage/Aeration
Disease	Microbial activity
Insects	Soil organic content
Weeds	Recycling of nutrients
Inputs	Mineral balance and availability
Toxins	Crop residue digestion
Salts	Water utilization and efficiency
Mineral tie-up	Optimize the plants genetic potential
Plant stress	Improves feed/food quality

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## Healthy Corn with a Mature and Dry Ear at Harvest



- ▶ High test weight & nutrient density
- ▶ Free of mycotoxins



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## Corn Test Weights:

Bu / Acre	200.00	200.00
lbs / Bu	56.00	15.5% moisture 61.00
Lbs / Acre	11,200.00	12,200.00
Bu Price	4.50	\$ 4.50
C.W.T	112.00	122.00
C.W.T. Price	\$ 8.04	\$ 8.04
Proceeds / Acre	\$ 900.48	\$ 980.88
\$\$ Difference / Acre ( \$16.08/A/lb twt)		\$ 80.40

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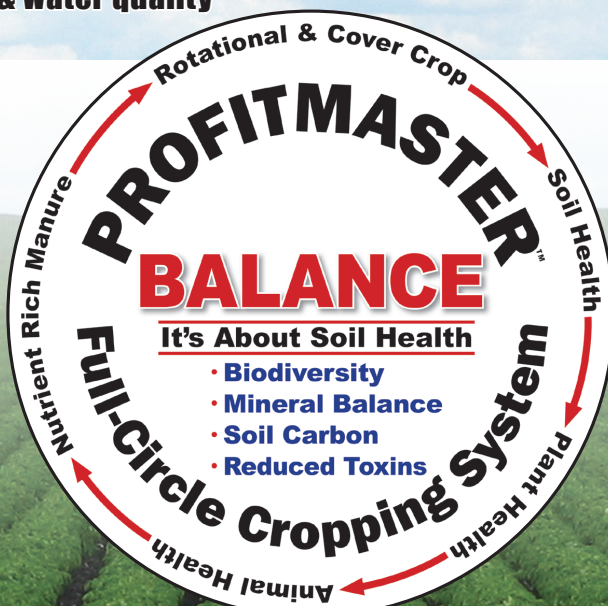
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# Regenerative & Sustainable Farming Systems

**can be repeated indefinitely with a positive impact to the environment, food chain and consumer.**

**It results in:**

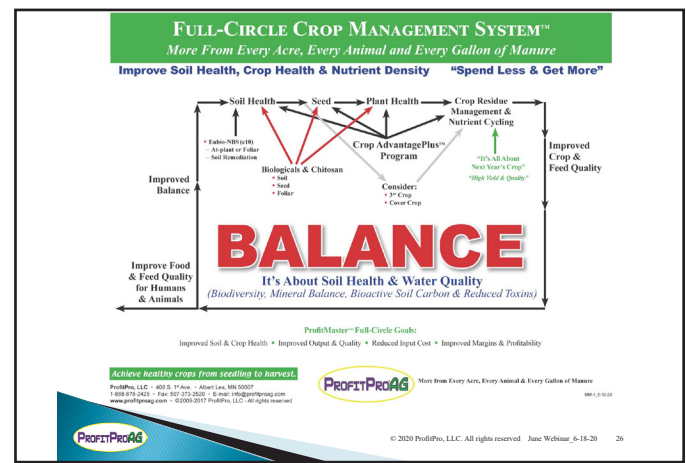
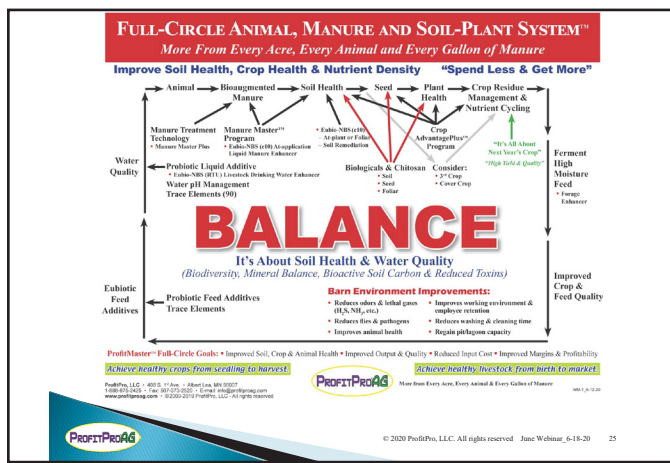
- a net gain in soil productivity
- carbon fixation in humus
- nutrient density to food & fiber
- improved air & water quality
- sustainable & profitable animal production
- net improvement in consumer health
- improvement in profitability



# THE FULL-CIRCLE REGENERATIVE & SUSTAINABLE CROP & LIVESTOCK PRODUCTION SYSTEM & TECHNOLOGIES:

## Objective:

- Control cost and maximize return on investment.
- Emphasize and harness a healthy microbiome and natural pest control approach.
- Bring the fence row back to the field row with a consortium of 54 fence row microbes.
- Achieve nutrient balance and availability with an emphasis on trace elements.
- Build & maintain healthy aerobic soils by maximizing bioactive carbon through diverse crop rotation & cover crops.
- Eliminate the use of toxic materials; high salt fertilizer, anhydrous, pesticides and GMO seed.
- The fall crop residue digestion and recycling program is the foundation to the Full-Circle System.



## Foundational Technologies:

- Microbiome
- Nutrition (emphasis on Trace Elements)

## Timelines & System Components:

- Fall
- Preplant
- At-plant
- In Season
- At Harvest
- After Harvest

## Natural Crop Management Technologies to be discussed as part of the Full-Circle System series:

- Multispecies Biologicals
- Natural Biological Stimulants
- Biological & Nutritional Seed Treatments
- Natural Biocontrol Agents for insect & nematode diseases
- Natural Nutritional Supplements including a sea mineral concentrate with 90 trace elements, a 4.5% silica concentrate & all natural ores such as soft rock phosphate, potassium sulfate & elemental sulfur
- 16% Humic & Fulvic Acid Concentrate
- Liquid Energy Sources such as molasses and sugar
- Crop Rotation & Cover Crop Strategies based on objectives



## Fall Crop Residue Digestion and Recycling Program:

This program will set the stage for the following:

- Complete crop residue digestion trapping the carbon (energy), nutrients and secondary microbial metabolites in the soil.
- Improve soil to seed contact and uniformity of seedling emergences.
- Complete digestion of the crop residue will help elimination or reduce mycotoxins, root and foliar diseases, insect and weed pressure. Remember pathogens and insects are nature's garbage collectors. They are there to take out the crops that are not worthy of reproducing. By building the bio-active carbon, biodiversity, nutrient balance and availability and eliminating toxins, cost of production over time will be reduced, while yield, quality and profitability per acre will increase.

## Crop Technologies:

### Biodyne Microbial products

- Seed treatment
- Soil - preplant, at-plant, early post plant
- Fall residue program

## ProfitProAG's Microbial Team Technologies & Capabilities

Green Regenerative & Sustainable Technology

### Microbial Groups and their Functions

- **Diazotrophic Microbes** – Nitrogen fixation from free N in atmosphere
- **Ammonifying Microbes** – Convert organic N to ammonia form
- **Phosphate Solubilizing Microbes** – Makes unavailable P available to plant/rhizosphere
- **Many Degradation Abilities** – Cellulose, lignin, chitin, starch, waxes, oils
- **Microbial Surfactant Production** – Free up more nutrients in soil/rhizosphere
- **Vitamin & Excretory Products** – Vitamins & molecules released from microbe cells into soil/rhizosphere
- **Nodulating** – Nitrogen fixing symbiotic relationship – nodules on soybeans
- **Siderophore Production** – “Iron Magnets” – more Iron availability in the soil/rhizosphere
- **Petroleum Hydrocarbon Bioremediation** – Oil, diesel, gas, soil and groundwater
- **Pesticide and Herbicide Bioremediation** – Specialized remediation capabilities
- **Fats, Oils, Grease, Common Organics Degradation** – Wastewater, pond treatments
- **Sulfur Oxidizing Capabilities** – Enhance sulfur oxidation in the soil and increase available sulfate

*All organisms are naturally occurring, non-pathogenic and not genetically modified*



### FENCE LINE FARMING — “It’s all about soil health.”

### Microbial Health = Soil Health

<b>DEPLOY</b> innovative biological technology	<b>UNLEASH</b> beneficial microorganisms	<b>RECLAIM</b> your soil and investment
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Source: <https://biodyne-usa.com/resources/biodyne-trial-data-reference-book/>

## Microbial Product Team

### All Season Soil & Crop Biological Enhancement

SEASONAL PRODUCTS <sup>1,2</sup>	Key Biological Activities	Application	Rate/Acre
<b>Preplant, At-plant or Preemergence</b>			
<b>Biocast Plus</b> – The Broadest Consortium of Microbes Available <ul style="list-style-type: none"><li>• 52 Microbes</li><li>• Combination of MeltDown &amp; BD-Biocast</li><li>• If no fall crop residue digestion program applied</li><li>• Can apply with preplant or preemergence herbicide and/or with liquid nitrogen</li></ul>	Crop Residue Digestion, Soil Microbial Health & Plant Stimulation	Broadcast	1 qt
<b>Envirozone 401</b> – Diverse Team of Beneficial Microbes (OMRI Listed) <sup>3</sup> <ul style="list-style-type: none"><li>• 29 Microbes</li><li>• Organic producers can apply in-furrow or preemergence broadcast</li></ul>	Soil Microbial Health & Plant Stimulation	In-furrow or 2x2 or can apply Preemergence on organic production	1 pt
<b>BD-Biocast</b> – Diverse Team of Beneficial Microbes <ul style="list-style-type: none"><li>• 29 Microbes</li><li>• Spring Application Broadcast</li></ul>	Soil Microbial Health & Plant Stimulation	Preplant, Preemergence or Sidedress	1 qt
<b>In Season</b>			
<b>Respite Rx</b> – Ethylene Inhibition <ul style="list-style-type: none"><li>• Can make multiple applications throughout growing season</li></ul>	Reduces Plant Stress, Enhances Carbon Fixation & promotes Rapid Growth & Maturing	Broadcast	4 oz
<b>Harvest Options</b>			
1. Corn-on-Corn <b>MeltDown</b> – More Concentrated Consortium of Residue Digestive Microbes <ul style="list-style-type: none"><li>• 25 Microbes with food source</li></ul>	Fall Corn Residue Digestion	Broadcast	1 qt
2. Corn following Soybeans <b>Envirozone 501</b> – Consortium of Residue Digestive Microbes (OMRI Listed) <sup>3</sup> <ul style="list-style-type: none"><li>• 25 Microbes</li></ul>	Fall Soybean Residue Digestion	Broadcast	1 pt

Note: <sup>1</sup>Envirozone 401 & 501 are OMRI Listed  
<sup>2</sup>Microbial products labeled for all crops  
<sup>3</sup>Apply microbial products in a minimum of 10 gallons of water or more.

## The Microbial Soil & Plant Relationship


### Soil Feeding the Plant

**NITROGEN FIXATION**  
Several microbes are able to convert freely available atmospheric nitrogen into a plant available form.

**NITROGEN MINERALIZATION**  
Several microbes are able to convert soil born nitrogen into plant available form. Mining the N currently unavailable within the soil.

**PHOSPHORUS SOLUBILIZATION**  
Several microbes have the ability to solubilize otherwise insoluble phosphorus and make it available to the plants.

**SURFACTANT PRODUCTION**  
Several microbes are able to reduce soil surface tension to free up more organic and inorganic nutrients.



**Plant Feeding the Soil**

**PLANT GROWTH PROMOTION**  
Several microbes have the ability to release vitamins and excretory products that stimulate growth and other developmental activities.

**MICRONUTRIENT AVAILABILITY**  
Several microbes have the ability to enhance micronutrient availability including siderophore production to help attract iron to the plant.

**DEGRADATION CAPABILITIES**  
Several microbes have the ability to degrade hydrocarbons, cellulose, lignin, chitin, starch and other compounds present in the soil improving soil health.

## Eubio-NBS (Natural Biological Stimulant)

- Seed treatment
- Soil - preplant, at-plant, early post plant & foliar
- Fall residue program

## Next month's newsletter & webinar:

Next month we will discuss the benefits of using the Eubio-NBS (c10) (Natural Biological Stimulant) technology in the Full-Circle System.

Growers and experts who are practicing the Full-Circle System will be invited to share their success stories.

**ProfitPro®AG invites YOU to their**  
**FREE WEBINAR**  
**the third THURSDAY of each month.**

**A cost-effective and convenient way to gain knowledge  
on new crop production technologies**

**It's Easy . . . It's FREE**  
**Thursday, June 18, 2020**  
**8:00 p.m. Central Time**

**UPCOMING SUBJECTS**

- **The Full-Circle Regenerative & Sustainable  
Crop & Livestock Production System:**

*“A Natural Microbiological & Nutritional Approach to Enhanced Profitability.”*

Dr. Jim Ladlie, *ProfitProAG President* will discuss the upcoming subjects and answer questions.

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We will no longer be using the teleconference format for our monthly teleconferences, instead we have upgraded to a new webinar format. This allows us to have a much better presentation with visual graphics and better interaction with our presenters and attendees. It also allows us flexibility to archive the webinar and publish it on our website for future viewing. We hope this will make for a better overall user experience. If there are longtime teleconference members that might be disappointed in this upgrade, we would like to hear from you and find out your opinions and see if we can accommodate your needs. You can contact us through the website or just give us a call at 507-373-2550. Thanks for your past and continued support. We are excited to be able to bring you the best information in the most accessible format we can.