

December, 2022

## DON'T MISS THE COMPLETE PICTURE

The increase in fertilizer costs as well as the emergence of local supply shortfalls has been unprecedented. Although crop prices have remained high enough so far to support these high input costs, farmers still have an incentive to find alternative ways to feed their crops and improve net returns.

As we have explained for the past 40 years, farmers can enhance the biological activity in the soil to make more efficient use of scarce or expensive nutrients. Most soils contain ample nutrients in mineral form, and microbes can make more of these resources available to plants. Over the years, many of our customers have reduced their applied fertilizer rates while maintaining or increasing crop yields by enhancing the biological activity in the soil.

Although microbial enhancing products have been around for decades, the current fertilizer situation has helped to draw fresh attention to our product category. Several new and existing companies are now promoting products that are intended to increase soil fertility by building soil health. Enzyme-based products like Chandler Soil can help farmers cope with high fertilizer prices until the supply situation is resolved.

However, we also encourage everyone to look beyond the fertility aspect of microbial activity and consider the complete set of long-term benefits from building soil health. Over the past 40 years, we have seen many long-term benefits from enhancing biological activity in the soil.

There are many dimensions to soil health, and the complete picture includes several prominent long-term benefits:

- Faster organic matter formation in soils, which builds nutrient bonding and water holding capacity
- Improved water infiltration rates, which reduces surface run-off and erosion and builds soil moisture reserves that plants can draw on during dry spells
- Less soil compaction and deeper root penetration, which allows plants to draw on subsoil moisture and nutrients
- Reduced compaction also helps with tillage operations, and our customers tell us they use less fuel and spend less time on field work
- Bigger root systems that help plants access more nutrients and develop higher plant sugar levels, which deter most harmful insects
- Higher microbial activity also boosts residue decay rates, so you have less trouble with undecayed stalks that can hamper planting and tillage equipment and damage tires
- Faster residue decay also breaks down dropped corn ears and weed seeds over time, so you have less volunteer corn and weed pressure

If you recently tried the Chandler products or other biologicals for the first time, we encourage you to stick with the program on the same ground for a few years. Some changes can take three or more years to develop, and you don't want to miss the most valuable long-term benefits.

## 31<sup>TH</sup> ANNIVERSARY NO-TILL CONFERENCE

The 2023 National No-Till Conference will meet on January 10-13, 2023. This will be the 31<sup>th</sup> annual conference, and it will convene at the Hyatt Regency St. Louis Arch in St. Louis, MO. For the third year, we are a title sponsor for the event, and we will have an exhibit at the conference. If you will be at the No-Till Conference, please drop by our booth to say hello. Also, if you have not signed up for the conference yet and want to go, let us know and we can provide a discount code to use at the NNTC website, [www.no-tillfarmer.com/nntc](http://www.no-tillfarmer.com/nntc).

## FIELD REPORTS FROM THE 2022 CROP

Although the crop season just ended, we have received several reports from our customers who used one or more Chandler crop products in 2022. Under our privacy policy, we do not identify the farmers by name or location, but we do provide the main details as reported to us. Some of the highlights of these reports include:

- Several people reduced their fertilizer applications due to higher prices or local shortages. The practices varied widely, and some folks reduced N rates while others did not apply much potash or phosphorus. Some farmers relied on starters to feed the crop while others cut back on foliar feeding. In each case, the Chandler users said their yields were not affected by these changes in the fertility program.
- Rainfall was highly variable across the country, but most areas tended to be a bit dry. Users of Chandler Soil and Dry Seed Treat reported near-normal yields in dry areas, and some folks reported corn yields within 30 BPA of normal in extremely dry areas.
- Weather also affected decisions to apply foliar treatments, but we did hear several good reports from people who used Chandler Foliar on alfalfa and grass hay as well as soybeans.

## GOOD NEWS – NO PRICE CHANGE FOR SPRING 2023

After holding prices constant for nearly six years, we had to follow Chandler and increase our product prices twice in 2022. While some of our costs are leveling off, other costs continue to increase. One example is our UPS shipping costs, which are scheduled to increase by another 7% in January. However, we are very happy to announce that we will maintain our prices and shipping fees at the current level for the Spring 2023 season.

To help with your spring planning, we estimate the expected net returns from using the Chandler crop products in 2023. The net returns are based on the latest projected farm prices for new-crop corn (\$5.50) and soybeans (\$13). The per-acre costs are based on the full retail price of the Chandler products, and the net returns will be higher if you take advantage of our volume or early order discounts.

### ***Dry Seed Treat***

One 15# bucket treats about 60 bags or units of corn or bean seed at 4 ounces per unit. At the full retail price for a single bucket (\$200), the product cost is \$3.35 per unit. If you buy six or more buckets under the December discount, Dry Seed Treat costs only \$2.85 per unit. Accordingly, the per-acre cost ranges from \$1.15 to \$1.35 for corn and \$2.85 to \$3.35 for soybeans. To be conservative, we compute the net return based on half of the expected yield gain that we see from Dry Seed Treat:

	<b>Corn</b>	<b>Soybeans</b>
<b>Yield gain</b>	+4 BPA	+2 BPA
<b>Revenue gain</b>	\$22.00 / A	\$26.00 / A
<b>Cost per acre</b>	\$1.35	\$3.35
<b>Net return</b>	\$20.65 / A	\$22.65 / A

### ***Liquid Seed Treat***

One gallon treats 64 bags or units of seed at 2 ounces per unit. At the new retail price for a single gallon (\$162), the product cost

is \$2.55 per unit. If you buy a 2.5 gallon jug at the December discount, Liquid Seed Treat costs \$2.20 per unit. Thus, the per-acre cost runs from \$0.90 to \$1.00 for corn and \$2.20 to \$2.55 for soybeans. The expected yield gains are identical to Dry Seed Treat, and the expected net returns for 2023 are:

	<b>Corn</b>	<b>Soybeans</b>
<b>Yield gain</b>	+4 BPA	+2 BPA
<b>Revenue gain</b>	\$22.00 / A	\$26.00 / A
<b>Cost per acre</b>	\$1.00	\$2.55
<b>Net return</b>	\$21.00 / A	\$21.45 / A

### **Chandler Soil**

At the full retail price for a gallon jug, Chandler Soil costs about \$15.60 per acre when broadcast and \$7.80 per acre in the row. Under the December drum-quantity discount, Soil costs \$12.50 per acre when broadcast and \$6.25 per acre in the row. Our recent on-farm test results showed 5 to 12 BPA more corn and 2 to 15 BPA more beans, and the yield increase is about the same for broadcast or in-row treatments.

The net returns for 2023 are based on the lower end of these yield increases for corn (+5 BPA) and beans (+2 BPA):

<b>Corn</b>	<b>Banded</b>	<b>Broadcast</b>
<b>Yield gain</b>	+5 BPA	+5 BPA
<b>Revenue gain</b>	\$27.50 / A	\$27.50 / A
<b>Cost per acre</b>	\$7.80	\$15.60
<b>Net return</b>	\$19.70 / A	\$11.90 / A
<b>Soybeans</b>	<b>Banded</b>	<b>Broadcast</b>
<b>Yield gain</b>	+2 BPA	+2 BPA
<b>Revenue gain</b>	\$26.00 / A	\$26.00 / A
<b>Cost per acre</b>	\$7.80	\$15.60
<b>Net return</b>	\$18.20 / A	\$10.40 / A

These results only reflect the yield gains from the first-year of use and do not reflect the long-term advantages listed on the first page of the newsletter (such as higher organic matter and better water infiltration).

### **Chandler Biocat 1000**

At the full retail price for a gallon jug, Biocat 1000 costs \$15.40 per acre at the 16-ounce per acre rate. Based on recent on-farm trials, Biocat 1000 applied in the spring can decay an additional 1.0 to 2.0 tons of corn residue per acre (or more) by early summer. The estimated value of these recycled nutrients recycled is based on retail fertilizer prices for several different sources of NPK and S. At this time, the nutrients recycled from corn residue are worth \$42.32 per ton. After subtracting the product cost, the expected net returns from using Biocat 1000 in Spring 2023 are:

	<b>1.0 tons</b>	<b>1.5 tons</b>	<b>2.0 tons</b>
Nitrogen	\$16.00	\$24.00	\$32.00
P <sub>2</sub> O <sub>5</sub>	4.32	6.48	8.64
K <sub>2</sub> O	21.60	32.40	43.20
Sulfur	0.40	0.60	0.80
<b>Total value</b>	<b>\$42.32</b>	<b>\$63.48</b>	<b>\$84.64</b>
<b>Cost per A</b>	<b>-\$15.40</b>	<b>-\$15.40</b>	<b>-\$15.40</b>
<b>Net return</b>	<b>\$26.92</b>	<b>\$48.08</b>	<b>\$69.24</b>

Biocat 1000 can also accelerate the decay of soybean and wheat residue, and we provide the expected returns at our website. In general, these crop residues have lower tonnage per acre than corn, but they have higher value per ton. Relative to corn, bean residue has much higher N content, and wheat straw has more K. Also, Biocat 1000 costs less per acre for bean, wheat, and rye residue because you can use a lower application rate (8-10 ounces per acre).

### **LATEST BIOCAT 1000 TEST**

Last fall, we completed an on-farm test of Biocat 1000 applied to corn stalks in the spring. The soil health test results showed a strong increase in decay activity:

	<b>Treated</b>	<b>Control</b>	<b>Increase</b>
<b>CO<sub>2</sub> Burst</b>	156 #/acre	114 #/acre	+36.8%
<b>Amino nitrogen</b>	146.7 #/acre	130.0 #/acre	+12.8%
<b>Active carbon</b>	1608.4 #/acre	1526.0 #/acre	+5.4%

## OUR EXPANDED WINTER SHOW SCHEDULE

For the first time, we are exhibiting at two winter shows we have not attended in the past. We typically had conflicting events with the Nebraska Ag Expo in Lincoln, NE, and the Iowa Ag Expo in Des Moines, IA, but the 2022-2023 schedules allowed us to try these shows. We have heard from our Iowa and Nebraska customers that these are excellent shows, and we look forward to seeing everyone at these events. Our farm show schedule for this winter is:

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|----------------------|--|
| Nov. 29<br>to Dec. 1 | Greater Peoria Farm Show<br>Peoria Civic Center<br>Peoria, IL                |
| Dec. 6-8             | Nebraska Ag Expo<br>Lancaster Event Center<br>Lincoln, NE                    |
| Dec. 13-15           | Indiana Farm Tech Expo<br>Grand Park Sports Campus<br>Westfield, IN          |
| Jan. 10-13           | National No-Till Conference<br>Hyatt Regency St. Louis Arch<br>St. Louis, MO |
| Jan. 15-17           | Quad Cities Farm Show<br>QCCA Expo Center<br>Rock Island, IL                 |
| Jan. 17-19           | Fort Wayne Farm Show<br>Allen County Coliseum<br>Fort Wayne, IN              |
| Jan. 25-26           | Midwest Ag Expo<br>Gordyville USA<br>Gifford, IL                             |
| Jan. 31<br>to Feb. 2 | Iowa Ag Expo<br>Iowa Events Center<br>Des Moines, IA                         |
| Feb. 28<br>to Mar. 2 | Hawkeye Farm Show<br>University Dome<br>Cedar Falls, IA                      |

Please note that we are also going back to the Indiana Farm Equipment & Technology Show in December, which we returned to last year after several years away. This worked very well for us last year, and we are looking forward to this event plus our usual set of winter shows.

If you want to pick up product at one of these events, please let us know at least **5 days** in advance.

## SPRING DISCOUNT PRICE LIST ENCLOSED

Our spring discount price list is included with the newsletter. The spring discounts begin on December 1, 2022, and run through March 31, 2023. Please note the December discount ends on January 7, 2023. Regular retail prices go back in effect on April 1, 2023. You must pay for the product within the stated discount period to qualify for that discount. Also, you can place an early order, and we can hold your items for delivery later in the spring.

Although our UPS and shipping costs continue to rise, we have not changed our shipping fees for customers. Also, we continue to offer free shipping on all orders of \$1,000 or more. As always, you can arrange to pick up your product at one of the winter shows and save the shipping charges.

## DEEPER DISCOUNT FOR TOTE-QUANTITY ORDERS

As we announced in the September newsletter, we now offer tote-quantity discounts for partial totes of 120 gallons or more on any liquid crop product. We have also increased the tote-quantity discount from \$2 per gallon to \$5 per gallon.



*Seasons  
Greetings*

We want to take this opportunity to thank you for the privilege of serving you in the past year, and we look forward to working together in the future. We also extend our best wishes for the season and for the New Year!

Sincerely,

*Jim and Doug Miller*

## 2022-2023 PRE-SEASON DISCOUNT PROGRAM for CHANDLER CROP PRODUCTS

# ORDER FORM

## MIDWEST BIO-TECH, INC.

P.O. Box 156 – ERIE, IL 61250  
Phone 309-659-7773

<u>Chandler Products</u>	<b>Retail</b>	<b>March</b>	<b>Feb</b>	<b>Jan</b>	<b>Dec</b>
15# bucket of Dry Seed Treat	200.00	195.00	190.00	185.00	180.00
2 to 5 buckets (per bucket)	195.00	190.00	185.00	180.00	175.00
6 or more buckets (per bucket)	190.00	185.00	180.00	175.00	170.00
Single gallon of Liquid Seed Treat	162.00	158.00	154.00	150.00	146.00
2.5 gallon Liquid Seed Treat (per gal.) (per 2.5 gal. jug)	156.00 390.00	152.00 380.00	148.00 370.00	144.00 360.00	140.00 350.00
30 gallon Liquid Seed Treat (per gal.)	146.00	142.00	138.00	134.00	130.00
Single gallon of Chandler Soil	125.00	122.00	119.00	116.00	113.00
2.5 gallon Soil (per gal.) (per 2.5 gal. jug)	120.00 300.00	117.00 293.00	114.00 285.00	111.00 277.00	108.00 270.00
30 gallon Soil (per gal.)	112.00	109.00	106.00	103.00	100.00
Single gallon of Biocat 1000	123.00	120.00	117.00	114.00	111.00
2.5 gallon Biocat 1000 (per gal.) (per 2.5 gal. jug)	118.00 295.00	115.00 288.00	112.00 280.00	109.00 272.00	106.00 265.00
30 gallon Biocat 1000 (per gal.)	110.00	107.00	104.00	101.00	98.00
Single gallon of Chandler Foliar	152.00	148.00	144.00	140.00	136.00
2.5 gallon Foliar (per gal.) (per 2.5 gal. jug)	146.00 365.00	142.00 355.00	138.00 345.00	134.00 335.00	130.00 325.00
30 gallon Foliar (per gal.)	136.00	132.00	128.00	124.00	120.00
Single gallon of Chandler Organic	142.00	138.00	134.00	130.00	126.00
2.5 gallon Organic (per gal.) (per 2.5 gal. jug)	136.00 340.00	132.00 330.00	128.00 320.00	124.00 310.00	120.00 300.00
30 gallon Organic (per gal.)	126.00	122.00	118.00	114.00	110.00

Dry Seed Treat is priced per bucket. We offer quantity discounts for pallets of 48 buckets. All other products are priced per gallon. We offer quantity discounts for 120+ gallon totes.

- A – The 12% December discount period ends at midnight on January 7, 2023
- B – The January, February, and March discount periods end at midnight on the last calendar day of the month
- C – Customer must pay for product within the specified discount period to get that discount
- D – You may take delivery of the product at time of payment or we can store it for you until spring
- E – Prices are subject to change, and product cannot be returned for credit or exchange due to insurance regulations
- F – All prices are F.O.B. Erie, IL

Name \_\_\_\_\_  
(please print)  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_ ZIP \_\_\_\_\_  
Phone \_\_\_\_\_ - \_\_\_\_\_

<b>Qty</b>	<b>Products</b>	<b>Unit Price</b>	<b>Item Total</b>
	15# Bkt Dry Seed Treat		
	Gal Liquid Seed Treat		
	2½ Gal Liquid Seed Treat		
	30 Gal Liquid Seed Treat		
	Gal Soil		
	2½ Gal Soil		
	30 Gal Soil		
	Gal Biocat 1000		
	2½ Gal Biocat 1000		
	30 Gal Biocat 1000		
	Gal Foliar		
	2½ Gal Foliar		
	30 Gal Foliar		
	Gal Chandler Organic		
	2½ Gal Chandler Organic		
	30 Gal Chandler Organic		

**PRICES SUBJECT TO CHANGE WITHOUT NOTICE**      Product Total \_\_\_\_\_  
UPS Shipping \_\_\_\_\_

TOTAL AMOUNT ENCLOSED \_\_\_\_\_

All orders over \$1,000 will be shipped Freight Free. For orders under \$1,000, add the following UPS fee:  
\$18.00 for each single gallon of liquid  
\$22.00 for each 15# bucket of Dry Seed  
\$24.00 for each 2.5 gallon jug of liquid

Enclose check payable to Midwest Bio-Tech, Inc.

Please provide your shipping instructions for this order on the back of this form.

## RECOMMENDED APPLICATION RATES FOR CHANDLER CROP PRODUCTS

When would you like to receive the product that you have ordered?

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What is the best way for us to contact you about the shipping details for this order? Please note that we will only use this information as needed to complete this order, and we never provide your name or other personal information to any other party without your prior permission.

Telephone call to:

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Text message sent to:

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Email message sent to:

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**THANK YOU FOR THIS BUSINESS!**

### Chandler Dry Seed Treat

4 ounces per bushel or unit for corn, beans, and small grains and 8 ounces per bushel for alfalfa, clover, vetch, or other small-seeded crops. The actual amount of Dry Seed Treat required depends on seed size and humidity, so you should adjust the rate if you need better seed coverage or have excess treatment in the seed hopper.

### Chandler Liquid Seed Treat

2 ounces per bushel for corn, beans, and small grains and 4 ounces per bushel for alfalfa, clover, vetch, or other small-seeded crops.

### Chandler Soil

Broadcast 12-16 ounces per acre in the fall or spring or apply 8-10 ounces per acre in the row at planting or when side-dressing. Use the higher rate in these ranges if you are using Chandler Soil for the first time or if your soil is heavy, compacted, or poorly drained.

### Chandler Biocat 1000

**Corn Residue** – 12-16 ounces per acre. We recommend that you use the 16 ounce rate for heavy residue in corn fields that yielded 200 BPA or more.

**Soybean and Small Grain Residue** – 8 to 10 ounces per acre

### Chandler Foliar

**Alfalfa** – for new seedings, apply 10 ounces per acre. For established crops, apply 10 ounces per acre after the first spring growth. Later, apply 10 ounces per acre 10-14 days after each cutting. For seed production, apply 10 ounces per acre before flowering.

**Oats** – apply 10 ounces per acre at the second to third leaf stage.

**Soybeans** – band 6-8 ounces per acre over the row or broadcast 10 ounces per acre. The best times to apply Foliar to soybeans are at the second to third trifoliolate leaf stage or between flowering and pod set.

**Wheat** – apply 8 ounces per acre at the second to third leaf stage. In the spring, apply 8 ounces per acre at the beginning of new plant growth or tillering.

**Pasture** – apply 8 to 10 ounces per acre when there is ample foliage to receive the spray.

### Chandler Organic

Use the application rates listed above for Chandler Soil when using Organic as a broadcast or in-row soil treatment, and use the same rates as Chandler Foliar for foliar treatments.