

December, 2021

HAPPY FORTIETH MIDWEST BIO-TECH!

Midwest Bio-Tech was founded by James and Carole Miller in November, 1981, so we have now been in business for 40 years. Like many people who celebrate landmark anniversaries, we have spent some time thinking about the many changes in our business over the past 40 years. For example, we were reminded that the world was a much different place in 1981:

- President Reagan had been in office for less than one year
- The national average corn price was \$2.50 per bushel and the national average corn yield was 108.9 BPA
- Roundup had only been on the market for five years, and herbicide-resistant crops wouldn't emerge for another 15 years. So, many farmers used PVC pipes to build their own rope-wick applicators in 1981.
- "Auto steer" meant running the front tractor tire in the furrow while moldboard plowing. Mechanical auto-steer was invented in the 60's, but it was not fully practical until it was linked to GPS in the mid-90's.
- Very few farms had personal computers in 1981, and nobody had cell phones, iPads, or ear buds
- Getting Bluetooth in 1981 meant an emergency trip to the dentist
- We only received three TV channels by antenna, and cable TV was not available. We could get a fourth channel if the weather between Erie and Iowa City was just right.

We have also worked hard to develop Midwest Bio-Tech and help more farmers since 1981. In the past 40 years, we have:

- Grown from our original territory in eastern Iowa and northern Illinois to serve customers in 44 states
- Spent over three and a half years exhibiting at farm shows and other industry events
- Worked with 10 different people in the show booth over the years
- Published 115 quarterly editions of the *Midwest Bio-Tech News*
- Started our first webpage in 2000, and we added a second site for the Soil Health Lab two years ago
- Used three different facilities for the business, including our present office and warehouse built in 2013

We greatly appreciate the opportunity to serve you in the past, and we look forward to continue growing with you in the future.

30TH ANNIVERSARY NO-TILL CONFERENCE

The 2022 National No-Till Conference will return as an in-person meeting on January 4-7, 2022. This will be the 30th annual conference, and it will convene at the Galt House Hotel in Louisville, KY. For the second year, we are supporting this event as a title sponsor, and we will have an exhibit at the Galt House throughout 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, you can still register online at www.no-tillfarmer.com/nntc.

PRICES UP FOR 2022 BUT VALUE REMAINS STRONG

Unlike many other farm input suppliers, we do not adjust our product prices to follow the latest bump in crop prices. Both Chandler and Midwest Bio-Tech have always based our pricing on the actual costs of producing and distributing the products. Although we faced moderately higher costs from 2016 to 2021, we held the line on our prices for nearly six years. However, we are now facing sharply higher costs for many of our inputs and packaging supplies, we have had to raise our prices for the 2022 spring discount period.

Effective immediately, the regular retail prices for the Chandler crop products are going up by 12% to 16%. Although our shipping costs continue to increase, we will maintain the same shipping fees that we charged in 2021. Also, we still offer free shipping on all orders over \$800, and we continue to offer the same 3% to 12% early order discounts. The spring discount price list is enclosed with the newsletter.

Even at the new prices, the Chandler crop products still offer excellent value for crop production. To illustrate this point, we estimate the expected net returns from using the Chandler crop products in 2022. The net returns are based on the latest projected farm prices for corn (\$4.50) and soybeans (\$12). 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

The new prices for Dry Seed Treat have increased by about \$20 per bucket, so this increase is less than \$0.15 per acre for corn. One 15# bucket treats about 60 bags or units of corn or bean seed at 4 ounces per unit. At the new retail price for a single bucket (\$180), the product cost is \$3.00 per unit. If you buy six or more buckets under the December discount, Dry Seed Treat costs only \$2.50 per unit. Accordingly, the per-acre cost ranges from \$1.00 to \$1.20

for corn and \$2.50 to \$3.00 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:

	Corn	Soybeans
Yield gain	+4 BPA	+2 BPA
Revenue gain	\$18.00 / A	\$24.00 / A
Cost per acre	\$1.20	\$3.00
Net return	\$16.80 / A	\$21.00 / A

Liquid Seed Treat

The new prices for Liquid Seed Treat have increased by \$14 to \$19 per gallon, so this cost has risen by less than \$0.30 per acre for corn. One gallon treats 64 bags or units of seed at 2 ounces per unit. At the new retail price for a single gallon (\$152), the product cost is \$2.40 per unit. If you buy a 2.5 gallon jug at the December discount, Liquid Seed Treat costs \$2.05 per unit. Thus, the per-acre cost runs from \$0.75 to \$0.95 for corn and \$2.05 to \$2.40 for soybeans. The expected yield gains are identical to Dry Seed Treat, and Liquid Seed Treat still costs less per acre than Dry Seed Treat because the liquid product does not include the dry carrier. The expected net returns for 2022 are:

	Corn	Soybeans
Yield gain	+4 BPA	+2 BPA
Revenue gain	\$18.00 / A	\$24.00 / A
Cost per acre	\$0.95	\$2.40
Net return	\$17.05 / A	\$21.60 / A

Chandler Soil

The new prices for Chandler Soil have increased by about \$12 per gallon, which is about \$1.50 per acre when broadcast and \$0.75 per acre for in-row applications. Our recent on-farm test results showed 5 to 12 BPA more corn and 2 to 15 BPA more beans with 8 ounces per acre of Chandler Soil applied in-furrow or near the row. Our on-farm tests also showed the same yield results when Chandler Soil is broadcast at 16 ounces per acre.

The net returns for 2022 are based on the lower end of these yield increases for corn (+5 BPA) and beans (+2 BPA):

Corn	Banded	Broadcast
Yield gain	+5 BPA	+5 BPA
Revenue gain	\$22.50 / A	\$22.50 / A
Cost per acre	\$6.37	\$12.75
Net return	\$16.13 / A	\$9.75 / A
Soybeans	Banded	Broadcast
Yield gain	+2 BPA	+2 BPA
Revenue gain	\$24.00 / A	\$24.00 / A
Cost per acre	\$6.37	\$12.75
Net return	\$17.63 / A	\$11.25 / A

Please note that these results only reflect the yield benefits from a first-year treatment and do not reflect the long-term advantages from higher organic matter, better water infiltration, and improved soil health.

Chandler Biocat 1000

The new prices for Biocat 1000 have also risen by about \$12 per gallon. 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. To estimate the value of these additional nutrients recycled from residue, we use retail fertilizer prices for several different sources of NPK and S and derive the average cost per pound. At this time, the nutrients recycled from corn residue are worth \$30.90 per ton.

After subtracting the product cost and \$5 per acre for product application, the net returns from using Biocat 1000 in 2022 are:

	1.0 tons	1.5 tons	2.0 tons
Nitrogen	\$10.00	\$15.00	\$20.00
P ₂ O ₅	2.40	3.60	4.80
K ₂ O	18.00	27.00	36.00
Sulfur	0.50	0.75	1.00
Total value	\$30.90	\$46.35	\$61.80
Application	-\$16.00	-\$16.00	-\$16.00
Net return	\$13.90	\$30.35	\$45.80

Undecayed soybean residue generally causes less trouble with tillage and planting than corn stalks because there is less tonnage per acre and it tends to decay faster. However, soybean residue has higher value per ton (\$41.70) than corn residue because it has more nitrogen and phosphorus and nearly as much potash. By applying Biocat 1000 to bean residue, we can expect to decay an additional 0.75 to 1.25 tons of residue per acre (or more). The expected net returns from accelerated bean residue decay in 2022 are:

	0.75 ton	1.0 ton	1.25 ton
Nitrogen	\$16.88	\$22.50	\$28.12
P ₂ O ₅	3.00	4.00	5.00
K ₂ O	11.25	15.00	18.75
Sulfur	0.15	0.20	0.25
Total value	\$31.28	\$41.70	\$52.12
Application	-\$10.50	-\$10.50	-\$10.50
Net return	\$20.78	\$31.20	\$41.62

For both corn and beans, we expect Biocat 1000 to net roughly \$2 for each dollar invested in recycling nutrients from residue.

Chandler Foliar

The new prices for Foliar are \$13 to \$19 per gallon higher, which is less than \$1.50 per acre. The expected net returns from applying Chandler Foliar to corn and soybeans are based on the full retail price of Foliar purchased in 2.5 gallon jugs (\$340), and the net returns will be higher if you buy under the volume and early order discounts. The new product cost is \$10.65 per acre. We also include \$5 per acre for application cost, but you can save an extra trip across the field by applying Foliar along with pesticides or foliar fertilizers. Finally, we use conservative expected yield gains that are less than our recent field results:

	Corn	Soybeans
Yield gain	+8 BPA	+4 BPA
Revenue gain	\$36.00 / A	\$48.00 / A
Cost per acre	\$10.65	\$10.65
Net return	\$25.35 / A	\$37.35 / A

PACKING MATERIALS ARE RECYCLABLE

If you receive your Chandler products through UPS or commercial freight carriers, please note that most of our packing materials come from renewable sources and may be recycled through local waste handlers. For example, all of the cardboard boxes and wood pallets may be recycled. Also, the packing peanuts that we use to fill the boxes shipped by UPS are made from corn starch. You can reuse the peanuts, or you can dispose of them by dissolving the peanuts in water.

In most cases, the only component in our packages that cannot be recycled is the foam base that is placed in the bottom of the box when we ship gallon or 2.5 gallon jugs by UPS. We use these Sealed Air foam packs instead of peanuts to provide better protection for the bottom of the jugs, and this foam must be discarded with your regular trash.

POWER PLANTER AUGERS FOR SEED TREAT

For the past several years, we have been a dealer for Power Planter augers. These steel augers were originally developed to help gardeners plant bulbs in soil, but our customers like to use these augers as a convenient way to mix Dry Seed Treat in their planter hoppers and bulk boxes.

The augers are 3 inches wide by 9 inches long, and they can be operated with a battery-powered drill. The steel surface is smooth, so the augers can quickly mix Dry Seed Treat with seed but do not damage seed coats when operated at low speed. If you are interested, we list the augers on our online store at midwestbio-tech.com.

DID YOU KNOW?

To measure the impact of Chandler Seed Treat and Foliar on plant sugar, we use a tool known as a spectrometer. For the past several years, we have purchased all of our spectrometers from Spectrum Technologies (www.specmeters.com).

BACK TO OUR USUAL WINTER SHOW SCHEDULE

Nov. 30 to Dec. 2	Greater Peoria Farm Show Peoria Civic Center Peoria, IL
Dec. 14-16	Indiana Farm Tech Expo Grand Park Sports Campus Westfield, IN
Jan. 4-7	National No-Till Conference The Galt House Hotel Louisville, KY
Jan. 16-18	Quad Cities Farm Show QCCA Expo Center Rock Island, IL
Jan. 18-20	Fort Wayne Farm Show Allen County Coliseum Fort Wayne, IN
Jan. 26-27	Midwest Ag Expo Gordyville USA Gifford, IL
Mar. 1-3	Hawkeye Farm Show University Dome Cedar Falls, IA

Please note that we are returning to the Indiana show in December for the first time in several years, and we had to miss the Illinois Fertilizer & Chemical Association Annual Meeting in January due to a direct conflict in our schedule. If you want to pick up product at one of these events, please let us know at least **5 days** in advance.



*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

**2021-2022 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

Chandler Products	Retail	March	Feb	Jan	Dec
15# bucket of Dry Seed Treat	180.00	175.00	170.00	165.00	160.00
2 to 5 buckets (per bucket)	175.00	170.00	165.00	160.00	155.00
6 or more buckets (per bucket)	170.00	165.00	160.00	155.00	150.00
Single gallon of Liquid Seed Treat	152.00	148.00	144.00	140.00	136.00
2.5 gallon Liquid Seed Treat (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 Liquid Seed Treat (per gal.)	136.00	132.00	128.00	124.00	120.00
Single gallon of Chandler Soil	115.00	112.00	109.00	106.00	103.00
2.5 gallon Soil (per gal.) (per 2.5 gal. jug)	110.00 275.00	107.00 268.00	104.00 260.00	101.00 252.00	98.00 245.00
30 gallon Soil (per gal.)	102.00	99.00	96.00	93.00	90.00
Single gallon of Biocat 1000	113.00	110.00	107.00	104.00	101.00
2.5 gallon Biocat 1000 (per gal.) (per 2.5 gal. jug)	108.00 270.00	105.00 263.00	102.00 255.00	99.00 247.00	96.00 240.00
30 gallon Biocat 1000 (per gal.)	100.00	97.00	94.00	91.00	88.00
Single gallon of Chandler Foliar	142.00	138.00	134.00	130.00	126.00
2.5 gallon Foliar (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 Foliar (per gal.)	126.00	122.00	118.00	114.00	110.00
Single gallon of Chandler Organic	132.00	128.00	124.00	120.00	116.00
2.5 gallon Organic (per gal.) (per 2.5 gal. jug)	126.00 315.00	122.00 305.00	118.00 295.00	114.00 285.00	110.00 280.00
30 gallon Organic (per gal.)	116.00	112.00	108.00	104.00	100.00

Name _____
(please print)
Address _____
City _____ State ____ ZIP _____
Phone _____ - _____

Qty	Products	Unit Price	Item Total
	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 NOTUCE Product Total _____
UPS Shipping _____

TOTAL AMOUNT ENCLOSED _____

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 180-270 gal. totes.

All orders over \$800.00 will be shipped Freight Free.
After January 8, add UPS fees for orders under \$800:
\$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

- A – The 12% December discount period ends at midnight on January 8, 2022
- 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

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?

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:

Text message sent to:

Email message sent to:

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.