

Cercospora Leaf Spot Program Trials

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Cercospora leaf spot (CLS) is the most destructive foliar disease to impact sugar beet production in the SMBSC growing area. Without effective new fungicides, controlling the disease has become more difficult. Despite some advancements in variety tolerance to CLS, the key to control is still utilizing best management practices that include an appropriately timed fungicide program that incorporates multiple modes of action, along with planting sugar beet varieties with higher levels of genetic tolerance to CLS.

Research Objective

- High levels of cercospora inoculum and a favorable environment for the development of CLS have been major contributors in causing losses to profitability of sugar beet production in the past. Trials need to be conducted to evaluate the efficacy of individual fungicides and season long fungicide programs.

Methodology

In 2025 the CLS Program Trials were conducted as randomized complete block with four replications located near Renville and Bird Island. These trials evaluated fungicides in a program setting. The Bird Island site was planted on April 23rd and the Renville site was planted on April 26th using Crystal M977 for the traditional (non-CR+) variety and Beta 9131 for the CR+ variety. Standard practices were used to keep the sites weed free. The sites were inoculated with pulverized leaves from the previous year that were infected with CLS. The inoculum was spread evenly across the sites with a Gandy Orbit-Air applicator shortly before canopy closure. Six fungicide applications were made in the Renville Program Trial beginning July 9th and the Bird Island Program Trial beginning on July 14th. The treatment list containing the fungicides used, rates, and timing of application can be found in Tables 5 and 6.

Applications were made using a custom-made tractor mounted sprayer traveling 3.3mph with a spray volume of 20gpa and 40psi, utilizing XR110025 spray nozzles (Photo 1). Each plot consisted of six rows that were 35ft in length. The sprayer used CO₂ as a propellant and was designed to apply the treatment to the center four rows, leaving rows one and six untreated. Plots were rated for foliar disease using a 1-9 scale with one being disease free and nine being completely necrotic. Plots were rated multiple times throughout the season by several members of the research staff. The center two rows of each six-row plot were harvested on September 16th for the Renville site and September 12th for the Bird Island site using a six-row defoliator and a two-row research harvester. The beets harvested from the center two rows were weighed on the harvester and a sample of those beets were used for a quality analysis at the SMBSC tare lab. The data was analyzed for significance using SAS GLM version 9.4.



Photo 1. Tractor mounted sprayer applying a fungicide treatment.

Results

At the Renville site there were significant yield differences with the untreated check for both CR+ and traditional varieties having lower extractable sugar per acre (Table 1). The late start three spray program also had lower ESA than many other treatments for the traditional variety. The foliar disease ratings in the Renville Program Trial were highest for the unsprayed checks followed by the programs with reduced applications or a late start (treatments 5-12) (Table 2). Differences in foliar disease ratings between all other treatments were minimal.

At the Bird Island site there were again significant yield differences with the untreated check for both CR+ and traditional varieties having lower extractable sugar per acre (Table 3). The rest of the treatments had similar yields. The foliar disease ratings in the Bird Island Program Trial were also highest for the unsprayed checks followed by treatments 11 and 12 which were a reduced spray program. The rest of the treatments had mostly similar disease ratings.

Table 1. Yield parameter results for the Renville CLS Program Trial. Values with different letters are significantly different. Table 5 contains a full description of each treatment.

| Program | Variety | Trt | Percent Sugar | Tons Per Acre | Percent Extractable Sugar | Extractable Sugar per Ton (lbs.) | Extractable Sugar per Acre (lbs.) | Percent Purity |
|-------------------------|---------|-----|---------------|---------------|---------------------------|----------------------------------|-----------------------------------|----------------|
| Check | CR+ | 1 | 13.4 i | 17.4 f | 11.2 j | 223.6 j | 3881.5 i | 90.9 f |
| | Trad | 2 | 13.3 i | 17.9 f | 11.0 j | 220.6 j | 3949.6 i | 90.6 ef |
| Standard | CR+ | 3 | 15.7 bcde | 22.9 abcd | 13.5 abc | 269.8 abc | 6204.7 abcdef | 92.1 a |
| | Trad | 4 | 15.3 defg | 22.4 bcde | 13.1 cdefgh | 261.2 cdefgh | 5991.8 cdefg | 91.7 abcd |
| 4 Spray | CR+ | 5 | 15.0 gh | 22.8 abcd | 12.8 ghi | 254.9 ghi | 5798.1 efg | 91.7 abcd |
| | Trad | 6 | 15.1 gh | 22.0 bcde | 12.7 ghi | 254.4 hi | 5614.1 fg | 91.2 cdef |
| 3 Spray | CR+ | 7 | 15.2 fg | 23.6 abcd | 12.9 fghi | 257.6 fghi | 6075.7 bcdefg | 91.4 abcde |
| | Trad | 8 | 15.0 gh | 21.4 de | 12.7 ghi | 254.3 hi | 5435.2 gh | 91.6 abcde |
| Late Start | CR+ | 9 | 15.4 cdefg | 22.5 bcde | 13.1 bcdefg | 262.2 cdefgh | 5874.2 defg | 91.8 abcd |
| | Trad | 10 | 15.0 gh | 22.1 bcde | 12.7 hi | 254.0 hi | 5602.0 fg | 91.4 abcde |
| Late Start 3 Spray | CR+ | 11 | 15.2 fg | 22.2 bcde | 13.0 defgh | 260.0 defgh | 5719.9 efg | 92.0 abc |
| | Trad | 12 | 14.7 h | 19.5 ef | 12.4 i | 248.8 i | 4822.6 h | 91.3 abcdef |
| Standard | CR+ | 13 | 16.3 a | 24.5 abc | 13.9 a | 278.7 a | 6813.5 ab | 91.9 abc |
| | Trad | 14 | 15.8 bcd | 23.5 abcd | 13.4 bcde | 267.8 bcde | 6322.0 abcdef | 91.4 abcde |
| Standard | CR+ | 15 | 16.0 ab | 22.7 bcd | 13.7 ab | 273.6 ab | 6162.7 abcdefg | 92.0 ab |
| | Trad | 16 | 15.9 ab | 23.8 abcd | 13.4 bcd | 268.5 bcd | 6389.2 abcde | 91.3 bcdef |
| Standard Fr. Copilot | CR+ | 17 | 15.8 abc | 24.4 abcd | 13.5 abc | 269.8 abc | 6569.6 abcd | 91.7 abcd |
| | Trad | 18 | 15.3 efg | 21.7 cde | 12.9 efgh | 258.6 efgh | 5603.1 fg | 91.1 def |
| Standard no adjuvant | CR+ | 19 | 15.6 bcdef | 25.8 a | 13.3 bcdef | 265.4 bcdef | 6831.5 a | 91.6 abcd |
| | Trad | 20 | 15.6 bcdef | 25.0 ab | 13.2 bcdefg | 264.2 bcdefg | 6678.4 abc | 91.5 abcde |
| Mean | | | 15.2 | 22.3 | 12.9 | 258.4 | 5762.4 | 91.5 |
| CV% | | | 2.1 | 9.6 | 2.7 | 2.7 | 9.0 | 0.6 |
| Pr>F | | | <.0001 | 0.0002 | <.0001 | <.0001 | <.0001 | 0.0251 |
| lsd (0.05) | | | 0.4501 | 3.06 | 0.4983 | 9.8182 | 743.35 | 0.7708 |

Table 2. Foliar ratings for the Renville Program Trial using the KWS (1-9) rating system with 1 being disease free and 9 being completely necrotic. Ratings with different letters are significantly different. Table 5 contains a full description of each entry.

| Program | Variety | Trt | Aug 14th | Aug 20th | Aug 28th | Sep. 8th |
|-------------------------|---------|-----|----------|----------|----------|----------|
| Check | CR+ | 1 | 6.3 a | 8.0 a | 8.8 a | 9.0 a |
| | Trad | 2 | 6.5 a | 8.1 a | 8.9 a | 9.0 a |
| Standard | CR+ | 3 | 3.1 de | 3.2 hij | 4.2 de | 4.6 d |
| | Trad | 4 | 2.3 e | 3.0 hij | 3.8 e | 4.3 d |
| 4 Spray | CR+ | 5 | 4.1 c | 4.3 cdef | 5.3 bc | 6.6 b |
| | Trad | 6 | 3.2 d | 4.0 efg | 4.8 cd | 6.1 bc |
| 3 Spray | CR+ | 7 | 5.0 b | 5.0 b | 5.6 b | 6.5 b |
| | Trad | 8 | 4.2 bc | 4.2 def | 5.0 bc | 5.9 bc |
| Late Start | CR+ | 9 | 4.2 bc | 4.6 bcde | 5.0 bc | 5.6 c |
| | Trad | 10 | 4.5 bc | 4.8 bcd | 5.3 bc | 5.7 c |
| Late Start 3 Spray | CR+ | 11 | 4.4 bc | 4.9 bc | 5.5 bc | 6.1 bc |
| | Trad | 12 | 4.2 bc | 4.5 bcde | 5.4 bc | 5.9 bc |
| Standard | CR+ | 13 | 2.8 de | 3.4 ghi | 4.1 e | 4.2 d |
| | Trad | 14 | 2.8 de | 3.1 hij | 3.8 e | 4.3 d |
| Standard | CR+ | 15 | 2.5 de | 2.8 ji | 3.8 e | 4.1 d |
| | Trad | 16 | 3.0 de | 3.3 ghij | 4.1 e | 4.5 d |
| Standard Fr. Copilot | CR+ | 17 | 3.1 de | 3.3 hij | 4.1 e | 4.5 d |
| | Trad | 18 | 2.5 de | 2.7 j | 3.6 e | 4.0 d |
| Standard no adjuvant | CR+ | 19 | 3.2 d | 3.7 fgh | 4.0 e | 4.0 d |
| | Trad | 20 | 2.5 de | 2.9 ji | 3.6 e | 4.0 d |
| Mean | | | 3.7 | 4.2 | 4.94 | 5.439 |
| CV% | | | 15.7 | 11.3 | 9.84 | 9.44 |
| Pr>F | | | <.0001 | <.0001 | <.0001 | <.0001 |
| lsd (0.05) | | | 0.82 | 0.67 | 0.69 | 0.73 |

Table 3. Yield parameter results for the Bird Island CLS Program Trial. Values with different letters are significantly different. Table 6 contains a full description of each treatment.

| Fungicide Program | Variety | Trt | Percent Sugar | Tons Per Acre | Percent Extractable Sugar | Extractable Sugar per Ton (lbs.) | Extractable Sugar per Acre (lbs.) | Percent Purity |
|-----------------------------|---------|-----|---------------|---------------|---------------------------|----------------------------------|-----------------------------------|----------------|
| Check | CR+ | 1 | 13.4 f | 18.0 | 11.2 e | 224.4 e | 4036.3 c | 91.0 |
| | Non-CR+ | 2 | 13.3 f | 17.8 | 11.0 e | 220.0 e | 3906.3 c | 90.6 |
| Standard 6 spray Program | CR+ | 3 | 14.8 abc | 22.0 | 12.5 ab | 248.8 ab | 5491.0 ab | 90.9 |
| | Non-CR+ | 4 | 14.4 cde | 22.5 | 12.2 bcd | 242.9 bcd | 5448.8 ab | 91.2 |
| 6 spray | CR+ | 5 | 14.7 abcd | 21.8 | 12.3 abcd | 246.4 abcd | 5373.0 ab | 90.9 |
| Veltyma not Inspire XT | Non-CR+ | 6 | 14.6 abcd | 22.3 | 12.4 abc | 247.1 abc | 5507.8 a | 91.4 |
| 6 spray No QoI or Topsin | CR+ | 7 | 14.5 bcde | 22.7 | 12.2 bcd | 244.5 bcd | 5538.6 a | 91.1 |
| | Non-CR+ | 8 | 14.3 de | 22.5 | 12.0 cd | 240.7 cd | 5424.7 ab | 91.2 |
| 6 spray | CR+ | 9 | 14.4 bcde | 21.4 | 12.0 d | 239.2 d | 5134.1 ab | 90.0 |
| Copper + Manzate | Non-CR+ | 10 | 14.2 e | 20.8 | 12.0 d | 239.3 d | 4971.2 ab | 91.2 |
| 4 spray extended intervals | CR+ | 11 | 14.4 de | 20.7 | 12.0 cd | 240.0 cd | 4954.2 ab | 90.8 |
| | Non-CR+ | 12 | 14.4 de | 22.2 | 12.1 cd | 241.9 bcd | 5364.7 ab | 91.2 |
| 6 spray | CR+ | 15 | 14.4 de | 22.6 | 12.1 cd | 241.9 bcd | 5469.4 ab | 91.1 |
| Provysol not Inspire XT | Non-CR+ | 16 | 14.5 bcde | 23.3 | 12.2 bcd | 245.1 bcd | 5696.7 a | 91.4 |
| 6 spray Lucento not Proline | CR+ | 19 | 15.0 a | 22.5 | 12.7 a | 254.0 a | 5725.7 a | 91.4 |
| | Non-CR+ | 20 | 14.4 de | 21.3 | 12.1 cd | 241.7 bcd | 5139.6 ab | 91.2 |
| 6 spray | CR+ | 21 | 14.8 ab | 21.1 | 12.5 ab | 249.2 ab | 5262.6 ab | 91.1 |
| Minerva not Proline | Non-CR+ | 22 | 14.6 bcde | 18.8 | 12.3 bcd | 245.7 bcd | 4601.0 bc | 91.3 |
| Mean | | | 14.4 | 21.6 | 12.1 | 242.5 | 5252.9 | 91.1 |
| CV% | | | 1.9 | 11.5 | 2.2 | 2.2 | 12.1 | 0.6 |
| Pr>F | | | <.0001 | 0.0522 | <.0001 | <.0001 | 0.0025 | 0.2533 |
| lsd (0.05) | | | 0.38 | ns | 0.37 | 7.6 | 900.5 | ns |

Table 4. Foliar ratings for the Bird Island Program Trial using the KWS (1-9) rating system with 1 being disease free and 9 being completely necrotic. Ratings with different letters are significantly different. Table 6 contains a full description of each entry.

| Fungicide Program | Variety | Trt | 31-Jul | 11-Aug | 20-Aug | 8-Sep |
|------------------------------------|---------|-----|----------|---------|------------|-----------|
| Check | CR+ | 1 | 3.8 a | 7.7 a | 8.9 a | 9.0 a |
| | Trad | 2 | 3.5 a | 7.1 a | 8.8 a | 9.0 b |
| Standard 6 spray Program | CR+ | 3 | 1.8 cde | 3.3 def | 4.5 bcdefg | 6.0 defg |
| | Trad | 4 | 1.9 bcde | 3.3 def | 4.3 defg | 5.1 ij |
| 6 spray Veltyma not Inspire XT | CR+ | 5 | 2.2 bcd | 3.9 bcd | 4.8 bcde | 6.0 defg |
| | Trad | 6 | 1.8 cde | 3.3 def | 4.1 efg | 5.2 ij |
| 6 spray No QoI or Topsin | CR+ | 7 | 1.9 bcde | 2.8 ef | 4.0 fg | 5.2 ij |
| | Trad | 8 | 1.6 e | 2.6 f | 3.8 g | 4.7 j |
| 6 spray Copper + Manzate | CR+ | 9 | 2.3 b | 3.8 bcd | 4.7 bcdef | 6.5 cd |
| | Trad | 10 | 2.3 bc | 3.9 bcd | 4.4 cdefg | 5.9 defgh |
| 4 spray extended intervals | CR+ | 11 | 1.7 de | 3.8 bcd | 4.8 bcde | 7.3 b |
| | Trad | 12 | 1.8 cde | 4.3 b | 5.2 b | 7.1 bc |
| 6 spray Provysol not Inspire XT | CR+ | 15 | 1.7 e | 3.8 bcd | 4.9 bcd | 6.1 def |
| | Trad | 16 | 1.8 cde | 3.3 cde | 4.4 cdefg | 5.3 ghij |
| 6 spray Lucento not Proline | CR+ | 19 | 1.8 cde | 3.9 bcd | 4.8 bcde | 6.3 de |
| | Trad | 20 | 2.0 bcde | 3.8 bcd | 4.8 bcde | 5.5 fghi |
| 6 spray Minerva not Proline | CR+ | 21 | 2.0 bcde | 4.3 b | 5.0 bc | 6.2 de |
| | Trad | 22 | 1.8 cde | 3.5 cde | 4.4 cdefg | 5.2 ij |
| Mean | | | 2.0 | 4.0 | 5.0 | 6.1 |
| CV% | | | 17.4 | 12.8 | 10.5 | 7.7 |
| Pr>F | | | <.0001 | <.0001 | <.0001 | <.0001 |
| lsd (0.05) | | | 0.50 | 0.71 | 0.74 | 0.67 |

Conclusions

The overall conditions for disease development were extremely high in 2025. Frequent rain events led to a delayed start in the fungicide programs and spray intervals that were not always in the targeted range of 10-12 days. The untreated checks at both locations reached a 9.0 rating in early September and programs with either a late start or reduced number of sprays had higher ratings than the six spray programs. These results were not surprising given the environment. It is worth noting that the Cuprofix Ultra tank mixed with Manzate Prostick for all six applications had similar ratings to the other more traditional programs at the Bird Island site. None of these programs provided acceptable control for the 2025 season as even the best treatments were at a 4.0 rating in early September and would have reached economic damage before the beginning of main harvest in October.

Table 5. Renville Program Trial treatment list. The application code indicates when the product was applied in the program.

| 2025 Renville CLS Program | | Rate/A | Appl. Code | | | Rate/A | Appl. Code |
|---------------------------|-------------------|-----------|------------|-----------|-------------------|------------|------------|
| 1 | CR+ Check | n/a | abcdef | 13 (CR+) | Manzate Prostick | 2 lbs | acdef |
| 2 | Traditional Check | n/a | abcdef | | Masterlock | 6.4 oz | abcdef |
| 3 (CR+) | Manzate Prostick | 2 lbs | acdef | | Proline | 5.7 fl oz | a |
| | Masterlock | 6.4 oz | abcdef | | Super Tin | 8 fl oz | bdf |
| | Proline | 5.7 fl oz | a | | Topsin | 10 fl oz | b |
| | Super Tin | 8 fl oz | bdf | | Headline | 9 fl oz | c |
| | Topsin | 10 fl oz | b | | Inspire XT | 7 fl oz | e |
| | Headline | 9 fl oz | c | | Sprout Stop | 2 lbs ai | e |
| | Inspire XT | 7 fl oz | e | 14 (Trad) | Manzate Prostick | 2 lbs | acdef |
| 4 (Trad) | Manzate Prostick | 2 lbs | acdef | | Masterlock | 6.4 oz | abcdef |
| | Masterlock | 6.4 oz | abcdef | | Proline | 5.7 fl oz | a |
| | Proline | 5.7 fl oz | a | | Super Tin | 8 fl oz | bdf |
| | Super Tin | 8 fl oz | bdf | | Topsin | 10 fl oz | b |
| | Topsin | 10 fl oz | b | | Headline | 9 fl oz | c |
| | Headline | 9 fl oz | c | | Inspire XT | 7 fl oz | e |
| | Inspire XT | 7 fl oz | e | | Sprout Stop | 2 lbs ai | e |
| 5 (CR+) | Manzate Prostick | 2 lbs | adf | 15 (CR+) | Manzate Prostick | 2 lbs | acdef |
| | Masterlock | 6.4 oz | abdf | | Masterlock | 6.4 oz | abcdef |
| | Proline | 5.7 fl oz | a | | Proline | 5.7 fl oz | a |
| | Super Tin | 8 fl oz | bf | | Super Tin | 8 fl oz | bdf |
| | Topsin | 10 fl oz | b | | Topsin | 10 fl oz | b |
| | Headline | 9 fl oz | d | | Headline | 9 fl oz | c |
| | | | | | Inspire XT | 7 fl oz | e |
| 6 (Trad) | Manzate Prostick | 2 lbs | adf | | Sprout Stop | 2 lbs ai | f |
| | Masterlock | 6.4 oz | abdf | 16 (Trad) | Manzate Prostick | 2 lbs | acdef |
| | Proline | 5.7 fl oz | a | | Masterlock | 6.4 oz | abcdef |
| | Super Tin | 8 fl oz | bf | | Proline | 5.7 fl oz | a |
| | Topsin | 10 fl oz | b | | Super Tin | 8 fl oz | bdf |
| | Headline | 9 fl oz | d | | Topsin | 10 fl oz | b |
| | | | | | Headline | 9 fl oz | c |
| | | | | | Inspire XT | 7 fl oz | e |
| 7 (CR+) | Manzate Prostick | 2 lbs | ae | | Sprout Stop | 2 lbs ai | f |
| | Masterlock | 6.4 oz | ace | 17 (CR+) | Manzate Prostick | 2 lbs | acdef |
| | Proline | 5.7 fl oz | a | | Franchise Copilot | 0.25 % v/v | abcdef |
| | Super Tin | 8 fl oz | c | | Proline | 5.7 fl oz | a |
| | Topsin | 10 fl oz | c | | Super Tin | 8 fl oz | bdf |
| | Headline | 9 fl oz | e | | Topsin | 10 fl oz | b |
| | | | | | Headline | 9 fl oz | c |
| | | | | | Inspire XT | 7 fl oz | e |
| 8 (Trad) | Manzate Prostick | 2 lbs | ae | 18 (Trad) | Manzate Prostick | 2 lbs | acdef |
| | Masterlock | 6.4 oz | ace | | Franchise Copilot | 0.25 % v/v | abcdef |
| | Proline | 5.7 fl oz | a | | Proline | 5.7 fl oz | a |
| | Super Tin | 8 fl oz | c | | Super Tin | 8 fl oz | bdf |
| | Topsin | 10 fl oz | c | | Topsin | 10 fl oz | b |
| | Headline | 9 fl oz | e | | Headline | 9 fl oz | c |
| | | | | | Inspire XT | 7 fl oz | e |
| 9 (CR+) | Manzate Prostick | 2 lbs | bdef | 19 (CR+) | Manzate Prostick | 2 lbs | acdef |
| | Masterlock | 6.4 oz | bcdef | | Proline | 5.7 fl oz | a |
| | Proline | 5.7 fl oz | b | | Super Tin | 8 fl oz | bdf |
| | Super Tin | 8 fl oz | ce | | Topsin | 10 fl oz | b |
| | Topsin | 10 fl oz | c | | Headline | 9 fl oz | c |
| | Headline | 9 fl oz | d | | Inspire XT | 7 fl oz | e |
| | Inspire XT | 7 fl oz | f | 20 (Trad) | Manzate Prostick | 2 lbs | acdef |
| 10 (Trad) | Manzate Prostick | 2 lbs | bdef | | Proline | 5.7 fl oz | a |
| | Masterlock | 6.4 oz | bcdef | | Super Tin | 8 fl oz | bdf |
| | Proline | 5.7 fl oz | b | | Topsin | 10 fl oz | b |
| | Super Tin | 8 fl oz | ce | | Headline | 9 fl oz | c |
| | Topsin | 10 fl oz | c | | Inspire XT | 7 fl oz | e |
| | Headline | 9 fl oz | d | | | | |
| | Inspire XT | 7 fl oz | f | | | | |
| 11 (CR+) | Manzate Prostick | 2 lbs | bf | | Manzate Prostick | 2 lbs | acdef |
| | Masterlock | 6.4 oz | bdf | | Proline | 5.7 fl oz | a |
| | Proline | 5.7 fl oz | b | | Super Tin | 8 fl oz | bdf |
| | Super Tin | 8 fl oz | d | | Topsin | 10 fl oz | b |
| | Topsin | 10 fl oz | d | | Headline | 9 fl oz | c |
| | Headline | 9 fl oz | f | | Inspire XT | 7 fl oz | e |
| | | | | | | | |
| 12 (Trad) | Manzate Prostick | 2 lbs | bf | | | | |
| | Masterlock | 6.4 oz | bdf | | | | |
| | Proline | 5.7 fl oz | b | | | | |
| | Super Tin | 8 fl oz | d | | | | |
| | Topsin | 10 fl oz | d | | | | |
| | Headline | 9 fl oz | f | | | | |
| | | | | | | | |

Table 6. Bird Island Program Trial treatment list. The application code indicates when the product was applied in the program. All treatments contained 6.4oz of Masterlock with every application.

| 2025 BI CLS Program | | Rate/A | Appl. Code | | Rate/A | Appl. Code |
|---------------------|-------------------|-----------|------------|-----------|------------------|-------------|
| 1 | CR+ Check | n/a | abcdef | 12 (Trad) | Manzate Prostick | 2 lbs adf |
| 2 | Traditional Check | n/a | abcdef | | Proline | 5.7 fl oz a |
| 3 (CR+) | Manzate Prostick | 2 lbs | acdef | | Super Tin | 8 fl oz bf |
| | Proline | 5.7 fl oz | a | | Topsin | 10 fl oz b |
| | Super Tin | 8 fl oz | bdf | | Inspire XT | 7 fl oz d |
| | Topsin | 10 fl oz | b | 15 (CR+) | Manzate Prostick | 2 lbs acdef |
| | Headline | 9 fl oz | c | | Proline | 5.7 fl oz a |
| | Inspire XT | 7 fl oz | e | | Super Tin | 8 fl oz bdf |
| 4 (Trad) | Manzate Prostick | 2 lbs | acdef | | Topsin | 10 fl oz b |
| | Proline | 5.7 fl oz | a | | Headline | 9 fl oz c |
| | Super Tin | 8 fl oz | bdf | | Provysol | 5 fl oz e |
| | Topsin | 10 fl oz | b | 16 (Trad) | Manzate Prostick | 2 lbs acdef |
| | Headline | 9 fl oz | c | | Proline | 5.7 fl oz a |
| | Inspire XT | 7 fl oz | e | | Super Tin | 8 fl oz bdf |
| 5 (CR+) | Manzate Prostick | 2 lbs | acdef | | Topsin | 10 fl oz b |
| | Proline | 5.7 fl oz | a | | Headline | 9 fl oz c |
| | Super Tin | 8 fl oz | bdf | | Provysol | 5 fl oz e |
| | Topsin | 10 fl oz | b | 19 (CR+) | Manzate Prostick | 2 lbs acdef |
| | Headline | 9 fl oz | c | | Lucento | 5.5 fl oz a |
| | Veltyma | 10 fl oz | e | | Super Tin | 8 fl oz bdf |
| 6 (Trad) | Manzate Prostick | 2 lbs | acdef | | Topsin | 10 fl oz b |
| | Proline | 5.7 fl oz | a | | Headline | 9 fl oz c |
| | Super Tin | 8 fl oz | bdf | | Inspire XT | 7 fl oz e |
| | Topsin | 10 fl oz | b | 20 (Trad) | Manzate Prostick | 2 lbs acdef |
| | Headline | 9 fl oz | c | | Lucento | 5.5 fl oz a |
| | Veltyma | 10 fl oz | e | | Super Tin | 8 fl oz bdf |
| 7 (CR+) | Manzate Prostick | 2 lbs | abcdef | | Topsin | 10 fl oz b |
| | Proline | 5.7 fl oz | a | | Headline | 9 fl oz c |
| | Super Tin | 8 fl oz | bdf | | Inspire XT | 7 fl oz e |
| | Inspire XT | 7 fl oz | c | 21 (CR+) | Manzate Prostick | 2 lbs acdef |
| | Lucento | 5.5 fl oz | e | | Minerva | 13 fl oz a |
| 8 (Trad) | Manzate Prostick | 2 lbs | abcdef | | Super Tin | 8 fl oz bdf |
| | Proline | 5.7 fl oz | a | | Topsin | 10 fl oz b |
| | Super Tin | 8 fl oz | bdf | | Headline | 9 fl oz c |
| | Inspire XT | 7 fl oz | c | | Inspire XT | 7 fl oz e |
| | Lucento | 5.5 fl oz | e | 22 (Trad) | Manzate Prostick | 2 lbs acdef |
| 9 (CR+) | Manzate Prostick | 2 lbs | abcdef | | Minerva | 13 fl oz a |
| | Cuprofix Ultra | 2 lbs | abcdef | | Super Tin | 8 fl oz bdf |
| 10 (Trad) | Manzate Prostick | 2 lbs | abcdef | | Topsin | 10 fl oz b |
| | Cuprofix Ultra | 2 lbs | abcdef | | Headline | 9 fl oz c |
| 11 (CR+) | Manzate Prostick | 2 lbs | adf | | Inspire XT | 7 fl oz e |
| | Proline | 5.7 fl oz | a | | | |
| | Super Tin | 8 fl oz | bf | | | |
| | Topsin | 10 fl oz | b | | | |
| | Inspire XT | 7 fl oz | d | | | |
| | | | | | | |