



# Tool Name

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Tool Version:  
Last Updated:

## Description:

*This report provides independent and unbiased information for the evaluation of commercial corn grain and silage hybrids available in Pennsylvania. The corn hybrid evaluation program provides farmers, seed corn companies and university personnel with information on the relative performance of corn hybrids grown under Pennsylvania conditions. It should be used to supplement other sources of information, such as seed industry performance tests, other independent testing data, and on-farm performance records, when making hybrid selection decisions.*

## User Instructions:

*The "Background" tab provides information specific to each trial location. This information is useful to evaluate selected hybrids on your farm under your growing conditions and practices. The "Table" tab contains all the data needed to make a final determination of the proper hybrids for your operation. The first factor to consider when using this report is hybrid maturity. Moisture or dry matter is a good indicator of hybrid maturity. Hybrids with lower moisture or high dry matter are generally adapted to shorter season environments. Identify hybrids in the list that you know are adapted to your area. Then, select hybrids based on the qualities you are looking for on your operation. For grain, high yielding hybrids should be selected based on moisture and maturity. Silage has many quality factors that will vary from farm to farm. Dry matter is a good place to start when selecting a silage hybrid, but working with a nutritionist will help determine what forage qualities will be best for your operation. We do not recommend using data from a single site, even if it is close to your farm, to make hybrid selection choices. It is best to use data averaged over multiple locations. The last tab "Trait Key" contains all the commercial designation of individual traits. The "Table" tab will provide the company specific nomenclature, but the "Trait Key" will give a more in depth explanation of these traits.*

## References:

*This report is prepared by: Alex Hristov (PSU Animal Sciences), Chris Canale (Cargill), Dayton Spackman (PSU Plant Science), and James Breining (PSU Plant Science).*

## Acknowledgement of Risk:

*This tool is provided for general informational purposes only and The Pennsylvania State University shall have no liability whatsoever for the use of or reliance on this tool.*

# 2020 *Penn State/PDMP Corn Silage Hybrid Performance Trial Results*

Prepared by Alex Hristov (PSU Animal Sciences), Chris Canale (Cargill), Dayton Spackman (PSU Plant Science), and James Breining (PSU Plant Science).

Produced in cooperation with the Professional Dairy Managers of Pennsylvania (PDMP).

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## Production Details: Penn State/PDMP Corn Silage Hybrid Evaluation Trials

|                           |   |
|---------------------------|---|
| <b>Site:</b>              | Bainbridge, PA  |
| <b>Cooperator</b>         | Meadow-Vista Dairy  |
| <b>Planting Date</b>      | May 12, 2020  |
| <b>Soil Type</b>          | Lansdale Loam   |
| <b>Herbicides</b>         | <b>pre-</b> Credit Extra 2.25qts, Mesotrione 6oz, Brawl ATZ 1.8qt   |
|                           | <b>post-</b> none   |
| <b>Previous Crop</b>      | Corn silage/rye forage  |
| <b>Tillage</b>            | none  |
| <b>Starter Fertilizer</b> | 15 gal/A UAN  |
| <b>Insecticide</b>        | Defcon 4.67G  |
| <b>Manure</b>             | 9000 gallon dairy   |
| <b>Fertilizer</b>         | sidedress 110 lbs N liquid nitrogen-injected  |
| <b>Harvest Date</b>       | August 27, 2020   |
| <b>Field Summary:</b>     | This field was planted on May 12. There was some grass pressure at the rear of plot and a post herbicide application was applied. Overall, this site had extremely fast emergence and corn looked good. Very tall plants and nice ears. Rainfall was less than normal during grain fill and the ears were smaller than normal. Performance was still very good. |

### Weather Summary:

| Month                    | Precip.      | GDD         |
|--------------------------|--------------|-------------|
| May 12th-June 1st        | 1.5          | 282         |
| June 1st-July 1st        | 6.4          | 638         |
| July 1st- August 1st     | 2.1          | 844         |
| August 1st - August 27th | 5.39         | 642         |
| <b>Seasonal Total</b>    | <b>15.39</b> | <b>2406</b> |

Precip. Data:

<https://climate.com>

GDD data:

<http://climatesmartfarming.org/tools/csf-growing-degree-day-calculator/>

**Penn State/PDMP Corn Silage Hybrid Testing Program 2020**  
**Medium-Late maturity (107-118) day RM silage hybrids in Bainbridge, PA**



Notes: SEE BACKGROUND TAB

Cooperator: Meadow Vista Dairy

| Brand  | Hybrid               | Traits <sup>1</sup> | Relative Maturity | Pop. Plants/ac | Dry Matter % <sup>2</sup> | NIRS <sup>3</sup> |                  |             |            |             |            |             | Wet Chemistry        |                           | Yield tons/ac <sup>8</sup> | OM Yield tons/ac <sup>9</sup> | OMD % <sup>10</sup> | DOM Yield tons/ac <sup>11</sup> |                           |
|--|----------------------|---------------------|-------------------|----------------|---------------------------|-------------------|------------------|-------------|------------|-------------|------------|-------------|----------------------|---------------------------|----------------------------|-------------------------------|---------------------|---------------------------------|---------------------------|
|  |                      |                     |                   |                |                           | Crude Protein     |                  | Lignin %DM  | uNDF       |             | Ash %DM    | Starch %DM  | TFA %DM <sup>5</sup> | NDFD 30 %NDF <sup>6</sup> |                            |                               |                     |                                 | IVSD %Starch <sup>7</sup> |
|  |                      |                     |                   |                |                           | %DM               | %DM <sup>4</sup> |             | %DM        | %DM         |            |             |                      |                           |                            |                               |                     |                                 |                           |
| <b>Medium-Late (107-114 day) RM Silage Hybrids</b> |                      |                     |                   |                |                           |                   |                  |             |            |             |            |             |                      |                           |                            |                               |                     |                                 |                           |
| Seed Consultants                                   | SCS 1071AM           | 21                  | 107               | 32,167         | 30.9                      | 8.9               | 33.9             | 3.0         | 12.0       | 3.8         | 37.3       | 2.5         | 55.0                 | 55.1                      | 17.6                       | 5.3                           | 51.2                | 2.7                             |                           |
| Agrigold   | A641-06STXRIB        | 34                  | 111               | 33,500         | 32.8                      | 8.8               | 33.5             | 2.9         | 11.8       | 3.6         | 39.1       | 2.7         | 51.8                 | 51.6                      | 21.3                       | 6.8                           | 48.7                | 3.3                             |                           |
| Brevant Seeds                                      | B14F89Q              | 36                  | 114               | 34,000         | 32.8                      | 8.5               | 35.2             | 3.1         | 12.9       | 3.4         | 36.8       | 2.2         | 53.7                 | 58.7                      | 21.8                       | 7.1                           | 51.8                | 3.7                             |                           |
| Channel  | Channel 213-93STXRIB | 34                  | 113               | 33,333         | 32.9                      | 8.4               | 35.3             | 3.0         | 12.8       | 3.3         | 36.3       | 2.5         | 52.7                 | 54.4                      | 20.4                       | 6.7                           | 49.8                | 3.4                             |                           |
| Blue River Organic                                 | 68C37                | conv.               | 113               | 28,277         | 33.2                      | 8.6               | 38.5             | 3.4         | 15.6       | 3.6         | 29.2       | 2.1         | 51.3                 | 58.7                      | 15.9                       | 5.1                           | 50.0                | 2.5                             |                           |
| Dekalb   | DKC64-44RIB          | 34                  | 114               | 34,000         | 33.2                      | 8.6               | 34.4             | 2.8         | 11.9       | 3.1         | 38.2       | 2.6         | 54.4                 | 58.5                      | 20.0                       | 6.6                           | 52.5                | 3.5                             |                           |
| Kings Agriseeds                                    | RT 63T13             | 3                   | 113               | 33,167         | 33.5                      | 9.3               | 36.1             | 3.0         | 13.3       | 3.5         | 32.7       | 2.3         | 53.9                 | 54.9                      | 20.5                       | 6.8                           | 50.4                | 3.4                             |                           |
| Seed Consultants                                   | SCS 1141AM           | 21                  | 114               | 32,167         | 33.5                      | 8.2               | 34.2             | 2.8         | 11.2       | 3.3         | 38.3       | 2.4         | 55.2                 | 57.9                      | 20.5                       | 6.9                           | 52.3                | 3.6                             |                           |
| Seed Consultants                                   | SCS 1121AM           | 21                  | 112               | 34,000         | 33.5                      | 8.9               | 33.0             | 2.9         | 12.5       | 3.4         | 34.6       | 2.1         | 53.6                 | 56.4                      | 20.3                       | 6.8                           | 50.1                | 3.5                             |                           |
| Pioneer  | P1380Q               | 36                  | 113               | 34,000         | 33.9                      | 8.5               | 36.4             | 3.2         | 13.6       | 3.4         | 34.1       | 2.2         | 51.3                 | 58.9                      | 22.4                       | 7.4                           | 50.4                | 3.8                             |                           |
| Brevant Seeds                                      | B13H87Q              | 36                  | 113               | 33,333         | 34.6                      | 9.0               | 32.9             | 3.0         | 11.9       | 3.7         | 39.4       | 2.5         | 52.4                 | 55.4                      | 21.3                       | 7.2                           | 50.3                | 3.6                             |                           |
| Dekalb   | DKC62-53RIB          | 31                  | 112               | 34,000         | 35.1                      | 8.2               | 32.8             | 3.0         | 11.9       | 3.3         | 41.6       | 2.8         | 51.6                 | 55.9                      | 20.8                       | 7.1                           | 50.6                | 3.6                             |                           |
| Seed Consultants                                   | SCS 1111Q            | 36                  | 111               | 34,000         | 35.4                      | 8.4               | 35.0             | 2.9         | 12.2       | 3.3         | 36.1       | 2.4         | 54.8                 | 56.8                      | 22.4                       | 7.7                           | 51.3                | 3.9                             |                           |
| Blue River Organic                                 | 66G25                | conv.               | 112               | 30,152         | 35.6                      | 9.3               | 34.2             | 2.7         | 11.8       | 3.4         | 35.5       | 2.3         | 51.5                 | 57.7                      | 16.1                       | 5.6                           | 50.7                | 2.4                             |                           |
| Syngenta   | NK1239-5122          | 10                  | 112               | 32,833         | 36.1                      | 9.1               | 37.6             | 3.1         | 13.6       | 3.7         | 31.9       | 1.9         | 54.9                 | 52.4                      | 18.8                       | 6.6                           | 50.3                | 3.4                             |                           |
| Blue River Organic                                 | 64K93                | conv.               | 111               | 30,731         | 36.2                      | 8.4               | 36.0             | 3.0         | 13.1       | 3.2         | 35.1       | 2.2         | 54.3                 | 54.5                      | 18.8                       | 6.7                           | 50.4                | 3.4                             |                           |
| Local Seeds  | LC1488 VT2PRIB       | 31                  | 114               | 33,500         | 36.7                      | 8.4               | 34.1             | 2.9         | 12.0       | 3.2         | 38.4       | 2.6         | 52.3                 | 55.4                      | 21.6                       | 7.7                           | 50.2                | 3.8                             |                           |
| Nutrien Ag Solutions                               | D53VC33              | 31                  | 113               | 34,000         | 37.3                      | 8.2               | 33.5             | 3.0         | 12.2       | 3.0         | 40.8       | 2.5         | 50.8                 | 60.0                      | 21.9                       | 7.9                           | 51.9                | 4.1                             |                           |
| LG Seeds   | LG62C35VT2RIB        | 31                  | 112               | 33,333         | 37.7                      | 8.4               | 32.9             | 3.0         | 11.9       | 3.7         | 43.1       | 2.9         | 52.7                 | 52.0                      | 19.6                       | 7.2                           | 50.0                | 3.6                             |                           |
| Dekalb   | DKC63-57RIB          | 31                  | 113               | 34,000         | 38.0                      | 8.4               | 31.6             | 3.0         | 12.4       | 3.3         | 43.2       | 2.9         | 51.4                 | 59.4                      | 23.4                       | 8.6                           | 52.2                | 4.5                             |                           |
| Chemgro  | 7305RDP              | 31                  | 113               | 30,833         | 38.1                      | 8.2               | 32.8             | 2.8         | 11.8       | 3.0         | 41.2       | 2.8         | 50.4                 | 59.8                      | 23.7                       | 8.8                           | 51.6                | 4.5                             |                           |
|  |                      |                     |                   |                | <b>107-114 day means</b>  | <b>34.8</b>       | <b>8.6</b>       | <b>34.5</b> | <b>3.0</b> | <b>12.5</b> | <b>3.4</b> | <b>37.3</b> | <b>2.4</b>           | <b>52.9</b>               | <b>56.4</b>                | <b>20.4</b>                   | <b>7.0</b>          | <b>50.8</b>                     | <b>3.5</b>                |
| <b>Late (115-120 day) RM Silage Hybrids</b>        |                      |                     |                   |                |                           |                   |                  |             |            |             |            |             |                      |                           |                            |                               |                     |                                 |                           |
| Growmark FS  | FS 6797X RIB         | 34                  | 117               | 34,000         | 29.9                      | 8.7               | 37.2             | 3.3         | 14.0       | 3.6         | 35.6       | 2.4         | 49.0                 | 59.9                      | 17.8                       | 5.1                           | 50.8                | 2.6                             |                           |
| Brevant Seeds                                      | B15H98Q              | 36                  | 115               | 32,500         | 30.7                      | 9.1               | 33.3             | 2.9         | 11.7       | 3.6         | 37.8       | 2.5         | 53.7                 | 55.8                      | 20.1                       | 6.0                           | 50.7                | 3.0                             |                           |
| Agrigold   | A6652STXRIB          | 34                  | 115               | 34,000         | 30.8                      | 8.2               | 36.4             | 3.1         | 13.3       | 3.2         | 36.0       | 2.3         | 51.4                 | 57.0                      | 19.7                       | 6.1                           | 50.2                | 3.1                             |                           |
| Growmark FS  | FS 6595X RIB         | 34                  | 115               | 32,167         | 31.8                      | 8.7               | 37.2             | 3.3         | 13.6       | 3.5         | 34.9       | 2.3         | 53.1                 | 60.2                      | 21.2                       | 6.7                           | 52.4                | 3.5                             |                           |
| Agrigold   | A647-35-330          | 9                   | 117               | 32,667         | 32.2                      | 8.8               | 36.0             | 3.0         | 13.4       | 3.5         | 33.0       | 2.2         | 53.8                 | 58.8                      | 19.2                       | 6.0                           | 51.2                | 3.1                             |                           |
| Masters Choice                                     | MCT6552              | 4                   | 115               | 33,333         | 32.7                      | 8.8               | 33.8             | 3.0         | 12.6       | 3.6         | 37.4       | 2.5         | 50.7                 | 60.0                      | 20.3                       | 6.4                           | 51.1                | 3.3                             |                           |
| Pioneer  | P1847AMXT            | 27                  | 118               | 34,000         | 33.2                      | 8.4               | 37.8             | 3.0         | 12.9       | 3.3         | 31.5       | 2.1         | 54.7                 | 54.3                      | 20.6                       | 6.8                           | 50.4                | 3.5                             |                           |
| Brevant Seeds                                      | B15B75SX             | 34                  | 115               | 34,000         | 33.4                      | 8.5               | 40.4             | 2.5         | 9.4        | 3.3         | 31.8       | 2.3         | 61.7                 | 57.4                      | 19.5                       | 7.3                           | 56.0                | 4.1                             |                           |
| Local Seeds  | LC1688 SXRIB         | 34                  | 116               | 34,000         | 33.9                      | 8.4               | 35.3             | 3.1         | 13.3       | 3.3         | 36.0       | 2.6         | 51.1                 | 53.5                      | 22.1                       | 7.3                           | 48.9                | 3.5                             |                           |
| Local Seeds  | LCX17-21 VT2PRIB     | 31                  | 117               | 32,000         | 34.7                      | 8.6               | 38.8             | 3.4         | 14.8       | 3.5         | 33.5       | 2.4         | 52.4                 | 51.8                      | 19.8                       | 6.7                           | 49.3                | 3.3                             |                           |
| Growmark FS  | FS 65R87SS           | 34                  | 115               | 31,000         | 35.0                      | 8.8               | 33.0             | 3.1         | 12.9       | 3.3         | 40.9       | 2.8         | 52.4                 | 56.1                      | 20.4                       | 6.9                           | 51.2                | 3.5                             |                           |
| Nutrien Ag Solutions                               | D55VC80              | 31                  | 115               | 33,500         | 36.4                      | 9.1               | 36.4             | 3.1         | 13.0       | 3.2         | 33.0       | 2.2         | 53.2                 | 57.9                      | 20.3                       | 7.2                           | 51.2                | 3.7                             |                           |
| LG Seeds   | LG66C32VT2RIB        | 31                  | 116               | 33,000         | 36.5                      | 8.3               | 34.6             | 3.4         | 14.1       | 3.5         | 39.1       | 2.7         | 50.2                 | 54.6                      | 21.4                       | 7.6                           | 49.4                | 3.8                             |                           |
| Chemgro  | 7658G3               | 3                   | 116               | 32,027         | 37.1                      | 8.5               | 36.2             | 2.7         | 11.5       | 3.1         | 37.2       | 2.4         | 55.9                 | 60.2                      | 20.8                       | 7.6                           | 54.1                | 4.1                             |                           |
| Local Seeds  | LCX17-22 VT2P        | 31                  | 117               | 34,000         | 38.0                      | 8.9               | 33.5             | 3.1         | 13.2       | 3.0         | 41.5       | 2.8         | 49.4                 | 59.4                      | 23.9                       | 8.8                           | 51.9                | 4.6                             |                           |

**Penn State/PDMP Corn Silage Hybrid Testing Program 2020**  
**Medium-Late maturity (107-118) day RM silage hybrids in Bainbridge, PA**



Notes: SEE BACKGROUND TAB

Cooperator: Meadow Vista Dairy

| Brand       | Hybrid        | Traits <sup>1</sup> | Relative Maturity | Pop. Plants/ac | Dry Matter % <sup>2</sup> | NIRS <sup>3</sup>       |            |             |            |             |             |             | Wet Chemistry        |                           | Yield tons/ac <sup>8</sup> | OM Yield tons/ac <sup>9</sup> | OMD % <sup>10</sup> | DOM Yield tons/ac <sup>11</sup> |                           |
|-------------|---------------|---------------------|-------------------|----------------|---------------------------|-------------------------|------------|-------------|------------|-------------|-------------|-------------|----------------------|---------------------------|----------------------------|-------------------------------|---------------------|---------------------------------|---------------------------|
|             |               |                     |                   |                |                           | Crude Protein %DM       |            |             | uNDF       |             |             |             | TFA %DM <sup>5</sup> | NDFD 30 %NDF <sup>6</sup> |                            |                               |                     |                                 | IVSD %Starch <sup>7</sup> |
|             |               |                     |                   |                |                           | aNDFom %DM <sup>4</sup> | Lignin %DM | 240 %DM     | Ash %DM    | Starch %DM  |             |             |                      |                           |                            |                               |                     |                                 |                           |
| Local Seeds | LCX15-20 VT2P | 31                  | 115               | 34,000         | 38.6                      | 8.3                     | 36.2       | 3.5         | 14.3       | 3.5         | 38.1        | 2.9         | 48.5                 | 55.3                      | 20.7                       | 7.7                           | 49.1                | 3.8                             |                           |
|             |               |                     |                   |                | <b>115-120 day means</b>  | <b>34.1</b>             | <b>8.6</b> | <b>36.0</b> | <b>3.1</b> | <b>13.0</b> | <b>3.4</b>  | <b>36.1</b> | <b>2.5</b>           | <b>52.6</b>               | <b>57.0</b>                | <b>20.5</b>                   | <b>6.9</b>          | <b>51.1</b>                     | <b>3.5</b>                |
|             |               |                     |                   |                | <b>Overall Mean</b>       | <b>34.5</b>             | <b>8.6</b> | <b>35.1</b> | <b>3.0</b> | <b>12.7</b> | <b>3.4</b>  | <b>36.8</b> | <b>2.5</b>           | <b>52.7</b>               | <b>56.7</b>                | <b>20.5</b>                   | <b>6.9</b>          | <b>50.9</b>                     | <b>3.5</b>                |
|             |               |                     |                   |                | <b>LSD(0.1)</b>           | <b>NS</b>               | <b>0.4</b> | <b>3.4</b>  | <b>0.3</b> | <b>1.7</b>  | <b>NS</b>   | <b>5.6</b>  | <b>0.5</b>           | <b>2.9</b>                | <b>3.7</b>                 | <b>NS</b>                     | <b>NS</b>           | <b>1.8</b>                      | <b>NS</b>                 |
|             |               |                     |                   |                | <b>CV%</b>                | <b>11.8</b>             | <b>3.7</b> | <b>7.1</b>  | <b>6.7</b> | <b>9.7</b>  | <b>10.6</b> | <b>11.1</b> | <b>13.5</b>          | <b>4.0</b>                | <b>4.8</b>                 | <b>14.2</b>                   | <b>23.7</b>         | <b>2.6</b>                      | <b>24.3</b>               |

<sup>1</sup> **Traits:** See tab " Trait Key" for individual trait designation.

<sup>2</sup> **Dry Matter:** Tables are sorted by dry matter. Avoid making comparisons with hybrids that differ significantly in dry matter.

<sup>3</sup> **NIRS:** Near Infrared Spectroscopy

<sup>4</sup> **aNDFom:** aNDF on an ash-free basis.

<sup>5</sup> **TFA:** Total Fatty Acids.

<sup>6</sup> **IVSD:** Starch digestibility (% of starch) is analyzed by an in vitro wet chemistry method on samples ground through a 1-mm screen and incubated for 4 hours (IVSD).

<sup>7</sup> **NDFD30:** is analyzed by an in vitro wet chemistry method on samples ground through a 1-mm screen and incubated for 30 hours

<sup>8</sup> **Yield:** Silage yields are expressed on a 35 percent DM basis; all other parameters are expressed on a dry matter basis.

<sup>9</sup> **OM Yield:** silage yield (tons/ac) expressed on an organic matter (OM) basis.

<sup>10</sup> **OMD: Organic Matter Digestibility** - Please see "OMD Story" tab for information on how to use this column

<sup>11</sup> **DOM Yield:** Yield of digestible organic matter.

NS = Not Significant

Prepared by Alex Hristov (PSU Animal Sciences), Chris Canale (Cargill), Dayton Spackman (PSU Plant Science), and James Breining (PSU Plant Science).

| Table Key #              | Trait Family Product   | Bt protein(s)                                      | Marketed for control of:                          | Resistance to a Bt protein in the trait package has developed in : | Herbicide tolerant?   |
|--------------------------|--|--|---|--|---|
| Conv.                    | Conventional   | None   | None  | ---  | No  |
| RR2                      | Roundup Ready 2  | None   | None  | ---  | GT  |
| <b>Agrisure</b>          |  |  |   |  |   |
| 1                        | Agrisure GT  | None   | None  | ---  | GT  |
| 2                        | Agrisure 3010 & 3010A  | Cry1Ab   | ECB SWCB  | ---  | GT LL   |
| 3                        | Agrisure 3000 GT, 3011A  | Cry1Ab, mCry3A                                     | ECB SWCB RW                                       | RW   | GT LL   |
| 4                        | Agrisure Viptera 3110  | Cry1Ab, Vip3A                                      | BCW CEW ECB FAW SB SWCB<br>TAW WBC                | ---  | GT LL   |
| 5                        | Agrisure Viptera 3111  | Cry1Ab, mCry3A, Vip3A                              | BCW CEW ECB FAW SB SWCB<br>TAW WBC RW             | RW   | GT LL   |
| 6                        | Agrisure 3120 E-Z Refuge   | Cry1Ab, Cry1F                                      | BCW ECB FAW SB SWCB                               | FAW WBC  | REFER TO BAG<br>FOR SPECIFIC<br>LETTER CODE:<br>EZ0=GT ONLY<br>EZ1= GT LL |
| 7                        | Agrisure 3122 E-Z Refuge   | Cry1Ab,Cry1F, mCry3A, Cry34/35Ab1                  | BCW ECB FAW SB SWCB RW                            | FAW WBC RW   |   |
| 8                        | Agrisure Viptera 3220 E-Z Refuge                                 | Cry1Ab, Cry1F, Vip3A                               | BCW CEW ECB FAW SB SWCB<br>TAW WBC                | ---  |   |
| 9                        | Agrisure Viptera 3330 E-Z Refuge                                 | CryAb, Vip3A, Cry1A.105+CryAb2                     | BCW CEW ECB FAW SB SWCB<br>TAW WBC                | ---  |   |
| 10                       | Agrisure Duracade 5122 E-Z Refuge                                | Cry1Ab, Cry1F, mCry3A, eCry3.1Ab                   | BCW ECB FAW SB SWCB RW                            | FAW WBC RW   |   |
| 11                       | Agrisure Duracade 5222 E-Z Refuge                                | Cry1Ab, Cry1F, Vip3A, mCry3A, eCry3.1Ab            | BCW CEW ECB FAW SB SWCB<br>TAW WBC RW             | RW   |   |
| <b>Herculex</b>          |  |  |   |  |   |
| 12                       | Herculex 1 (HX1)   | Cry1F  | BCW ECB FAW SB SWCB                               | ECB FAW SWCB WBC   | LL<br>RR2 (most)  |
| 13                       | Herculex RW (HXRW)   | Cry34/35Ab1  | RW  | RW   |   |
| 14                       | Herculex XTRA (HXX)  | Cry1F, Cry34/35Ab1                                 | BCW ECB FAW SB SWCB RW                            | FAW SWCB WBC RW  |   |
| <b>Optimum</b>           |  |  |   |  |   |
| 15                       | TRIssect (CHR)   | Cry1F, mCry3A                                      | BCW ECB FAW SB SWCB RW                            | ECB FAW SWCB WBC RW  | LL RR2  |
| 16                       | Intrasect (YHR)  | Cry1F, Cry1Ab                                      | BCW ECB FAW SB SWCB                               | FAW WBC  | LL RR2  |
| 17                       | Intrasect TRIssect (CYHR)  | Cry1Ab, Cry1F, mCry3A                              | BCW ECB FAW SB SWCB RW                            | FAW WBC RW   | LL RR2  |
| 18                       | Leptra (VYHR)  | Cry1F, Cry1Ab, Vip3A                               | BCW CEW ECB FAW SB SWCB<br>TAW WBC                | ---  | LL RR2  |
| 19                       | Intrasect Xtra (YXR)   | Cry1F, Cry1Ab, Cry34/35Ab1                         | BCW ECB FAW SB SWCB RW                            | FAW WBC RW   | LL RR2  |
| 20                       | Intrasect Xtreme (CYXR)  | Cry1F, Cry1Ab, mCry3A, Cry34/35Ab1                 | BCW ECB FAW SB SWCB RW                            | FAW WBC RW   | LL RR2  |
| 21                       | AcreMax (AM)   | Cry1F, Cry1Ab                                      | BCW ECB FAW SB SWCB                               | FAW WBC  | LL RR2  |
| 22                       | AcreMax CRW (AMRW)   | Cry34/35Ab1  | RW  | RW   | LL RR2  |
| 23                       | AcreMax1 (AM1)   | Cry1F, Cry34/35Ab1                                 | BCW ECB FAW SB SWCB RW                            | FAW SWCB WBC RW  | LL RR2  |
| 24                       | AcreMax Leptra (AML)   | Cry1Ab, Cry1F, Vip3A                               | BCW ECB FAW SB SWCB TAW<br>WBC CEW                | ---  | LL RR2  |
| 25                       | AcreMax TRIssect (AMT)   | Cry1F, Cry1Ab, mCry3A                              | BCW ECB FAW SB SWCB RW                            | FAW WBC RW   | LL RR2  |
| 26                       | AcreMax Xtra (AMX)   | Cry1F, Cry1Ab, Cry34/35Ab1                         | BCW ECB FAW SB SWCB RW                            | FAW WBC RW   | LL RR2  |
| 27                       | AcreMax Xtreme (AMXT)  | Cry1F, Cry1Ab, mCry3A, Cry34/35Ab1                 | BCW ECB FAW SB SWCB RW                            | FAW WBC RW   | LL RR2  |
| <b>Yieldgard/Genuity</b> |  |  |   |  |   |
| 28                       | YieldGard CB (YGCB)  | Cry1Ab   | ECB SWCB  | ---  | RR2   |
| 29                       | YieldGard VT Rootworm (YGRW)                                     | Cry3Bb1  | RW  | RW   | RR2   |
| 30                       | YieldGard VT Triple  | Cry1Ab, Cry3Bb1                                    | ECB SWCB RW                                       | RW   | RR2   |
| 31                       | VT Double PRO<br>VT Double PRO RIB complete                      | Cry1A.105, Cry2Ab2                                 | CEW ECB FAW SB SWCB                               | CEW  | RR2   |
| 32                       | VT Triple PRO<br>VT Triple PRO RIB complete                      | Cry1A.105, Cry2Ab2, Cry3Bb1                        | CEW ECB FAW SB SWCB RW                            | CEW RW   | RR2   |
| 33                       | Trecepta (or RIB complete)                                       | Cry1A.105, Cry2Ab2, Vip3A                          | BCW CEW ECB FAW SB SWCB<br>TAW WBC                | ---  | RR2   |
| <b>Others</b>            |  |  |   |  |   |
| 34                       | Smartstax<br>Smartstax Refuge Advanced<br>Smartstax RIB Complete | Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1,<br>Cry34/35Ab1 | BCW CEW ECB FAW SB SWCB<br>RW                     | CEW WBC RW   | LL RR2  |
| 35                       | Powercore (or Refuge Advanced)                                   | Cry1A.105, Cry2Ab2, Cry1F                          | BCW ECB FAW SB SWCB CEW                           | CEW WBC  | LL RR2  |
| 36                       | QROME (Q)  | Cry1Ab, Cry1F, mCry3A, Cry34/35Ab1                 | BCW ECB FAW SB SWCB                               | FAW WBC RW   | LL RR2  |
|                          | <b>BCW</b> = black cutworm                                       | <b>SB</b> = stalk borer                            | <b>GT</b> = glyphosate tolerant                   |  |   |
|                          | <b>CEW</b> = corn earworm  | <b>SWCB</b> = southern corn borer                  | <b>LL</b> = Liberty Link, glufosinate tolerant    |  |   |
|                          | <b>ECB</b> = European corn borer                                 | <b>TAW</b> = true armyworm                         | <b>RR2</b> = Roundup Ready 2, glyphosate tolerant |  |   |
|                          | <b>FAW</b> = fall armyworm                                       | <b>WBC</b> = western bean cutworm                  |   |  |   |
|                          | <b>RW</b> = corn rootworm  |  |   |  |   |

Source: <https://www.texasinsects.org/bt-corn-trait-table.html>

# The OMD Index

The digestibility of nutrients in corn silage is paramount when determining nutritional value. Starch and NDF are responsible for much of the digestible energy in corn silage. In order to give dairy producers and nutritionist a tool to evaluate corn silage hybrids, we developed a new digestibility index, called the Organic Matter Digestibility Index (OMDI or just OMD), and is based on digestibility of protein, fat, NDF, and starch, the sum of which makes up approximately 86-88% of the organic matter in corn silage.

The OMD index represents the digestible portion of silage organic matter and is based on chemical analyses only. It does not predict dry matter intake or milk production, although numerous studies clearly show that digestibility of forage organic matter is directly related to lactation performance of dairy cows. The OMD index does not represent the absolute digestibility of silage organic matter, as this can be reliably determined only in experiments with live animals. But, OMD is representative of the potentially digestible organic matter of the whole plant and can be used to compare silage hybrids. Furthermore, simulation analyses using the Cornell Net Carbohydrate and Protein System (CNCPS v.7.0; Cornell University, Ithaca, NY) show that OMD correlates reasonably well with model-predicted milk production of dairy cows fed a standard diet containing approx. 40% corn silage (dry matter basis).

## How is the OMD Index Used?

Feeding value of corn silage is mostly associated with digestibility of NDF or starch. A long-standing goal of PDMP is to create a single measure of silage nutritive value using several variables associated with digestibility. Traditional variables, crude protein (accounted for fiber-bound nitrogen), NDF, starch, lignin, and fat, are combined with in vitro digestibility determinations for NDF (NDFD30) and starch (IVSD; 4-hour, 1-mm grind). Once combined, these digestibility coefficients sum to predict OMD.

The OMD Index is calculated using the following equation:  $OMDI (\%) = \frac{\{[(\text{crude protein} - \text{NDFCP}) \times 0.89] + (\text{total fatty acids} \times 0.75) + (\text{starch} \times \text{IVSD} \div 100) + [(\text{aNDFom} - \text{lignin}) \times \text{NDFD30} \div 100]\}}{[(\text{crude protein} - \text{NDFCP}) + \text{total fatty acids} + \text{starch} + (\text{aNDFom} - \text{lignin})] \times 100}$ .

Where: OMDI (%) is **Organic Matter Digestibility Index**; crude protein, total fatty acids, starch, NDFCP (NDF-bound crude protein), aNDFom (ash-free basis, amylase-treated NDF), and lignin (ash-free) are expressed as % of corn silage dry matter; 0.89 is assumed (based on literature data) coefficient of digestibility of silage crude protein; 0.75 is assumed (based on literature data) coefficient of digestibility of silage total fatty acids; IVSD is starch digestibility (by wet chemistry at 4-hour and sample ground through a 1-mm sieve) expressed as % of starch; and NDFD30 is NDF digestibility at 30 h in vitro (by wet chemistry and sample ground through a 1-mm sieve) expressed as % of NDF.

**Use of OMDI:** The OMD index is intended to represent the digestible portion of silage dry matter and is based on chemical analyses. OMD does not represent the absolute digestibility of silage organic matter, but it is representative of the potentially digestible organic matter and can be used when comparing silage hybrids. ***Simply put, the higher the OMD value, the higher the overall expected digestibility of the silage.*** OMD reflects the digestibility of key nutrients within the entire plant. Producers without carryover of silage should consider the interaction of OMD and DOM (digestible organic matter yield per acre) as yield of digestible organic matter will be equally as relevant as OMD.

## Conclusion

Organic matter digestibility is not a new measure. For years, researchers and nutritionists have used digestibility estimates to formulate rations for dairy cattle. Today, integrating these data is a useful practice to gauge silage value and match hybrid to farm needs. Put simply, OMD measures whole plant digestibility. Emphasis is on digestibility of all main nutrients. In the end, we hope OMD serves to facilitate discussion among producer, seed consultant, and dairy nutritionist as to which hybrids offer the best nutrient value for dairy cows.