



Tool Name

Extension Team: Plant Science
Author: Dayton Spackman
Contact Email: djs5487@gmail.com
Website:

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), Sergio Francisco (PSU Animal Sciences), Chris Canale (Cargill), Hanna Wells (PSU Plant Science), Dayton Spackman (PSU Plant Science), Charlie White (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.

2023

PDMP/PSU Corn Silage Hybrid Performance Trial Results

Prepared by: Alex Hristov (PSU Animal Sciences), Sergio Francisco (PSU Animal Sciences), Chris Canale (Cargill), Hanna Wells (PSU Plant Science), Dayton Spackman (PSU Plant Science), Charlie White (PSU Plant Science)

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

Visit Penn State's College of Agricultural Sciences on the Web: www.cas.psu.edu

Penn State College of Agricultural Sciences research, extension, and resident education programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

This publication is available in alternative media on request.

The Pennsylvania State University is committed to the policy that all persons shall have equal access to programs, facilities, admission, and employment without regard to personal characteristics not related to ability, performance, or qualifications as determined by University policy or by state or federal authorities. It is the policy of the University to maintain an academic and work environment free of discrimination, including harassment. The Pennsylvania State University prohibits discrimination and harassment against any person because of age, ancestry, color, disability or handicap, national origin, race, religious creed, sex, sexual orientation, or veteran status. Discrimination or harassment against faculty, staff, or students will not be tolerated at The Pennsylvania State University. Direct all inquiries regarding the nondiscrimination policy to the Affirmative Action Director, The Pennsylvania State University, 328 Boucke Building, University Park, PA 16802-5901, Tel 814-865-4700/V, 814-863-1150/TTY.

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Cooperative Extension is implied

© The Pennsylvania State University 2015

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

Site:	Rock Springs, PA
Cooperator	Penn State Agronomy Farm
Planting Date	5/22/2023
Soil Type	
Herbicides	pre- post-
Previous Crop	
Tillage	
Starter Fertilizer	
Insecticide	
Manure	
Fertilizer	
Harvest Date	9/29/2023

Field Summary:

Early on this site had some slug damage, but the plants recovered well. Mid-summer the plot suffered some minor hail damage, despite the slugs and hail the plot did ok. Ear development was good, but plants were shorter than all the other locations. Weed control was excellent. There was some disease pressure from hail damage. This was the most stressed location, but the stress was uniform across the entire plot.

Weather Summary:

Month	Precip. In.	GDD
May 22 - 31	0.00	112
June	4.80	430
July	7.70	677
August	5.10	586
September 1 - 29	4.40	376
Seasonal Total	22.00	2181

Precip. Data:

<https://climate.com>

GDD data:

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

Penn State/PDMP Corn Silage Hybrid Testing Program 2023

Early maturity (85-100) day RM silage hybrids in Rock Springs, PA



PennState Extension
College of Agricultural Sciences



Notes: SEE BACKGROUND TAB

Cooperator: Penn State Agronomy Farm

Brand	Hybrid	Traits ¹	Relative Maturity	Pop. Plants/ac	Dry Matter % ²	NIRS ³					FDMS ⁴			WC ⁵	Fresh Yield tons/ac ⁷	OM Yield tons/ac ⁸	DOM Yield tons/ac ⁹	OMD % ¹⁰	
						Crude Protein %DM	Lignin %DM	Ash %DM	Starch %DM	TFA %DM	NDFom %DM	uNDF 240 hr %DM	NDFD 30 %NDF	IVSD %Starch ⁶					
91-97 day hybrids																			
Revere Seed	9108 VT2PRIB	43	91	32,333	35.7	7.4	2.8	2.7	42.9	2.6	31.4	10.4	52.4	52.1	19.4	6.6	3.7	56.0	
Seed Consultants	SC964AM	1	96	34,000	35.6	7.2	2.6	3.0	44.9	2.6	30.3	9.6	54.3	57.2	22.0	7.5	4.4	59.2	
Pine Creek Seed	R9317D	14	93	33,167	34.2	8.0	2.9	2.9	41.5	2.7	31.6	10.7	51.6	52.1	19.1	6.5	3.6	55.8	
Revere Seed	9538 DV	15	95	34,000	33.4	7.9	2.9	2.8	40.5	2.6	32.1	10.9	52.3	52.9	21.5	7.3	4.1	56.6	
Seed Consultants	SC973AM	1	97	34,000	32.7	7.4	2.6	2.8	42.6	2.5	32.0	9.6	55.1	51.6	18.9	6.4	3.8	56.1	
					91-97 day means	34.3	7.6	2.8	2.8	42.5	2.6	31.5	10.2	53.1	53.2	20.2	6.9	3.9	56.7
98-103 day hybrids																			
Brevant	B01B36SXE	31	101	34,000	43.8	7.9	2.1	2.4	42.1	2.6	35.4	7.1	63.1	57.2	16.8	5.7	3.6	62.7	
Seed Consultants	SC1003AM	1	100	33,167	35.8	7.2	2.7	2.5	43.5	2.5	31.2	9.9	53.5	54.6	24.1	8.2	4.7	57.6	
Dekalb	DKC098-55RIB	32	98	31,333	35.1	7.5	2.5	2.6	42.5	2.6	31.8	9.3	56.8	58.7	20.5	7.0	4.3	60.9	
Revere Seed	0297 VT2PRIB	43	102	32,833	34.6	7.2	2.8	2.8	42.1	2.5	32.1	10.2	53.9	51.2	21.2	7.2	4.0	55.9	
Pioneer	P9823Q	28	98	34,000	34.5	7.9	2.6	2.9	42.7	2.6	30.3	9.4	54.6	53.8	22.4	7.6	4.4	57.9	
Hubner	H9953P	35	99	33,000	34.2	7.7	2.6	2.8	43.0	2.5	30.6	9.8	53.7	54.4	20.4	7.0	4.0	57.7	
Dekalb	DKC48-34RIB	32	98	34,000	34.1	7.5	2.8	3.1	40.8	2.5	33.2	10.4	54.0	51.1	20.4	6.9	3.9	56.2	
Chemgro	5836RTC	37	98	34,000	34.0	7.4	2.9	2.7	41.0	2.5	33.1	11.2	52.2	56.9	21.0	7.1	4.2	58.2	
Brevant	B99A24Q	28	99	34,000	33.8	7.3	2.9	2.7	38.7	2.3	34.1	11.0	53.6	57.4	22.9	7.8	4.6	58.9	
Pioneer	P0035Q	28	100	34,000	33.8	7.4	2.8	3.0	41.2	2.6	32.4	10.2	54.2	54.4	22.5	7.6	4.4	57.8	
Revere Seed	9827 SXRIB	32	98	33,167	33.5	7.7	2.8	2.7	39.8	2.6	33.5	10.8	54.5	55.4	20.1	6.8	4.0	58.5	
Dekalb	DKC53-94RIB	32	103	34,000	33.5	7.5	2.8	2.7	39.1	2.5	33.4	10.7	54.1	61.1	22.8	7.8	4.5	61.2	
Syngenta	NK0007-AA-EZ1	10	100	34,000	32.9	7.7	3.0	3.1	41.6	2.4	31.5	10.9	49.7	50.8	18.8	6.4	3.5	54.4	
Channel	198-99SSPRIB	35	98	33,333	32.7	7.4	2.7	2.9	40.6	2.5	32.1	10.1	54.5	57.2	20.6	7.0	4.2	59.3	
Masters Choice	MC5160	0	101	34,000	31.4	7.4	2.7	3.0	42.5	2.4	31.9	10.4	53.1	54.7	21.0	7.1	4.1	57.6	
					98-103 day means	34.5	7.5	2.7	2.8	41.4	2.5	32.4	10.1	54.4	55.3	21.0	7.1	4.2	58.3
					Overall Mean	34.5	7.5	2.7	2.8	41.7	2.5	32.2	10.1	54.1	54.7	20.8	7.1	4.1	57.9
					LSD(0.1)	3.2	0.4	0.3	0.3	NS	NS	NS	1.3	1.6	3.9	1.5	0.5	0.3	1.9
					CV%	6.7	4.0	8.2	8.4	8.4	6.3	7.8	9.6	2.2	5.1	5.3	5.3	5.5	2.3

¹ Traits: See tab " Trait Key" for individual trait designation.

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

³ NIRS: Near Infrared Spectroscopy

⁴ FDMS: In 2022 Cumberland Valley Analytical Services introduced a new in vitro fiber digestibility system, called Feed Degradation Modeling System (FDMS), to predict NDFD for all major forage classes, including

⁵ WC: Wet Chemistry

⁶ 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).

⁷ Fresh Yield: Silage yields are expressed on a 35 percent DM basis; all other parameters are expressed on a dry matter basis.

⁸ OM Yield: Silage yield (tons/ac) expressed on an organic matter (OM) basis.

⁹ DOM Yield: Yield of digestible organic matter.

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

Penn State/PDMP Corn Silage Hybrid Testing Program 2023
Early maturity (85-100) day RM silage hybrids in Rock Springs, PA



PennState Extension &
 College of Agricultural Sciences



Notes: SEE BACKGROUND TAB

Cooperator: Penn State Agronomy Farm

Brand	Hybrid	Traits ¹	Relative Maturity	Pop. Plants/ac	Dry Matter % ²	NIRS ³					FDMS ⁴			WC ⁵	Fresh Yield tons/ac ⁷	OM Yield tons/ac ⁸	DOM Yield tons/ac ⁹	OMD % ¹⁰
						Crude Protein %DM	Lignin %DM	Ash %DM	Starch %DM	TFA %DM	NDFom %DM	uNDF 240 hr %DM	NDFD 30 %NDF	IVSD %Starch ⁶				

NS = Not Significant

Prepared by: Alex Hristov (PSU Animal Sciences), Sergio Francisco (PSU Animal Sciences), Chris Canale (Cargill), Hanna Wells(PSU Plant Science), Dayton Spackman (PSU Plant Science), Charlie White (PSU Plant Science)

Handy BT Trait Table - https://www.texasinsects.org/uploads/4/9/3/0/49304017/bttraittable_feb_2023.pdf

Trait ID #	Trait packages, listed A-Z = former name if applicable	Bag-Tag code	Toxins in package**** Font type denotes target Caterpillar or rootworm	BCW	CEW	ECB	FAW	SB	SCB	SWCB	TAW	WBC	CRW	Resistance cases for all Bts in package	Non-Bt refuge, cornbelt	Herbicide tolerance
0	Conventional															
1	AcreMax	AM	Cry1Ab - Cry1F	x	x	x	x	x	x	x				CEW FAW WBC	5% in bag	GLY LL
2	AcreMax CRW	AMRW	Cry34Ab1 - Cry35Ab1										x	NCR WCR	10% in bag	GLY LL
3	AcreMax1	AM1	Cry1F - Cry34Ab1 - Cry35Ab1	x		x	x	x	x	x			x	ECB FAW NCR SWCB WBC WCR	10% in bag 20% ECB	GLY LL
4	AcreMax Leptra	AML	Cry1Ab - Cry1F - Vip3A	x	x	x	x	x	x	x	x	x			5% in bag	GLY LL
5	AcreMax TRIssect	AMT	Cry1Ab - Cry1F - mCry3A	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	10% in bag	GLY LL
6	AcreMax Xtra	AMX	Cry1Ab - Cry1F - Cry34Ab1 - Cry35Ab1	x	x	x	x	x	x	x			x	CEW FAW NCR WBC WCR	10% in bag	GLY LL
7	AcreMax Xtreme	AMXT	Cry1Ab - Cry1F - Cry34Ab1 - Cry35Ab1 - mCry3A	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	5% in bag	GLY LL
8	Agrisure 3010	3010	Cry1Ab		x	x								CEW	20%	GLY LL
9	Agrisure 3000 GT & 3011A	3000GT 3011A	Cry1Ab - mCry3A		x	x							x	CEW WCR	20%	GLY LL
10	Agrisure Above = Agrisure 3120EZ	AA	Cry1Ab - Cry1F	x	x	x	x	x	x	x				CEW FAW WBC	5% in bag	GLY LL - check bag
11	Agrisure Total = Agrisure 3122EZ	AT	Cry1Ab - Cry1F - Cry34Ab1 - Cry35Ab1 - mCry3A	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	5% in bag	GLY LL - check bag
12	Agrisure Viptera 3110	3110	Cry1Ab - Vip3A	x	x	x	x	x	x	x	x	x			20%	GLY LL
13	Agrisure Viptera 3111	3111	Cry1Ab - Vip3A - mCry3A	x	x	x	x	x	x	x	x	x	x	WCR	20%	GLY LL
14	Duracade = AgrisureDuracade 5122EZ	D	Cry1Ab - Cry1F - eCry3.1Ab - mCry3A	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	5% in bag	GLY LL - check bag
15	Duracade Viptera = AgrisureDuracade 5222EZ	DV	Cry1Ab - Cry1F - Vip3A - eCry3.1Ab - mCry3A	x	x	x	x	x	x	x	x	x	x	WCR	5% in bag	GLY LL - check bag
16	Duracade Viptera Z3 = AgrisureDuracade 5332EZ	DVZ	Cry1Ab - Cry1A.105 - Cry2Ab2 - Vip3A - eCry3.1Ab - mCry3A	x	x	x	x	x	x	x	x	x	x	WCR	5% in bag	GLY LL - check bag
17	Herculex I	HXI	Cry1F	x		x	x	x	x	x				ECB FAW SWCB WBC	20%	GLY LL
18	Herculex RW	HXRW	Cry34Ab1 - Cry35Ab1										x	NCR WCR	20%	GLY LL
19	Herculex XTRA	HXX	Cry1F - Cry34Ab1 - Cry35Ab1	x		x	x	x	x	x			x	ECB FAW NCR SWCB WBC WCR	20%	GLY LL
20	Intrasect	YHR	Cry1Ab - Cry1F	x	x	x	x	x	x	x				CEW FAW WBC	5%	GLY LL
21	Intrasect TRIssect	CYHR	Cry1Ab - Cry1F - mCry3A	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	20%	GLY LL
22	Intrasect Xtra	YXR	Cry1Ab - Cry1F - Cry34Ab1 - Cry35Ab1	x	x	x	x	x	x	x			x	CEW FAW NCR WBC WCR	20%	GLY LL
23	Intrasect Xtreme	CYXR	Cry1Ab - Cry1F - Cry34Ab1 - Cry35Ab1 - mCry3A	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	5%	GLY LL
24	Leptra	VYHR	Cry1Ab - Cry1F - Vip3A	x	x	x	x	x	x	x	x	x			5%	GLY LL
25	Powercore	PW	Cry1A.105 - Cry2Ab2 - Cry1F	x	x	x	x	x	x	x				CEW WBC	5%	GLY LL
26	Powercore Refuge Advanced	PWRA	Cry1A.105 - Cry2Ab2 - Cry1F	x	x	x	x	x	x	x				CEW WBC	5% in bag	GLY LL
27	Powercore Enlist Refuge Advanced	PWE	Cry1A.105 - Cry2Ab2 - Cry1F	x	x	x	x	x	x	x				CEW WBC	5% in bag	GLY LL 2,4-D fops
28	QROME	Q	Cry1Ab - Cry1F - Cry34Ab1 - Cry35Ab1 - mCry3A	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	5% in bag	GLY LL
29	SmartStax	SS, SX	Cry1A.105 - Cry2Ab2 - Cry1F - Cry3Bb1 - Cry34Ab1 - Cry35Ab1	x	x	x	x	x	x	x			x	CEW NCR WBC WCR	5%	GLY LL
30	SmartStax Refuge Advanced	SXRA	Cry1A.105 - Cry2Ab2 - Cry1F - Cry3Bb1 - Cry34Ab1 - Cry35Ab1	x	x	x	x	x	x	x			x	CEW NCR WBC WCR	5% in bag	GLY LL
31	SmartStax Enlist	SSE	Cry1A.105 - Cry2Ab2 - Cry1F - Cry3Bb1 - Cry34Ab1 - Cry35Ab1	x	x	x	x	x	x	x			x	CEW NCR WBC WCR	5% in bag	GLY LL 2,4-D fops
32	SmartStax RIB Complete	SS SSRIB	Cry1A.105 - Cry2Ab2 - Cry1F - Cry3Bb1 - Cry34Ab1 - Cry35Ab1	x	x	x	x	x	x	x			x	CEW NCR WBC WCR	5% in bag	GLY LL
33	SmartStax PRO Refuge Advanced	SSPro	Cry1A.105 - Cry2Ab2 - Cry1F - Cry3Bb1 - Cry34Ab1 - Cry35Ab1 - dvSnf7	x	x	x	x	x	x	x			x	CEW WBC	5% in bag	GLY LL
34	SmartStax PRO Enlist Refuge Advanced		Cry1A.105 - Cry2Ab2 - Cry1F - Cry3Bb1 - Cry34Ab1 - Cry35Ab1 - dvSnf7	x	x	x	x	x	x	x			x	CEW WBC	5% in bag	GLY LL 2,4-D fops
35	SmartStax PRO with RNAi Technology	SSPRORIB	Cry1A.105 - Cry2Ab2 - Cry1F - Cry3Bb1 - Cry34Ab1 - Cry35Ab1 - dvSnf7	x	x	x	x	x	x	x			x	CEW WBC	5% in bag	GLY LL
36	Trecepta	TRE,TRC	Cry1A.105 - Cry2Ab2 - Vip3A	x	x	x	x	x	x	x	x	x			5%	GLY
37	Trecepta RIB Complete	TRERIB TRCRIB	Cry1A.105 - Cry2Ab2 - Vip3A	x	x	x	x	x	x	x	x	x			5% in bag	GLY
38	TRIssect	CHR	Cry1F - mCry3A	x		x	x	x	x	x			x	ECB FAW SWCB WBC WCR	20%	GLY LL
39	Viptera = AgrisureViptera 3220EZ	V	Cry1Ab - Cry1F - Vip3A	x	x	x	x	x	x	x	x	x			5% in bag	GLY LL - check bag
40	Viptera Z3 = AgrisureViptera 3330EZ	VZ	Cry1Ab - Cry1A.105 - Cry2Ab2 - Vip3A	x	x	x	x	x	x	x	x	x			5% in bag	GLY LL - check bag
41	Vorceed Enlist	V	Cry1A.105 - Cry2Ab2 - Cry1F - Cry3Bb1 - Cry34Ab1 - Cry35Ab1 - dvSnf7	x	x	x	x	x	x	x			x	CEW NCR WBC	5% in bag	GLY LL 2,4-D fops
42	VT Double PRO	VT2P VT2PRO	Cry1A.105 - Cry2Ab2		x	x	x	x	x	x				CEW	5%	GLY
43	VT2P RIB Complete	VT2PRIB	Cry1A.105 - Cry2Ab2		x	x	x	x	x	x				CEW	5% in bag	GLY
44	VT TriplePRO	VT3P	Cry1A.105 - Cry2Ab2 - Cry3Bb1		x	x	x	x	x	x			x	CEW NCR WCR	20%	GLY
45	VT3P RIB Complete	VT3PRIB	Cry1A.105 - Cry2Ab2 - Cry3Bb1		x	x	x	x	x	x			x	CEW NCR WCR	10% in bag	GLY

46	VT4Pro w/RNAi Tech.	VT4PRO	Cry1A.105 - Cry2Ab2 - Vip3A - Cry3Bb1 - <i>dvSnf7</i>	x	x	x	x	x	x	x	x	x	x		5% in bag	GLY
47	YieldGard Corn Borer	YGCB	Cry1Ab		x	x			x	x				CEW	20%	GLY
48	YieldGard Rootworm	YGRW	Cry3Bb1										x	NCR WCR	20%	GLY
49	YieldGard VT Triple	VT3	Cry1Ab - Cry3Bb1		x	x			x	x			x	CEW NCR WCR	20%	GLY

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. 6.55; 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 digestibility determinations for NDF (FDMS NDFD30*) and starch (IVSD; 4-hour, 1-mm grind). Once combined, these digestibility coefficients sum to predict OMD.

* FDMS: In 2022 Cumberland Valley Analytical Services introduced a new in vitro fiber digestibility system, called Feed Degradation Modeling System (FDMS), to predict NDFD for all major forage classes, including fresh corn silage. We determined the relationship between FDMS NDFD30 and wet chemistry NDFD30 was strong enough to use FDMS NDFD30, and avoid the extra charge for wet chemistry NDFD30. Hence, FDMS NDFD30 will be used to calculate OMD. Hence, FDMS NDFD30 = 100

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

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 FDMS NDFD30.

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.