LEGEND SEEDS CORN SILAGE TESTING

2020 L.E.A.P. PLOT SUMMARY

Legend Elite Advancement Project (L.E.A.P.) is our proprietary, in-house research program. It validates data on hybrid genetic performance over time and agronomic placement. Our L.E.A.P. plots are used for product evaluation, selection, and positioning on the right soil type and in the right geography to consistently deliver high value products to growers.

Planting population: 28,000

Pounds of Beef/acre and per ton are based on 1 pound beef produced for every 6 pounds of TDN fed

HYBRID	RM	MILK PER ACRE	MILK PER TON	TONS/ ACRE AT 65%	% MOISTURE	Crude Protein	ADF	NDF	LIGNIN	TTNDFd	NDFd 30 HOURS	uNDF 240hr (% DM)	% DM STARCH	7 HR STARCH DIGESTIBILITY	NFC	30 HR TDN	LBS BEEF/ TON	LBS BEEF/ ACRE
EARLY MATURITY SUMMARY *Two location average*																		
LNG 9085 RR	85	26,957	3,006	25.6	52.5	6.9	24.8	43.2	4.9	33.6	53.9	13.0	33.0	61.6	44.3	67.6	225	2,019
LNG 9085 RR w/Ionfx	85	29,952	3,221	26.7	53.2	7.7	21.8	38.1	4.6	31.5	55.8	10.7	36.6	60.3	48.0	70.3	234	2,184
LR 47J9185 VIP3110	85	21,550	3,494	18.0	66.9	7.6	17.0	32.2	3.7	33.4	62.4	7.5	44.0	64.2	54.1	74.2	247	1,538
2290 VT2P RIB	86	34,605	3,397	29.1	59.9	7.3	19.7	35.7	4.1	32.7	56.5	9.1	39.8	65.3	51.5	72.6	242	2,468
47J086 VIP3220	86	34,974	3,307	29.9	52.8	7.3	18.9	34.6	4.0	32.8	58.7	8.3	42.1	60.9	52.7	71.7	239	2,522
47J988 VIP3120	88	38,651	3,544	31.2	57.4	7.4	17.2	32.3	3.6	35.9	61.6	6.5	43.5	63.2	54.7	74.8	249	2,720
LNG 9091 RR	91	33,277	3,440	27.8	60.5	7.9	21.0	38.1	4.3	36.1	58.4	10.0	36.5	64.1	48.2	73.2	244	2,364
LNG 9091 RR w/Ionfx	91	32,361	3,246	28.4	58.6	7.0	23.0	40.5	4.4	37.6	58.7	10.3	35.0	64.7	46.6	70.8	236	2,351
LR 9191 VIP3110A	91	28,812	3,216	25.6	64.6	7.3	24.0	42.8	4.6	38.0	56.6	10.5	31.5	68.7	44.7	70.5	235	2,103
9993 VT2P RIB	93	40,014	3,564	31.9	55.3	7.2	16.4	30.6	3.6	32.1	61.4	6.6	45.7	64.7	56.4	75.0	250	2,804
SI 095 RR	95	38,303	3,388	32.3	61.2	7.5	22.0	38.6	4.3	37.4	57.8	9.8	35.2	70.8	48.6	72.7	242	2,740
SI 095 RR w/Ionfx	95	36,712	3,410	30.9	61.5	7.8	19.8	35.2	4.0	35.9	58.7	8.3	38.7	64.5	51.4	72.9	243	2,621
LR 9995 VIP3220	95	31,797	3,405	26.6	59.6	7.5	20.6	36.8	4.1	36.8	58.3	9.0	37.7	69.1	50.2	72.9	243	2,267
5898 SS RIB	97	34,921	3,440	29.2	59.8	7.4	20.2	36.1	4.2	34.0	58.5	9.4	38.9	66.6	50.8	73.4	245	2,488
9997 VT2P RIB	97	34,870	3,435	29.0	61.3	7.5	19.4	34.9	4.0	34.9	59.6	8.4	40.0	65.0	52.0	73.2	244	2,477

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MID TO LATE MATURITY SUMMARY *Four location average: Colfax, ND; Fairfax, MN; Blunt, SD; Ellsworth, WI*																		
LR 9191 VIP3110A	91	28,898	3,368	24.6	57.8	7.1	19.6	36.1	4.0	35.6	59.5	8.2	40.0	66.4	51.4	72.4	241	2,073
LNG 9091 RR	91	29,077	3,343	24.8	59.9	7.6	21.8	39.0	4.4	37.2	57.9	10.3	35.6	64.3	47.4	72.0	240	2,087
LNG 9091 RR w/Ionfx	91	28,533	3,300	24.7	59.0	6.9	22.0	39.4	4.3	38.0	58.8	9.5	36.2	64.6	47.8	71.6	239	2,063
LR 9995 VIP3220	95	30,359	3,506	24.7	56.0	7.6	17.3	31.8	3.7	33.6	59.9	7.2	43.8	65.3	55.0	74.2	247	2,141
SI 095 RR	95	33,369	3,306	28.7	60.8	7.4	22.9	40.3	4.4	39.4	58.1	10.3	33.8	69.7	47.0	71.7	239	2,408
SI 095 RR w/Ionfx	95	33,540	3,348	28.6	59.0	7.4	20.5	35.5	4.1	34.8	57.3	8.7	39.0	63.8	51.2	72.1	240	2,407
MID TO LATE MATURITY SUMMARY *Four location average: Cobb, WI; Fairfax, MN; Blunt, SD; Buffalo Center, IA*																		
LR 9995 VIP3220	95	28,100	3,481	23.1	57.6	7.2	17.2	32.2	3.7	33.1	60.0	6.6	43.8	64.7	55.3	73.8	246	1,988
SI 095 RR	95	32,070	3,277	27.9	60.5	7.3	22.2	38.8	4.2	38.7	58.2	9.0	35.0	67.7	48.4	71.3	238	2,326
SI 095 RR w/Ionfx	95	33,946	3,191	30.4	60.9	7.0	22.9	39.3	4.4	36.2	55.3	9.9	34.7	68.1	48.1	69.9	233	2,480
LNG 9103 RR	103	32,156	3,133	29.4	63.2	7.1	24.2	41.6	4.5	38.7	55.7	9.5	30.9	71.2	46.1	69.2	231	2,372
LNG 9103 RR w/Ionfx	103	25,943	2,915	25.5	66.4	6.6	27.5	46.6	5.2	37.1	53.0	12.4	26.8	70.4	42.0	66.1	220	1,963
MID TO LATE MATURITY SUMMARY *Three location average: Fairfax, MN; Blunt, SD; Buffalo Center, IA*																		
LR 9995 VIP3220	95	28,059	3,587	22.3	54.2	7.2	14.6	28.3	3.3	31.6	61.5	5.5	48.5	63.7	59.0	75.3	250	1,960
SI 095 RR	95	31,408	3,282	27.2	60.1	7.4	22.8	40.6	4.2	41.9	59.6	9.3	33.1	69.6	46.5	71.6	238	2,278
SI 095 RR w/Ionfx	95	35,276	3,265	30.9	58.6	6.9	21.8	37.4	4.3	35.3	55.9	9.5	37.2	66.2	49.8	70.9	236	2,555
LR 9102 VIP3110	102	25,608	3,321	22.0	55.7	7.5	20.6	36.9	4.3	35.3	58.1	9.2	38.4	60.8	49.4	71.8	239	1,844
LNG 9103 RR	103	32,345	3,250	28.4	61.8	7.1	22.8	39.8	4.3	39.1	57.0	8.9	33.1	69.0	47.6	70.9	236	2,350
LNG 9103 RR w/Ionfx	103	26,399	3,037	24.8	65.3	6.7	26.2	44.9	4.9	38.3	54.6	11.7	28.5	69.7	43.1	67.9	226	1,966
MID TO LATE MATURITY SUMMARY *Five location average: Blunt SD, Fairfax, MN, Colfax, ND, Buffalo Center, IA, Cobb, WI*																		
LR 9995 VIP3220	95	29,332	3,456	24.3	58.3	7.3	18.4	33.7	3.8	34.4	59.4	7.4	41.8	66.1	53.6	73.5	245	2,081
SI 095 RR	95	33,521	3,289	29.0	61.7	7.4	23.0	40.4	4.3	39.9	58.5	9.4	33.0	70.3	46.8	71.5	238	2,426
SI 095 RR Ionfx	95	34,868	3,264	30.6	61.1	7.3	21.9	37.9	4.3	36.1	56.4	9.3	36.0	66.9	49.2	70.9	236	2,527

2020 L.E.A.P. SILAGE TRIAL RESULTS

Hybrids were randomized and planted in replicated plots and 10 plants per entry were harvested and weighed. One plot (replication) was sampled from each location. Yield calculations were made knowing a 28,000 and 23,000 planting population for normal and arid climates, respectively. Three plants per treatment were chopped using a chipper shredder and forage samples were collected. Samples were shipped to and evaluated by Rock River Labs using a comprehensive nutrient analysis for each sample with NIR. Selected results are reported along with milk and beef production per acre predictions based on quality and yield calculations.

Locations were harvested for silage testing and hybrids were grouped into two sets by maturity (early and late). Three hybrids were used in both the early and late breakouts.

Key Points:

1. Leafy and LNG hybrids stand out based on TTNDFd (Total Track Neutral Detergent Fiber Digestibility). This was particularly clear in the Mid-Late summary charts.
2. Hybrid performance can be ranked based on TTNDFd since this is a better predictor of animal performance than NDFd because it better measures fiber digestibility and the rate of digestion.
3. A change in TTNDFd of 2-3 points equates to 1 lb. of milk when corn silage makes up 50 lbs. in the diet.
4. Leafy and LNG hybrids rank very strongly in the 7 hr. starch digestibility category as well. The 7 hr. starch digestibility is a better indicator of starch availability due to hard grain than the percent starch number.

Points to remember about Leafy and LNG corn:

- They should be planted 5-10% lower population than dual purpose corn and less than 32,000.
- They have a bigger harvest window than dual purpose corn with better staygreen.
- The grain is very soft and highly digestible. For this reason observation of chopped corn may not reveal much yellow corn, as it is easily cracked and shows more white than dual purpose corn.
- These hybrids ferment in as little as 30 days because of the soft starch and the grain is easily crushed at chopping.
- Lab tests may not fully represent or predict animal performance with Leafy and LNG corn. Analytics that don't include TTNDFd and 7 hr. starch digestibility may not adequately predict animal performance because ADF/NDF, starch and NDFd don't account for the dynamics of fiber digestibility. For this reason the milk/ton may be reported low, but cows often still milk above the lab predictions.
- Milk/ton (and therefore Milk/acre) does not use TTNDFd and therefore underestimate the value of Leafy and LNG corn.
- Percent starch may not accurately predict available starch because hard or vitreous corn is not as digestible as soft or floury corn. The soft starch is more available to rumen microbes as the hard corn is bound with protein molecules and therefore less digestible by the microbes.

Analysis parameter terms and ranges

- ADF - Acid Detergent Fiber is the amount of fiber left following soaking in acid and represents the non digestible portion of the sample.
- NDF - Neutral Detergent Fiber is what remains after a mild acid bath and is used to predict what is easily available to the animal.