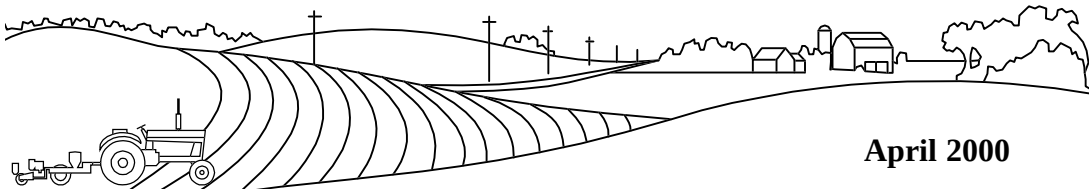
UNIVERSITY OF CALIFORNIA COUNTY OF TULARE COOPERATIVE EXTENSION



April 2000

Field Crop Notes

1999 Silage Corn Variety Trial Results – Tulare County and Kings County

Yield and quality results from the 1999 Tulare County silage corn variety trial are listed in Table 1 (yield and plant & ear heights were presented in the January 2000 issue of this newsletter).

Fifteen varieties were each replicated three times. Each plot was 6 rows wide and the length of the field, a little less than ¼ mile. The entire plot was harvested for yield weights. Samples for quality were taken at the silage pile, refrigerated, and put in a drying oven the next day. Wet chemistry was used for the determination of percent protein, NDF, and ADF.

Yield and quality results from the 1999 Kings County silage corn variety trial are listed in Table 2. This trial was conducted with replicated large-scale strips similar to the trial in Tulare County.

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In both tables, yields are presented both on an "**as harvested**" basis (weight taken as the trucks came out of the field) and on an "**adjusted**" basis (moisture content taken into account and all varieties adjusted mathematically to 70% moisture). Comparing weights as they come out of the field without considering differences in moisture content can give an incorrect picture of results. Varieties that are less mature contain more water than varieties that are more mature and therefore are often heavier than more mature, drier varieties. Looking at Table 1, varieties with the highest moisture content tend to have the highest weights when harvested. To compensate for this difference in moisture content at harvest, a mathematical calculation can be done to adjust all yields to 70% moisture. While this makes it easier to compare varieties, this method also has limitations. It will tend to favor varieties that are drier than 70% at harvest because it adds weight to account for the moisture deficit. The calculation hurts varieties that are more than 70% moisture because it merely subtracts the weight of the excess moisture without taking into account the increase in dry matter that occurs as plants mature. The more the moisture content differs from 70% at harvest, the more the mathematical adjustment could be incorrect.

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Cooperative Extension Work in Agriculture and Home Economics, U.S. Department of Agriculture, University of California, Tulare County Cooperating

Alfalfa Aphids

There is a new black aphid pest in alfalfa that became a problem in some parts of the San Joaquin Valley last September (when it was still warm) and then flared up again in December and January. In Tulare County, a number of fields in the Tulare/Tipton area had significant populations at the end of January and early February. It is not common for the same aphid to be a problem in warm weather and cold weather.

An alfalfa field in Madera County had to be sprayed last September when the weather was still pretty warm, so it would be best to keep an eye out in alfalfa for this aphid throughout the spring and summer because we just don't know what it is going to do.

This aphid caused significant stunting in alfalfa and the thresholds that we are recommending for the time being, in lieu of research data, are the same as for the blue alfalfa aphid. These are 10-12 aphids per stem when regrowth is less than 10 inches; or more than 60 aphids per stem when alfalfa is more than 10 inches high. Be sure to evaluate predators and parasites, which can be effective in reducing aphid populations. One advantage in the warmer months of summer is the increased presence and activity of parasitic wasps and predators.

The aphid taxonomically is identical to the cowpea aphid, *Aphis craccivora,* which is a black aphid. The cowpea aphid has been a summertime pest of blackeye cowpeas for the last 10 years or so. Whether this black aphid in the alfalfa is the same critter as in the cowpeas or just a "look alike" has yet to be seen.

Carol Frate
Farm Advisor
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If you use lagoon water on your fields, then you will want to attend the following meeting:

Water Meters for Measuring Flow of Lagoon Water
Date: May 9, 2000
Time: 10 am to noon
Location: Rio Blanco Dairy
South side of Avenue 192 and just west of Road 52
Turn south on the dirt road on the west of the dairy

Dr. Larry Schwankl, Department of Land Air and Water Resources, University of California – Davis, has installed and tested several water meters designed for use with lagoon water. These meters will be on display and the results of the meter tests will be presented.

Background

Dairy lagoon water contains many nutrients needed by crops, particularly nitrogen and potassium. It can be a valuable source of fertilizer, reducing the amount of commercial fertilizer needed. If using lagoon water as a fertilizer source, the first step is to know how much lagoon water is being applied. Various methods, such as measuring pond drop or estimating the output of the lagoon pump, can be used to determine the approximate amount of lagoon water applied but meters are more accurate and much easier to use. Using a flow meter and valve with lagoon water analysis, target fertilizer rates can be applied.

Not all flow meters are created equal. Lagoon water, because of all the solids, cow hairs, and gunk that it has, requires different types of flow meters than can be used with well water or canal water. The purpose of this field day is to show the types of meters that work with lagoon water, what pipeline requirements are needed for meter placement, and to discuss the performance of the meters tested.

(For planning purposes, please call the Cooperative Extension Office, 733-6363, if you think you will be attending.)

Map to Flow Meter Meeting

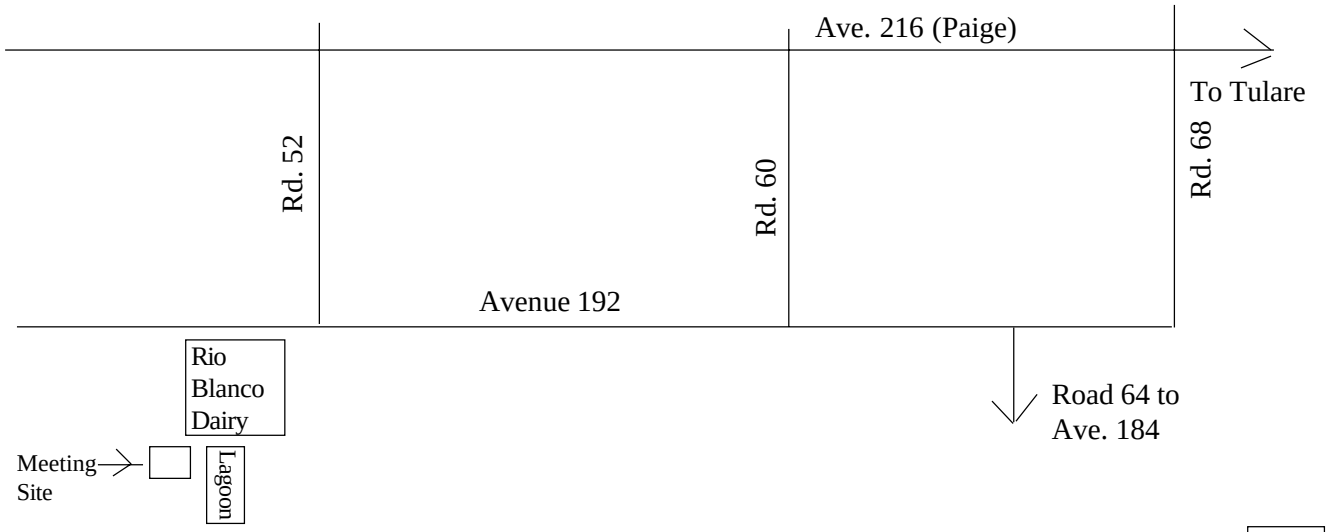

Table 1. 1999 Tulare County UCCE Silge Corn Variety Trial - C. Frate[1]

Cooperator: Garret DeJong

Harvester: Vercauteren Custom Harvesting, Inc

Planted: May 27, 1999; Harvested: September 20, 1999

Soil type: Cajon fine sandy loam

		Plant	Yield Summaries			Quality Parameters[2]		
Company	Brand	Population per Acre	Tons/A as harvested	At Harvest Moisture %	Tons/A adjusted to 70% Moisture	% protein	% ADF	% NDF
Novartis	NK 8214	32920 ab	39.4 a	68.4 cdef	41.5 a	7.3 bcd	29.3	45.0
DeKalb	679	31580 bcd	35.4 cdef	65.3 gh	41.0 ab	6.8 d	29.8	46.3
Gutwein	2696	33690 a	34.5 efg	65.1 h	40.2 abc	7.5 abc	29.4	44.9
Cargill	9027 (field variety)	29950 fg	38.8 ab	69.0 bcde	40.1 abc	7.3 bcd	27.9	43.4
Pioneer	32K61	31140 cdef	36.1 cde	67.2 efg	39.5 abcd	8.1 a	29.4	45.1
SeedTec	ST 7838	30080 efg	36.5 cd	67.6 def	39.4 abcd	7.3 bcd	29.0	43.1
Cargill	8327	32080 bc	35.3 cdef	66.8 fgh	39.0 bcde	6.8 cd	29.4	44.9
Cal Valley	8681	31450 cde	37.0 bc	69.4 bcd	37.8 cdef	7.4 bcd	29.6	44.7
Asgrow	RX 938	30920 cdef	40.1 a	72.1 a	37.3 defg	7.5 abc	29.4	46.4
Germain's - ABT	Hi Test 4138	34050 a	34.0 fgh	67.5 def	36.9 efg	7.1 bcd	29.0	42.7
Simplot	Big Max XL	28280 h	37.0 bc	70.4 ab	36.5 fg	6.8 d	29.6	44.9
Mycogen	TMF113	29920 fg	32.5 h	66.6 fgh	36.1 fg	7.5 abcd	28.2	46.3
Baglietto	5555	25920 ii	33.0 gh	67.3 ef	36.0 fg	7.2 bcd	27.7	43.4
AgriPro	9707	29090 gh	34.8 defg	69.6 bc	35.2 g	7.5 abc	29.3	44.5
Farmers Warehouse	6481	30280 defg	28.3 ii	66.5 fgh	31.6 h	7.4 bcd	27.9	42.6
Coefficient of Variation %		*2.67*	*3.1*	*1.7*	*3.89*	*5.7*	*4.5*	*4.4*
LSD (0.05)		*1372*	*1.8*	*2.0*	*2.46*	*0.7*	*NS*	*NS*
average of all plots		*30756*	*35.5*	*67.9*	*37.9*	*7.3*	*29.0*	*44.6*

[1]Values within a column followed by a common letter do not differ significantly at the 5% level of probability using LSD. There were 3 replications.

[2]Analysis done using wet chemistry (Mid-State Lab, Visalia).

Table 2. 1999 Kings County UCCE Silage Corn Variety Trial

Cooperator: Gilbert denDulk
Harvester: Netto Ag, Inc.
Planted: March 29, 1999; Harvested: August 16, 1999
Soil type: Kimberlina fine sandy loam

		Yield Summaries[1]			Quality Parameters[2]			Ear Characteristics[3]			
Company	Brand	Tons/A as harvested	% Moisture At Harvest	Tons/A adjusted to 70% Moisture	% protein	% ADF	% NDF	Plant height (ft)	Ear height (ft.)	Ear % Dry Matter	Lbs/ear. @ 60% DM
Asgrow	RX 913	27.2	60.5	35.5 a	6.4	26.9	45.9	9.3	4.3	53.3	0.58
DeKalb	679	30.5	65.7	34.9 ab	6.7	27.7	45.7	9.3	4.7	55.2	0.77
Cargill	9027	28.1	63.1	34.5 abc	6.5	25.3	43.3	9.8	4.3	51.7	0.65
SeedTec	7638	27.5	63.8	33.0 abcd	6.3	27.9	46.0	10.3	4.6	52.2	0.62
Fielder's Choice	8216	27.4	64.0	32.9 abcd	6.2	27.9	47.1	9.7	4.5	51.2	0.64
Simplot	XL Big Maxx	30.1	67.2	32.6 abcd	7.0	30.0	46.8	9.8	4.4	51.3	0.63
Pioneer	3223	27.6	64.7	32.2 bcd	7.0	24.6	41.6	8.7	4.2	53.9	0.66
Fielder's Choice	8417	26.8	64.6	31.6 cd	6.7	26.6	44.5	10.3	4.8	50.6	0.64
Guttwein	2696	25.4	63.0	31.3 cd	6.7	24.8	42.9	8.8	4.3	51.8	0.65
Novartis	NK 8214	25.7	63.6	31.3 cd	6.6	27.0	44.7	9.0	4.0	49.3	0.57
Agri-Pro	9707	27.5	66.3	30.8 de	7.1	27.6	45.9	8.8	3.8	49.5	0.59
DeKalb	647	22.0	58.9	30.0 de	6.9	23.6	39.1	9.8	4.2	54.7	0.61
Mycogen	TMF 113	23.4	64.1	28.0 e	7.2	27.4	46.7	11.0	3.8	49.9	0.63
Coefficient of Variation %		*6.27*	*3.19*	*6.00*	*7.04*	*7.82*	*6.74*			*4.57*	*8.85*
LSD (0.05)		*2.85*	*3.44*	*3.26*	*0.79*	*3.53*	*5.08*			*4.00*	*0.09*
average of all plots		*26.9*	*63.8*	*32.2*	*6.7*	*26.7*	*44.6*	*9.6*	*4.3*	*51.9*	*0.63*

[1]Values within a column followed by a common letter do not differ significantly at the 5% level of probability.

[2]Analysis done using wet chemistry (Dairyland Lab, Tulare).

[3]Ear weights were measured at the north and south portion of the field in all 3 reps.
At each location, 10 consecutive ears were harvested, weighed and sampled for DM.