


# CEREALS



FOR

# FORAGE

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## CEREALS FOR FORAGE - PRODUCTION & COSTS

Cereals for green chop are economical for winter feed. The cereals are planted in the fall as a double crop following silage corn. Alfalfa yields are low during the winter months, leaving a "blank spot" in the green feed calendar for many dairy men. This "blank spot" can be filled by planting cereals for forage.

### Land Preparation

Land preparation begins in October or early November. Generally, a pre-irrigation is required to provide adequate moisture to germinate the seed. The corn rows can be used for the pre-irrigation. Only a minimum of land preparation is needed. The land is usually disked twice and planted.

An alternate procedure consists of disking, planting, and then a sprinkler irrigation to germinate the seed. This method shortens the length of time from harvesting corn to emergence of the cereal.

### Planting

The earlier in the fall you plant after October 15, the higher the yields. Plant treated seed 1" to 2" deep at the rate of 100 lbs/acre. The seed represents only about 1/20 of the total production costs. The use of poor quality seed can result in weedy fields and reduced yields. Buying certified seed assures the grower the seed has known genetic identity and purity, plus high quality.

Treating seed with a chemical fungicide is recommended for control of seed-borne diseases.

## Fertilization

Fertilizing produces earlier cuttings and increases yields. Nitrogen applied at the rate of 50-100 lbs/acre per cutting is important for maximum production. If only one cutting is to be made, apply 100-150 lbs. of nitrogen per acre at planting time.

## Irrigation

Winter rains normally provide most of the moisture for the crop after it is established. During drought periods, supplemental irrigations are applied as needed. To get good regrowth, irrigate immediately after each cutting, unless it rains.

## Varieties

Several well adapted varieties of barley, oats, wheat, and rye may be used. The varieties differ in their growth characteristics and disease resistance, so select the variety with the best characteristics for your particular conditions.

## Oats

Sierra, Curt, Indio, Kanota, and Ventura can be used. These oats are not as susceptible to yellow dwarf and powdery mildew as is barley.

Sierra oats, characterized by its broad, dark green leaves, is well adapted to green chopping. This variety establishes and grows fast, producing higher yields earlier than most varieties.

Kanota is slower in establishing than Sierra; however, it is more resistant to yellow dwarf than any other oat variety.

### Barley

California Mariout and Blanco Mariout barley will establish and grow faster than any other grain tested. These are high forage producers, but they have rough beards and should be cut soon after heading out. Blanco Mariout has the advantage of resistance to powdery mildew, a fungus disease.

Rojo is a good variety for forage. It does not grow as fast as the Mariouts.

### Rye

Rye is resistant to yellow dwarf. During years of heavy yellow dwarf infestation, rye regrowth is faster and yields higher than barley and oats. When yellow dwarf does not occur, barley and oats produce more feed earlier than rye.

The varieties, Svalof Fourex and Merced, produce high yields in this area. Svalof Fourex is a coarser, leafier, and more productive variety than Merced.

### Wheat

Wheat is less productive for forage than barley or oats. Lerma Rojo, Nainari 60, and Pitic 62 are adapted to this use. Only rust-resistant wheat varieties should be used.

SAMPLE COSTS TO PRODUCE SMALL GRAINS FOR FORAGE  
Santa Barbara County - 1967

Based on Double Cropping with Silage Corn

Operations Costs

	Fuel & Repairs	Deprec.	Int.	Total
WT Wheel Tractor-60 hp	1.36	.66	.32	2.34
SWT Wheel Tractor-30 hp	1.00	.40	.20	1.60
C Chopper & Wagon	.94	1.59	.28	4.70

Man Labor: \$1.70/hour

Yield: 18 tons/acre - green weight

Operations	Hours/acre	Labor	Fuel & Repairs	Materials		Cost/acre	
				Kind and Amount	Cost	Sample	Your
<b>CULTURAL COST</b>							
Pre-irrigate	1.00	1.70		Water .4 ac. ft. @ \$5/ac. ft.	2.00		3.70
Disk 2x	WT 1.00	1.70	1.36				3.06
Plant	SWT .33	.57	.33	Seed - 100 lbs. @ \$5/cwt.	5.00		5.90
Fertilizer 2x				100 lbs. N @ .11/lb. N Appl. \$1	12.00		12.00
Border disk	WT .10	.17	.14				.31
Irrigate 2x	2.00	3.40		Water .8 ac. ft. @ \$5/ac. ft.	4.00		7.40
Repair equip. except tractor & harvester			2.50				2.50
Operating expenses				Office, car, oper. capital, ins., etc.	3.70		3.70
Rent				40% of \$60	24.00		24.00
Taxes				40% of \$10	4.00		4.00
<b>Total Cultural Cost</b>	<b>4.43</b>	<b>7.54</b>	<b>4.33</b>		<b>54.70</b>		<b>66.57</b>
<b>HARVESTING COST</b>							
Chopping Forage 2x (WT & C)	3.6	6.12	8.28	Based on chopping and hauling 5.0 tons/hour			14.40
<b>DEPRECIATION &amp; INTEREST</b>							
					<u>Deprec.</u>	<u>Interest 6%</u>	
			WT tractor - 4.7 hours		3.10	1.50	
			SWT tractor - .33 hour		.13	.07	
			C chopper & wagon - 3.6 hr.		5.72	1.01	
			Irrigation, bldgs., other equip. - \$80-10 years		8.00	2.40	
<b>Total Depreciation &amp; Interest</b>					<b>16.95</b>	<b>4.98</b>	<b>21.93</b>
<b>Total Cost</b>							<b>102.90</b>
<b>Cost per Ton</b>							<b>5.71</b>

## Harvesting

When chopped at a height between 14"-18", most of the cereal varieties will regrow and produce forage until late spring. Adequate fertilization and irrigation must be provided after each cutting to insure maximum production. Regrowth is poor if cut after head begins to form in the boot.

If only one harvest is made, research has shown there are two critical stages of maturity to harvest. Cut in the early flower stage for maximum feed value per acre. This occurs when about 1/10 of the heads are out of the boot. If cutting is delayed beyond the early flower stage, allow the crop to mature to the soft dough stage before cutting.

Harvesting in between the flower stage and the soft dough stage results in low quality forage.

If the forage is sold on a weight basis only, delay harvesting until the soft dough stage. The yield in pounds of dry matter per acre increases rapidly up to the soft dough stage.

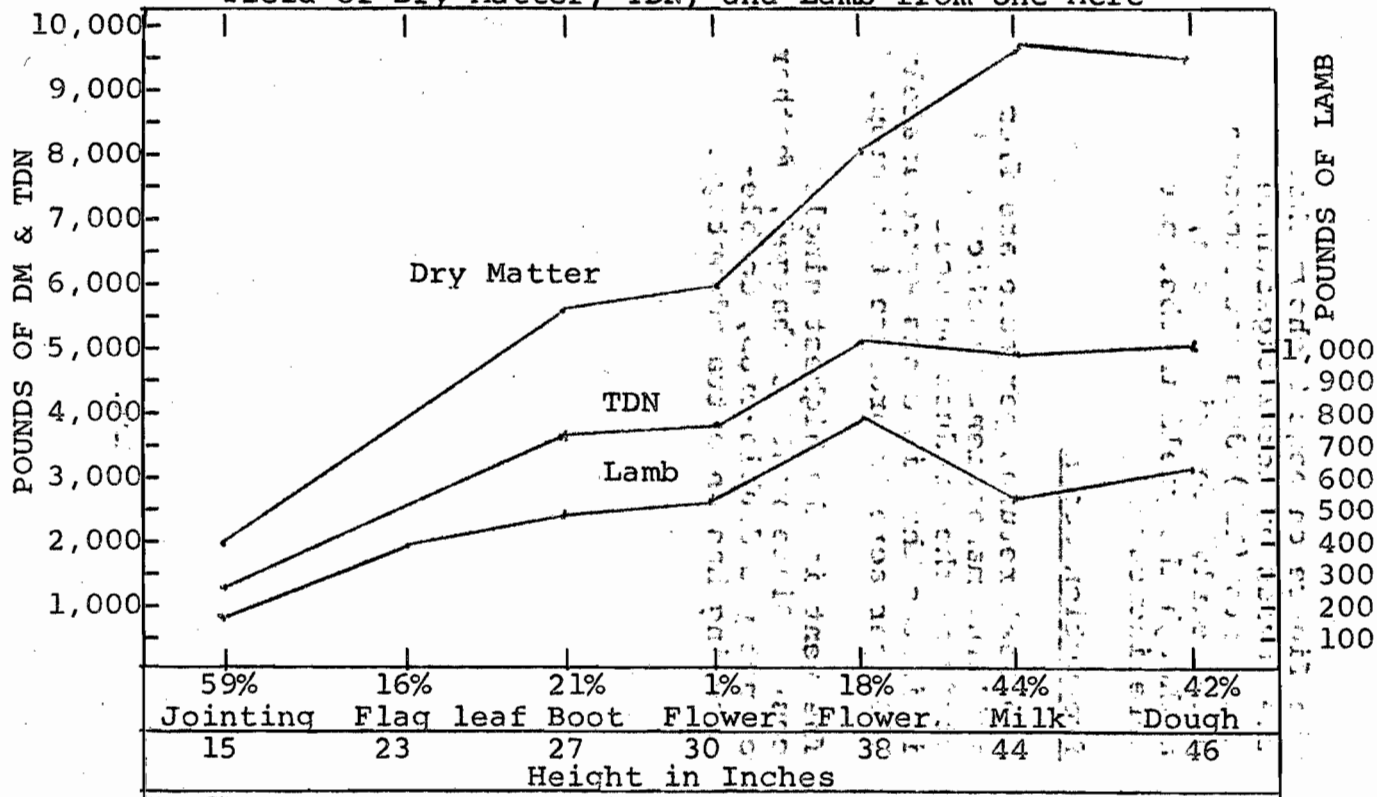
The figure on page 8 shows that the pounds of total digestible nutrients (TDN) does not increase after early flowering stage, although the yield in lbs. per acre increases.

### Production Costs

The best returns per acre are from skillful management practices. A study of the production costs indicates that it costs approximately \$100 per acre to produce this crop.

The rent is the highest single cost. Since rent is charged, whether or not you double-crop, double-cropping has an extra advantage.

Yield of Dry Matter, TDN, and Lamb from one Acre



Reference: California Agriculture 12(5):4,12,1958. "Feeding Value of Oat Hay", by J. H. Meyer, W. C. Weir, L. G. Jones and J. L. Hull.



PROFITS AS AFFECTED BY YIELD AND PRICE

Yield T/A	Sample Production Cost/acre	Value of Cereal Forage				
		\$4.00	\$5.00	\$6.00	\$7.00	\$8.00
		profit per acre				
12	94.60	-46.68	-34.68	-22.68	-10.68	+ 1.32
14	97.42	-41.42	-27.42	-13.42	+ 0.58	+14.58
16	100.16	-36.16	-20.16	- 4.16	+11.84	+27.84
18	102.90	-30.90	-12.90	+ 5.10	+23.10	+41.10
20	105.64	-25.64	- 5.64	+14.36	+34.36	+54.36
22	108.38	-20.38	+ 1.62	+23.62	+45.62	+67.62

WEB: sd  
6/15/67: 200c.

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