

UNIVERSITY OF CALIFORNIA  
COLLEGE OF AGRICULTURE

DEPARTMENT OF AGRONOMY  
FARM MANAGEMENT

NOTES OF  
METHODS AND COSTS  
CALIFORNIA CROP PRODUCTION

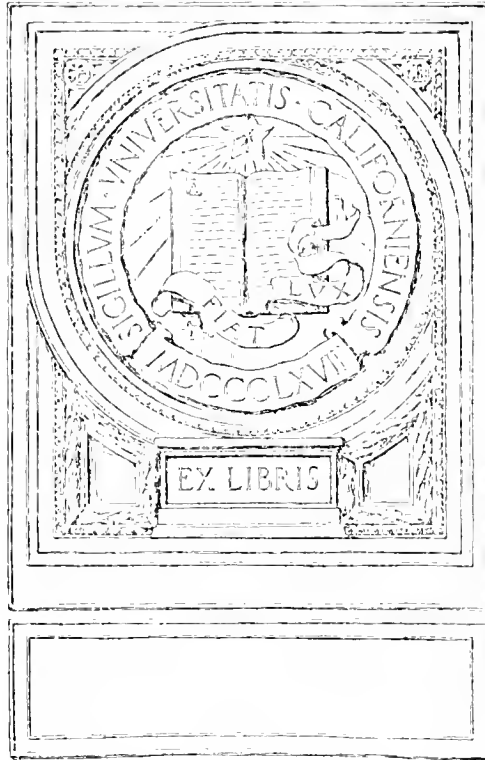
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TABLES SHOWING

Work Capacity of Farm Machines; Day's Work for Man  
and Crew; Costs of Equipment, Implements, Building  
and Fencing Material; Rate  
of Depreciation

*compiled by*

UNIVERSITY OF CALIFORNIA  
AT LOS ANGELES



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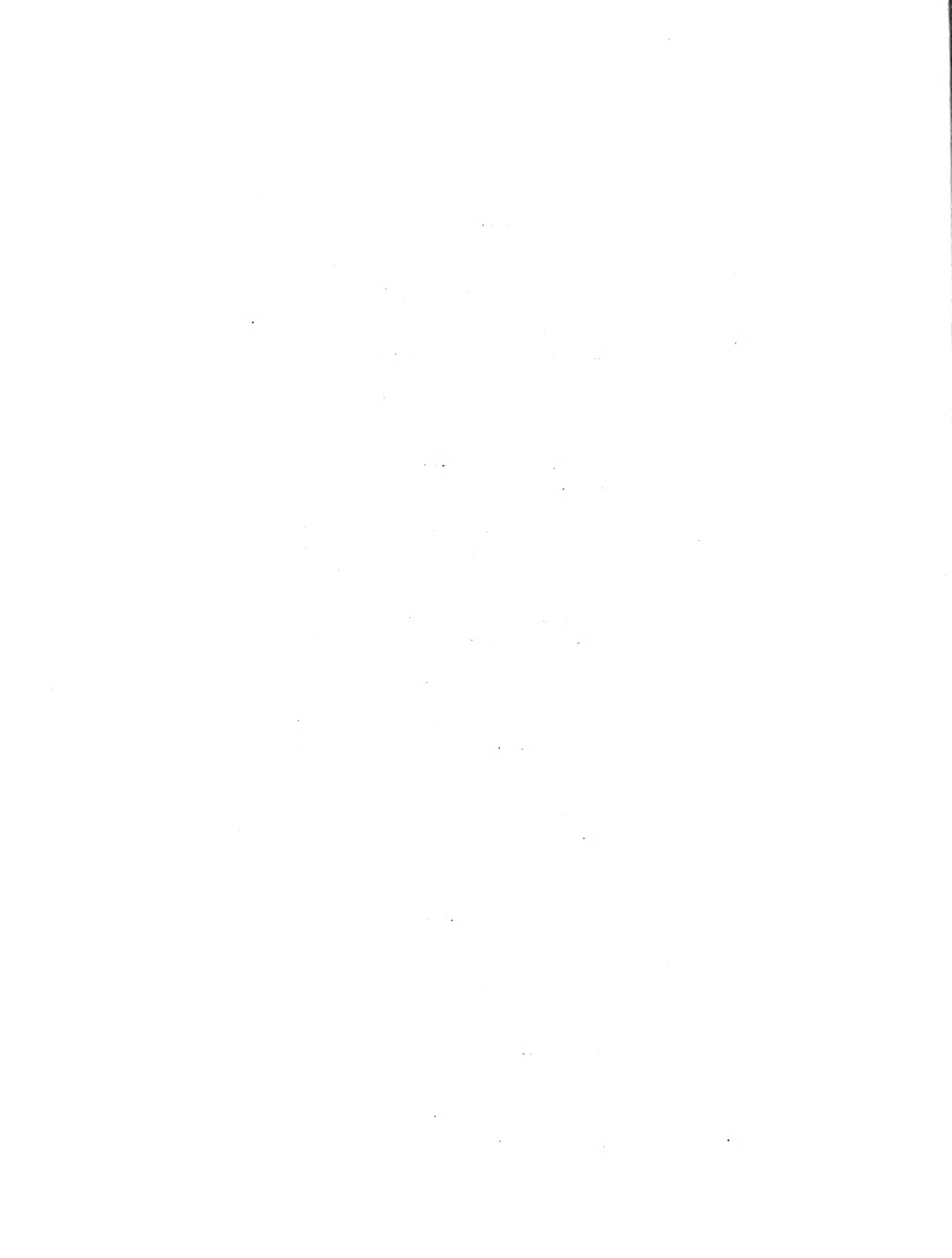
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### Acknowledgment

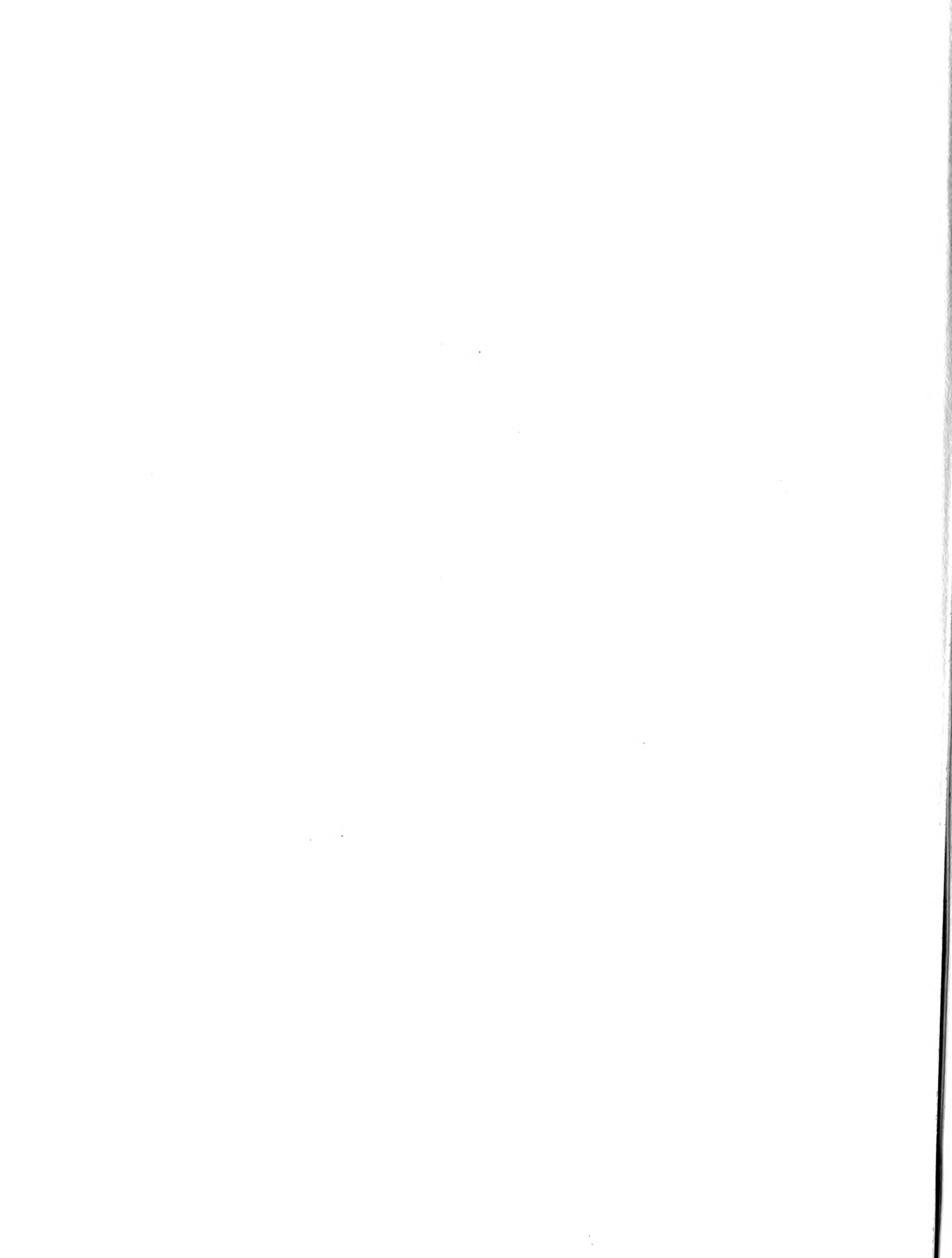
To list those to whom grateful acknowledgment is due for reviewing data, checking costs, and for valuable suggestions, would result in a formidable array of names ranging thru growers, fieldmen, marketmen, farm advisers, horticultural commissioners and members of the College of Agriculture of the University of California.

All are entitled to recognition and an expression of deep appreciation for the aid so cheerfully given. In many instances much time, effort and care was unstintedly forthcoming.

Following the collection of the original data, the requirements for growth and costs of production have been checked and rechecked to the extent of over 300 times for requirements and nearly 300 times for costs.

The data herewith presented represents the final summary of all who have worked with me in its compilation.

R. L. Adams



## PREFACE

In using the data contained in these pages, one should constantly bear in mind the following facts.

(1) The statements covering the requirements for crop production and the methods employed are statements of present practice in commercial production. They are not designed to indicate what should be done, but rather what is being done by men specializing in these crops.

(2) The statement of methods is included primarily to illuminate the cost data by showing the means employed to produce the crop which results in costs as given.

(3) As commercial production is largely confined to an environment well adapted to the crop, the statement of soil, climate and water tends to approach the best possible conditions available in the State, or at least conditions which past experience on the part of growers has indicated as specially suited to the crop under discussion.

(4) The cost data is a general estimate of present costs, secured by a wide inquiry into operations and expense. The cost data is not the result of a detailed survey.

(5) The facts and figures presented are offered merely as a possible guide to the prospective inexperienced farmer who needs a starting point. It will give some idea of possible returns and capital required to carry on a given business under usual conditions where the crop is grown commercially.

(6) One should understand fully that no one set of figures will apply to all conditions and these can only be taken as indicative.

(7) The data is confined entirely to California conditions.

(8) The classification of yields into good and usual indicates what it is possible to obtain. The average is not given since it conveys but little real information. It should be understood, however, that of 100 growers producing commercially, probably not more than 7 or 8 will secure good yields year in and year out. Thirty to 50 will fall into the usual class. The remaining produce yields either better than good or less than the usual.

(9) The cost data includes use of implements. It does not include depreciation of stock, improvements, or equipment, or cost of management.





(10) Taxes and insurance are based on the producing value of the land classified as average and good land. They include all equipment and improvements necessary for the carrying on of the business.

(11) "Age to self-sustaining crop" refers to period when crop receipts are sufficient to pay operating expenses.

(12) Prices given under "Value of Land" are governed by sales and not by the producing power of the land in the crop specified.

(13) "Market Value of Yield" is the price farmer receives at shipping point.



(Read preface)

REQUIREMENTS AND METHODS OF GROWING ALFALFA

Perennial

Time to Maturity - 1 year (1st cutting about 6 months from planting)

Life - 12 years, (range 2 - 30 years)

Soil Requirements -

Surface : Wide range from clay to fertile sand. Level, loose, open loamy soil best.

Subsoil : Continuous, deep, well drained, even in texture.

Depth : 5 feet or more. Should be alkaline in reaction and contain nodule-forming bacteria.

Climatic Requirements- Grown almost generally over California. Long growing season preferred.

Water Requirements- 30" (rainfall or irrigation) or more.

Calendar of Operations-

Varieties: Common (Chili)

Seeded : Seed tested for germination and purity (especially for dodder)

Time : Fall - October or November, or spring - January 15 - April 1, when no danger from severe frosts. Mostly February and March. Nurse crop usually omitted.

Quantity Seed: 18# (range 10 to 20#)

Method and Distance : Broadcast. Sometimes drilled. Harrowed, dragged or brushed in.

Irrigation :

After maturity, irrigated once or twice, depending upon the soil, between cuttings, April to October; irrigated thoroughly 1 time in winter (December or January) if soil is retentive.

Harvest-

When : When 1/10 in bloom or new shoots start. Usually every 4 - 6 weeks, beginning April 15, until December 1.

How : Mowed, raked, cocked, stacked, baled. Raked in windrows two hours to two days after cutting - put in cocks as soon as possible after raking; cured for two to ten days in cocks. Then baled from field or else stacked in field. Sometimes baled from stacks.



Yield -

Good : 8 tons  
Usual : 5 "

Commercial Sections-

Imperial Valley  
Modoc County (Seed - Cedarville)  
Sacramento Valley  
San Joaquin Valley  
Sonoma County (Seed - Cloverdale)  
Southern California Counties



COST OF PRODUCING ALFALFA

Value of Land-

Raw land-			
High -----	\$250.00	per acre	
Low -----	75.00	"	
Usual -----	150.00	"	
Developed land-			
High -----	400.00	"	
Low -----	125.00	"	
Usual -----	200.00	"	

Cost of Establishing- (Preparing land and Planting)

Price of irrigating system or water right (included in land value)			
Leveling, checking and ditching (\$8 to \$75)-	20.00	"	
Preparing seed bed, plowing and working down -----	5.00	"	
Cost of seed (18# @ 16 1/2¢) -----	3.00	"	
Seeding (broadcast) -----	.25	"	

Cost of Growing - (Annual)

Irrigating ( 25¢ - \$5) -----	3.00	"	
Water (\$1.50 - \$5) -----	2.00	"	
Upkeep of ditches, checks and gates-----	1.00	"	

Cost of Harvesting-

Mowing-----	.50	per cutting	
		per acre	
Raking -----	.25	"	
Cocking -----	.40	"	
Baling (\$1.25 to \$2.50) -----	1.75	per ton	
Hauling to cars (3 mile haul) -----	.75	"	

Market Value of Yield-

High -----	18.00	per ton	
Low -----	4.00	"	
Average -----	8.00	"	

Taxes and Insurance-

To maturity (1st year) -----	1.00	per acre	
After maturity-			
Average land -----	1.50	"	
Good land -----	2.00	"	





REQUIREMENTS AND METHODS OF GROWING THE ALMOND

Climatic Requirements-

Mild or hot climate, combined with freedom from high humidity (fogs) and frosts at time of blossoming, which in the case of almonds is early.

Soil Requirements- Loose, warm, light soil - sandy loams, of good depths (12') with sufficient slope to provide good air and water drainage. No alkali.

Water Requirements- Requires ample moisture and moisture retaining soils are chosen. Little irrigation is given.

Setting Out and Caring for Orchards to Maturity-

Distance Apart of Trees : 28' x 28'

Average Number per Acre : 55

Time of Planting Out : Jan, Feb. or March (preferably Feb.)

Age to Self-Sustaining Crop : 6 - 8 years

Age to Maturity : 10 years

Length of Profitable Life : Estimated 50 years

Calendar of Operations to Maturity :

Irrigation : If given, two irrigations by furrows - January and July. Sometimes a September irrigation is given.

Pruning : To form head.

Fertilizing : None

Spraying : February and May, or June - Sulphur for red spider.

Cultivation : March - plowed 10" deep, worked down. Cultivated six times, monthly, beginning in April.

Companion Cropping: Intercropped to berries, small fruits, beans, corn, and sometimes alfalfa. Usually discontinued after trees are 10 years old.

Most Popular Varieties:

IXL, Ne Plus Ultra, Nonpareil, Texas Prolific, Drake Seedling, Languedoc.

Caring for Bearing Orchards-

Calendar of Operations after Maturity:

Irrigation : If given, irrigated heavily by furrows in November, January and July, when necessary.

Spraying : February - lime-sulphur (if moss, scale, red spider or peach blight is present)  
May and June- sulphur for red spider.

Pruning : Some pruning every January or February to keep heads moderately open and low, thus assisting in harvest.



Calendar of Operations after Maturity (cont.)

Fertilizing : Cover crops if soil lacks body.  
 Cultivation : Plow deeply in February and after irrigating  
                   work down. Cultivate all summer from  
                   April to November at monthly intervals.  
 Fumigating : None  
 Thinning Fruit : None

Harvest -

Time : July - October  
 Method: By shaking trees and knocking off with poles 12' to 20'  
                   long, striking tree with square blow. Caught  
                   on duck sheets, used in pairs, 14' x 28' in  
                   size, or on two wagons made for the purpose.  
 Preparing for Market: Hulled by machine, dried in trays, sulphured  
                   (to bleach) and sacked.

% of Different Grades-

% of 1st grade runs very high.

Yields-

Good : 1200#  
 Usual : 700#

By-Products- None

Commercial Sections-

Butte County  
 Colusa     "  
 Contra Costa County  
 Glenn County  
 Riverside County  
 San Luis Obispo County  
 Solano County  
 Stanislaus County  
 Yolo County



COST OF PRODUCING THE ALMOND

## Value of Land-

Raw land-		
High -----	\$300.00	per acre
Low -----	100.00	"
Usual -----	150.00	"
Developed Orchards-		
High producing -----	800.00	"
Usual " -----	400.00	"

## Cost of Establishing Orchards-

Irrigation system or water right (included in purchase price of land.		
Clearing and leveling (\$10 - \$75) -----	20.00	"
Trees -----	10.00	"
Setting out -----	5.00	"
Replanting -----	1.00	"

## Annual Cost from Setting Out to Self-Sustaining Age-

Irrigation (\$3 - 6) -----	5.00	"
Pruning -----	3.00	"
Sulphuring -----	.50	"
Cultivating (\$6 - 12) -----	8.00	"
(Cultivation usually borne by intercrops)		

## Annual Upkeep after Maturity-

Irrigation (\$2.- 8 ) -----	6.00	"
Pruning -----	2.00	"
Spraying -----	3.00	"
Cultivation (\$6 - 12 ) -----	8.00	"
Cover crop -----	5.00	"

## Cost of Harvest-

Knocking, collecting and sacking -----	.02	per lb.
Hulling -----	.01	"
Bleaching and sacking -----	.001	"
Sacks (100# size) -----	.17	each
Hauling ( 5 miles) -----	1.50	per ton

## Market Value of Yield-

High -----	.20	per lb.
Low -----	.08	"
Average -----	.14	"

## Taxes and Insurance-

To maturity -----	3.00	per acre
After maturity-		
Average land -----	5.00	"
Good land -----	6.00	"









Calendar of Operations (cont.)

Fumigating : None  
 Thinning Fruit: May, when apples 3/4" in diameter.  
 Spraying : January - February - Lime sulphur, or oil emulsion.  
 April, 2 sprayings for codling moth and mildew (sometimes scab).

Harvest-

Time : Gravenstein - July 25 - August 15.  
 Newtown - September 15 - November 1.  
 Bellflower - September 1 - October 1.  
 Method : Picked by hand into lug boxes.  
 Preparing for Market: Sorted and packed into 44# boxes (net) each, apples being wrapped in papers for fancy fruit. 3 loose boxes gives two packed boxes.

% of Different Grades-

75% - 1st grade  
 15% - 2nd "  
 10% - culls

Yields-

Good : 400 packed boxes  
 Usual: 150 " "  
 Culls:  
 Good : 200#  
 Usual: 100#

By-Products- Culls sold for drying, cider and vinegar.

Commercial Sections-

El Dorado  
 Monterey  
 Nevada  
 Placer  
 San Bernardino  
 San Diego  
 Santa Cruz  
 Sonoma



COST OF PRODUCING THE APPLE

## Value of Land-

Raw land-		
High (with water) -----	\$600.00	per acre
Low   "   " -----	150.00	"
Usual  "   " -----	200.00	"
Developed land-		
High producing -----	1000.00	"
Usual   "   " ----- (\$500 - 1000)	800.00	"

## Cost of Establishing Orchards-

Irrigation system or water right included in the price of the land		
Clearing, grading and leveling land for planting (27 - 50) -----	20.00	"
Trees -----	9.00	"
Setting out -----	5.00	"
Replanting -----	1.00	"

## Annual Cost from Setting Out to Self-Sustaining Age-

Pruning -----	3.00	"
Whitewashing -----	1.00	"
Cultivating -----	7.50	"
(Cultivation usually carried by intercrops)		

## Annual Upkeep after Maturity-

Plowing and cultivating -----	8.00	"
Pruning and burning brush -----	10.00	"
Thinning fruit -----	12.00	"
Spraying (\$10 to 25 ) -----	15.00	"
Propping (\$1 - 6) -----	2.00	"

## Cost of Harvest-

Picking (per box) -----	.04	per box loose
Packing and warehouse charges -----	.23	per packed box
Hauling (2 mile haul) -----	.01	"

## Market Value of Yield (f.o.b.)

High -----	1.50	per box
Low -----	.50	"
Average -----	.90	"
Culls -----	6.00	per ton

## Taxes and Insurance-

To maturity -----	3.00	per acre
After maturity-		
Average land -----	8.00	"
Good land -----	10.00	"



REQUIREMENTS AND METHODS OF GROWING THE APRICOT

Climatic Requirements-

In general: Freedom from frosts at time of blooming, which occurs early. Warm growing season.

Soil Requirements- By proper selection of stock can be grown on wide range of soil - light sands to adobe, altho light soils are far preferable. Depth of 6' or more required.

Water Requirements- Natural rainfall often aided by irrigation.

Setting Out and Caring for Orchards to Maturity-

Distance Apart of Trees : 24' x 24'  
Average Number per Acre : 76  
Time of Planting Out : January, February or March  
Age to Self-Sustaining Crop : 5 years  
Age to Maturity : 8 years  
Most Popular Varieties : Royal, Blenheim, Henskirck, Newcastle  
Length of Profitable Life : Estimated 30 years.

Calendar of Operations to Maturity:

Irrigation : When given, twice by furrows - June and October or November. Sometimes a February irrigation given.  
Pruning : Pruned annually in January or February to form head. Sometimes in July.  
Fertilizing : Cover crops for soils lacking in body. Usually intercropped.  
Spraying : Not usually necessary.  
Cultivation : Plowed in October - November, cross plowed in February and March, harrowed twice, cultivated at 6 weeks' intervals from April to July. Usually borne by intercrop.  
Companion Cropping: Often intercropped to berries, small fruits, beans, beets, corn, and sometimes alfalfa. Usually discontinued after trees are 3 or 4 years old.

Caring for Bearing Orchards-

Calendar of Operations :

Irrigation : Twice, June or July and October, by furrows. Sometimes in February.  
Pruning : July - October. To head in, shape tree and mature fruit.  
Fertilizing : Cover crops grown when soil lacks body.



Calendar of Operations (cont.)

Cultivation : October - November plowed.  
 February- March, cross plowed.  
 Crop cultivated 6 times, from April to July.  
 Worked down into good condition.

Fumigating : None

Thinning Fruit: Thinned before pits harden if for shipping or  
 canning (usually late March or early April)

Spraying : November, lime sulphur. Borers if present,  
 removed from crowns once a year during  
 February or March. Sometimes distillate  
 or crude oil used. November - January for  
 scales.

Harvest-

Time : June - August 15.

Method : Picked by hand, or if for drying, shaken from tree to sheets.  
 Trees gone over 3 to 5 times.

Preparing for Market:

Green : Packed in 20# crates

Dried : Cut in half, pitted, sulphured, and dried on  
 trays in sun. Dry 5 to 1.

Canning : Delivered in lug boxes.

Yields-

	<u>Canning</u>	<u>Dried</u>	<u>Green</u>
Good :	8 tons	1 1/4 tons	500 crates of 20#
Usual :	4 "	3/4 ton	300 " " "

% of Different Grades-

Usually sold orchard run and not graded.

By-Products- Pits (San Jose) = 1/16th of the yield.

Commercial Sections-

Alameda	San Bernardino
Fresno	Santa Barbara
Kings	Santa Clara
Los Angeles	Solano
Orange	Ventura
San Benito	Yolo





COST OF PRODUCING THE APRICOT

## Value of Land -

## Raw land-

High (with water)-----	\$400.00	per acre
Low " "-----	150.00	"
Usual " "-----	200.00	"

## Developed Orchards-

High producing-----	1200.00	"
Usual "-----	800.00	"

## Cost of Establishing Orchards-

Irrigation system or water right included in price of land.

Clearing, grading and leveling land for planting (\$10 - 75)-----	20.00	"
Trees (@ 20¢)-----	15.00	"
Setting out (\$4 - 8)-----	5.00	"
Replanting-----	1.50	

## Annual Cost from Setting Out to Self-Sustaining Age-

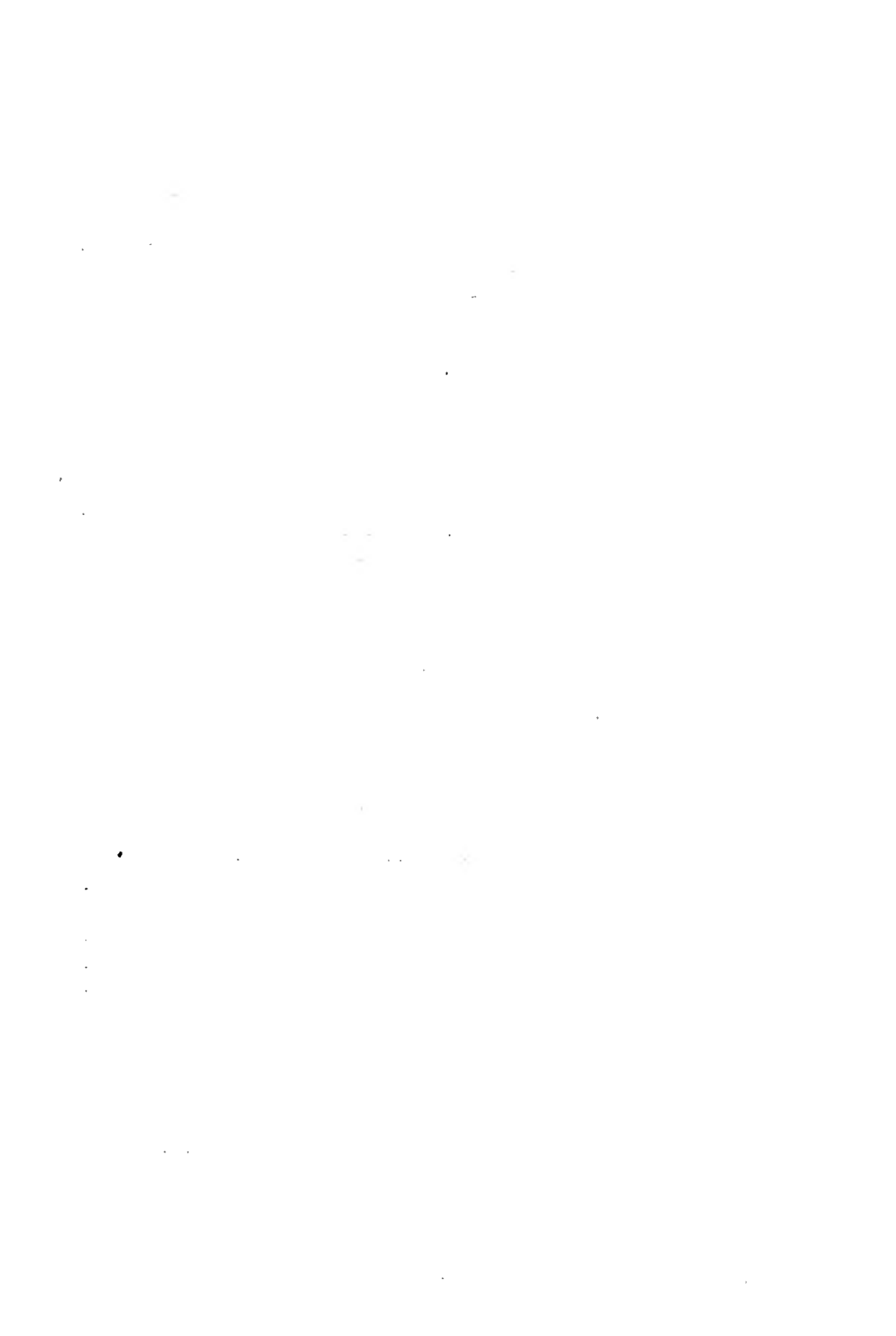
Cultivating-----	6.00	"
Irrigating (\$2 - 12)-----	6.00	"
Pruning-----	3.00	"
(Cultivation usually borne by intercrop)		

## Annual Upkeep after Maturity-

Cultivating-----	8.00	"
Pruning-----	12.00	"
Irrigation (\$2 - 12)-----	8.00	"
Spraying-----	7.00	"
Thinning (\$5 - 10)-----	7.00	"
Digging borers-----	6.00	"
Cover crop-----	2.00	"
Propping (labor)-----	1.00	"

## Cost of Harvest-

Picking (for green fruit)-----	.02	per 20# box
Packing and warehouse charges-----	.15	"
Hauling-----	.01	"
Picking for dried fruit (\$10 - 20)-----	15.00	per dry ton
Cutting "-----	20.00	"
Hauling to drier ( 3 miles)-----	1.00	"
Drying and sweat boxes (\$13 - 18)-----	15.00	"
Haul to ship (3 miles)-----	1.00	"
Picking (for canneries)-----	3.00	per ton
Hauling (3 mile haul)-----	1.00	"



Market Value of Yield (f.o.b.)

High-

Canneries -----	\$ 60.00 per ton
Dried -----	.15 per lb.
Green -----	1.50 per box

Low-

Canneries -----	20.00 per ton
Dried -----	.05 per lb.
Green -----	.50 per box

Average-

Canneries -----	25.00 per ton
Dried -----	.10 per lb.
Green -----	.75 per box

Pits (\$20 - 40) -----	25.00 per ton
------------------------	---------------

Taxes and Insurance-

To Maturity -----	3.00 per acre
-------------------	---------------

After Maturity-

Average land -----	5.00 "
Good land -----	10.00 "



REQUIREMENTS AND METHODS OF GROWING ASPARAGUS

Time to Maturity- 3 years

Life - 10 years (range 8 - 20 years)

Soil Requirements- Deep, warm, rich sandy alluvial or peat soil, where water table does not rise above 2' from surface.

Climatic Requirements- Plenty of atmospheric moisture and warm climate.

Water Requirements- Abundant moisture best supplied either naturally, although sometimes by irrigation. Excess should be avoided as this tends to keep soils cold and sour.

Calendar of Operations-

Preparing Bed : November - January, plowed 12" deep, reseeded and made into good seed bed by the use of the cultivator, harrow and disk.

Planting :  
Time : January - March  
Quantity : 3600 roots  
Method and Distance: Rows 8' to 9' apart, plants 1 1/2' in rows. Plant roots 8 - 12" deep in trenches, covering 4 to 6" deep, gradually filling in by subsequent cultivation as sprouts appear. Irrigate when needed on uplands plantations.

Care of Old Plantations:

February - Rows covered 1' deep and harrowed into fine shape.

February - May - Cultivated with special tools often enough to keep weeds down and to keep ridges up.

September - November - Tops cut and burned after heavy frost kills them.

Intercropping : Beans or potatoes are often raised between the rows of asparagus for the first two years.

Varieties-

Palmetto  
Conover Colossal  
Barr's Mammoth



Harvest-

Time : February - middle of July.

Method: Cut with flat chisel 1 1/2" wide, crated in 28" crates for eastern shipment, or placed in 50# lug boxes for cannery or packing house after washing and cutting butts.

Yields-

Good : 4,000#

Usual : 3,000#

% of Different Grades-

1st -- 75% segregated into white or green

2nd -- 25%

Commercial Sections-

Delta Islands.





COST OF PRODUCING ASPARAGUS

## Value of Land-

Raw land -		
High -----	\$300.00	per acre
Low -----	100.00	"
Usual -----	200.00	"
Developed land-		
High producing -----	400.00	"
Usual " -----	250.00	"

## Cost of the Crop-

Preparing land and planting-		
Preparing bed -----	10.00	"
Roots (3600 @ \$1.50 to \$5 per M) -----	7.00	"
Planting (dropping and covering) -----	5.00	"
Growing the crop -		
<u>1st year</u>		
Cultivation -----	5.00	"
Hoeing -----	5.00	"
Irrigation -----	None	
Mowing and burning tops -----	1.25	"
<u>2nd year</u>		
Cultivation -----	5.00	"
Hoeing -----	2.00	"
Ridging and leveling -----	6.00	"
Irrigation -----	None	
Mowing and burning tops -----	1.50	"
<u>After 2nd year</u>		
Cultivation and hoeing -----	6.00	"
Ridging up and leveling after crop is off -----	6.00	"
Burning tops -----	2.00	"
Harvesting-		
Cutting and washing -----	1.90	per cwt.
Hauling (3 miles) -----	.05	"
Crate (30#) -----	.25	per crate

## Taxes and Insurance-

1st year -----	2.00	per acre
2nd year -----	2.50	"
After 2nd year-		
Average land -----	2.50	"
Good land -----	4.50	"

## Market Value of Yields-

High- <u>1st grade</u>	Low- <u>1st grade</u>	Average- <u>1st grade</u>
Canneries-- 3¢	Canneries-- 2¢	• Canneries--2½¢
Shipments-- 5¢	Shipments-- 3¢	Shipments--4¢
<u>2nd grade</u>	<u>2nd grade</u>	2nd grade--
Canneries-- 2 1/2¢	Canneries-- 1¢	Canneries--1¼¢



REQUIREMENTS AND METHODS OF GROWING BARLEYTime to Maturity - 160 daysLife- AnnualSoil Requirements - Rich, fertile, well drained soil, varying from rather light to heavy in character, the latter being preferred. Will withstand considerable alkali. 2' or more in depth.Climatic Requirements- Withstands very dry, hot weather and will produce on limited rainfall.Water Requirements and Irrigation- If rainfall is less than 18" summer fallow every 2nd year. 25 - 30" of water is optimum. Only 6 1/2% of acreage irrigated.Calendar of Operations-Preparing Seed Bed : November - February plowed 4 - 8" deep.  
Disked or harrowed before planting.

## Planting :

Time : October to April

Quantity : 60 - 100# - broadcasted, or 35 - 60# drilled.

Method and Distance: Broadcasted and harrowed in, or drilled.

## Varieties:

Common, Chevalier

## Harvest :

When : April - August

How : By heading in fog belts; by combines in valley; by binders in special sections.

Operations: Threshed either from shock by stationary outfit or in combined harvester.

Yields-

	<u>Irrigated lands</u>	<u>Dry farmed</u>
Good :	1,500#	1,200#
Usual :	1,000	900

By-Products-

Kind : Stubble and baled straw

Amount: Stubble depends on how badly grain lodges and method of harvest-combine leaves most grain, binder least. Straw:6-8 bales

Where and for what sold:

Straw:35¢ per bale (costing 15¢ to bale)

Stubble: Sold or used for feed @ 25¢ per A. (range 10¢ to \$2.00)

Commercial Sections-

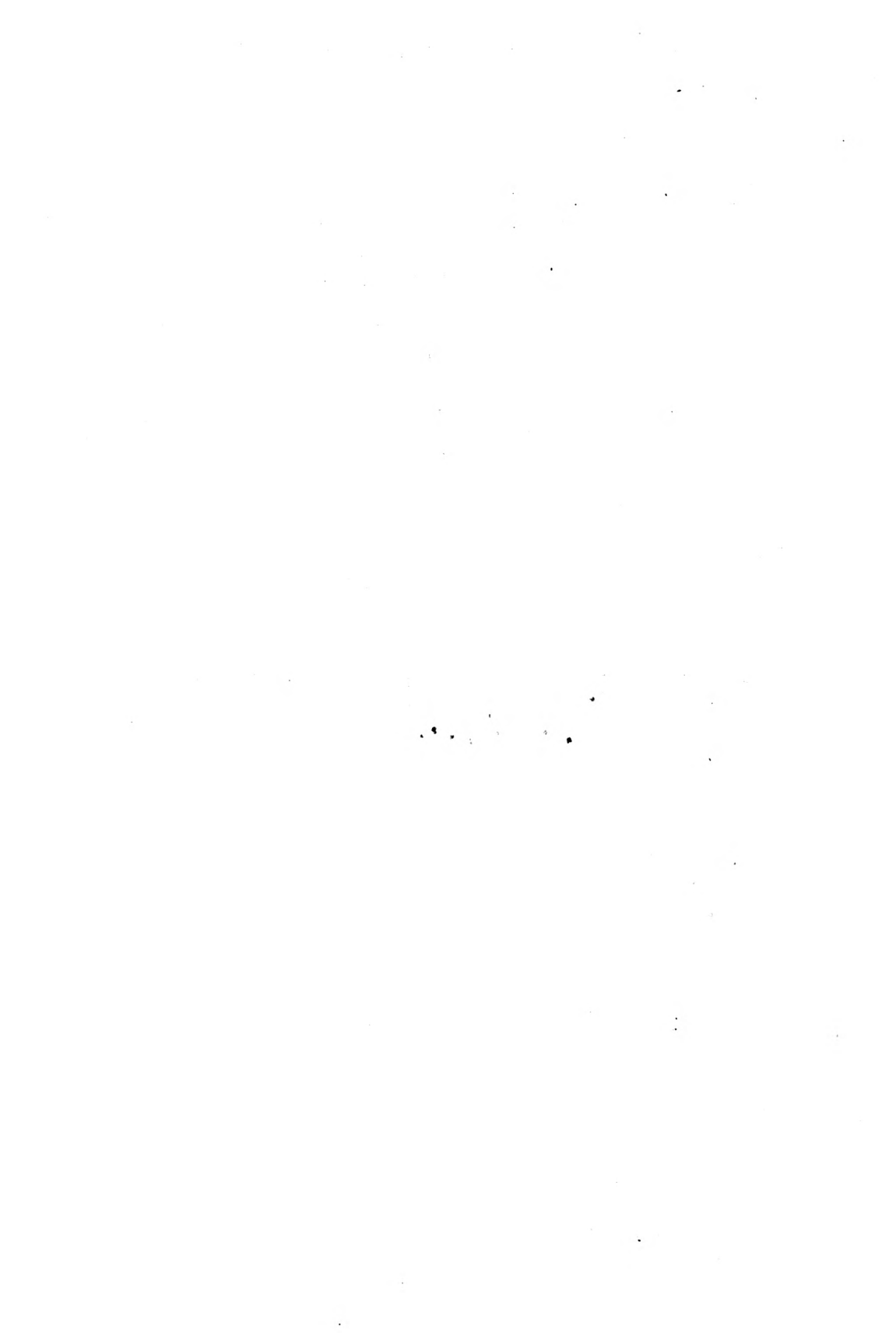
Imperial Co.

Monterey Co.

Merced Co.

San Joaquin Co.

Grown generally over the State



COST OF PRODUCING BARLEY

## Value of Land-

High -----	\$ 250.00	per acre
Low -----	40.00	"
Usual -----	125.00	"

## Cost of Crop-

## Preparing land and planting-

Plowing (for winter sowing)-----	1.50	"
"    (if summer fallowed)-----	2.50	"
Harrowing before seeding -----	.25	"
Cost of seed ( @ 1 1/2¢ ) -----	1.00	"
Treating seed -----	.04	"
Broadcasting -----	.15	"
Drilling -----	.25	"

## Growing Crop -

Harrowing after seeding -----	.35	"
-------------------------------	-----	---

## Harvest-

## Combined harvester-

12 sacks or less -----	1.75	"
12 - 25 sacks -----	2.00	"
25 - 35 " -----	3.00	"
35 sacks or over -----	5.00	"
Sacks -----	.08	per sack
Twine -----	.003	"
Hauling (10 miles) -----	1.00	per ton

## Taxes and Insurance-

Average land-----	1.25	per acre
Good land-----	2.00	"

## Market Value of Yield-

High -----	1.50	per cwt.
Low -----	.90	"
Average -----	1.00	"



REQUIREMENTS AND METHODS OF GROWING BEANS (BLACK EYES)

Time to Maturity- 130 days

Life- Annual

Soil Requirements-

Surface : Rich, sandy loam best, but will grow over wide range.  
Subsoil : Good moisture retainer.  
Depth : 2' or more, according to moisture retention qualities.

Climatic Requirements- Freedom from frost; warm, sunny days; warm nights.  
A hot weather plant.

Water Requirements-

Amount: Usually a dry land crop. Irrigation, however, is practiced in southern California, in portions of San Joaquin Valley, and when grown as second crop. Rusts if grown in presence of too much moisture.

Calendar of Operations-

Preparing Seed Bed : Plowed 6 - 8" in fall - fallowed during rainy season. Cultivated 4" in spring. Harrowed and worked into good seed bed- mulch maintained up to planting time by cultivating at ten day intervals.

Seeding:

Time: May and June  
Quantity Seed: 20" (range 10 - 35#)  
Method and Distance: Drilled in rows 28" to 36" apart, seed dropped 3 to 4" apart in row.

Care of Growing Crop: Cultivated from one to three times at 2 weeks' interval up to blossoming (July 15) using weed cutter type of cultivator. Hoed, if weedy, one to three times. If irrigated, water is given just after bloom has fallen. No cultivation given subsequent to blossoming.

Varieties: Black Eye

Harvest :

Time: August - September  
How: Vines cut with bean sled, left to dry, forked into piles for later threshing, or threshed direct from windrow. Put in bags, after threshing, holding 80 or 100#.





Yields-

Good : 1,200#

Usual : 800#

By-Products-

Kind : Straw

Where and for what sold: To dairymen for feed

To citrus growers for mulch and fertilizer.

Commercial Sections-

Butte County  
Imperial "  
Los Angeles"  
Orange "  
Sacramento "  
San Joaquin County  
San Luis Obispo "  
Santa Barbara "  
Stanislaus "  
Ventura "  
Yolo "  
Yuba "



COST OF PRODUCING BEANS (BLACK EYES)

## Value of Land-

High -----	\$ 400.00	per acre
Low -----	75.00	"
Usual -----	150.00	"

## Cost of the Crop-

## Preparing Land and Planting-

.. Plowing and working down (\$3.50 - 7.00)	5.00	"
Seed (@ 5¢) -----	1.50	"
Seeding (15 - 35¢) -----	.35	"

## Growing the Crop-

1 Hoeing -----	1.00	"
3 Cultivatings -----	1.50	"

## Harvest -

Cutting vines -----	.35	"
Cocking -----	.65	"
Threshing -----	.25	per cwt.
Sacks (good crop) -----	.10	each
Hauling (3 miles) -----	.08	per cwt.

## Taxes and Insurance-

Average land -----	1.00	per acre
Good land -----	2.00	"

## Market Value of Yield-

High -----	.06	per lb.
Low -----	.03	"
Average -----	.04	"



(Read Preface)

REQUIREMENTS AND METHODS OF GROWING BEANS  
(PINKS, LARGE WHITES, SMALL WHITES, BAYO)

Time to Maturity- 150 - 180 days

Life- Annual

Soil Requirements-

Surface : Good soil, free from excessive moisture, rich sandy loam best, but will grow over wide range.

Subsoil : Good moisture retainer.

Depth Surface Soil: 2' or more - the deeper soils for those poor in moisture retention qualities.

Climatic Requirements-

Freedom from frosts, severe winds and hot suns during growing period April 15 to September 15. Lessening of moisture in fall. Freedom from extreme heat at blossoming time. Require humid climate and do not thrive at any distance from coast or river.

Water Requirements-

Amount : Rainfall 15" or more. Usually a dry land crop. Irrigation not considered profitable, but necessary to conserve winter rainfall. Light irrigation, however, is practiced in southern California.

Calendar of Operations-

Preparing Seed Bed : Plowed 6 - 8" in fall - fallowed during rainy season. Cultivated 4" deep in spring. Harrowed and worked into good seed bed. Mulch maintained up to planting time by cultivating at 10 day intervals.

Seeding:

Time : April 15 - June 30  
Quantity of Seed : " 30#  
Method and Distance: Rows 20 - 30" apart, beans dropped  
4 - 6" apart in row.

Care of Growing Crop:

Cultivated three times at 2 weeks' intervals up to blooming (June 15) using weed cutter type of cultivator. If irrigated, water is given just after bloom has fallen. No cultivation subsequent to blossoming.



## Varieties:

Pink Beans - "Pink" only name given  
 Large White - Synonym : Lady Washington  
 Small " - " : Navy or Boston

Harvest -

When : After 2/3ds of pods turn ripe - August 25 - October 1.

How : Vines cut with horse knife (bean sled drawn by 2 horses)  
 forked into small piles, left one to three weeks,  
 until moisture evaporates, thresh by contract  
 (harvester furnishes everything but hay for his  
 horses) put in bean bags holding 80# or 100#.

Yields-

Good : 1,500#  
 Usual : 1,000#

By-Products-

Kind : Straw

Where and for what sold: To dairymen for feed  
 To citrus growers for mulch and fertilizer.

Commercial Sections-

Pink : Grown in all bean sections of Sacramento, San Joaquin  
 Valley and southern coast counties.

Large White : Contra Costa, Solano, Monterey, San Luis Obispo.

Small White : Monterey, San Luis Obispo, Santa Barbara.

Bayo : San Joaquin and Sacramento.





COST OF PRODUCING BEANS  
(PINK, LARGE WHITE, SMALL WHITE, BAYO)

## Value of Land-

High -----	\$ 400.00	per acre
Low -----	75.00	"
Usual -----	150.00	"

## Cost of the Crop-

## Preparing Land and Planting-

Plowing and working down -----	3.50	"
Cost of seed (30# @ 5¢) -----	1.50	"
Seeding -----	.35	"

## Growing the Crop-

2 Cultivatings -----	1.00	"
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## Harvest -

Cutting vines -----	.35	"
Cocking -----	.65	"
Threshing -----	.25	per cwt.
Sacks -----	.10	each
Hauling (3 miles) -----	.05	per cwt.

## Market Value of Yield-

High -----	.06	per lb.
Low -----	.03	"
Average -----	.04	"

## Taxes and Insurance-

Average land -----	1.50	per acre
Good land -----	2.50	"



REQUIREMENTS AND METHODS OF GROWING BEANS (LIMA)

Time to Maturity - 110 - 130 days

Life- Annual

Soil Requirements-

Surface : Good loam or alluvial soil, free from excessive alkali  
best, but will grow on wide range from fertile sand  
to adobe.

Subsoil : Good moisture retainer.

Depth : 4' or more

Climatic Requirements-

- (1) Freedom from scorching suns.
- (2) Fogs required to temper atmosphere.
- (3) Dry weather in fall to insure ripening.

Water Requirements-

Amount: Practice of irrigation still in infancy, but increasing.

When needed: June 15 to July 10.

Calendar of Operations-

Preparing Seed Bed : Plowed 8 to 14" November or December. March -  
April worked down with clod masher, "Cyclone"  
chisel 8" deep, (three times), weed knife used  
ahead of the planter. March replowed, or better,  
cultivated and harrowed. "Cyclone" weeder used  
until planting time at 10 day intervals. Ringroll  
to bring up moisture before planting.

Seeding:

Time : April 25 - May 20

Quantity Seed : 50"

Method and Distance: Seed dropped 8" in rows, rows 30,  
32, or 36" apart.

Care of Growing Crop :

Cultivated with weeder knife every 10 days during May and  
June. Hoed from three to five times (June)

Harvest:

When : September 1 - October 15.

How : Vines cut with horse knife (bean sled drawn by 2 horses)  
forked into small piles, left 1 - 3 weeks until  
moisture evaporates, threshed by contract (harvester  
furnishing everything but hay for his horses. Put  
in 80# or 100# sacks.



Yields-

Good : 2,000#

Usual : 1,600#

By-Products-

Kind : Straw

Where and for what sold: To dairymen for feed.

To citrus growers for mulch and  
fertilizer.

Commercial Sections-

Orange County

San Diego County

Santa Barbara County

Ventura County



COST OF PRODUCING BEANS (LIMAS)

## Value of Land-

High -----	\$1500.00	per acre
Low -----	200.00	"
Usual -----	400.00	"

## Cost of the Crop-

## Preparing Land and Planting-

Fall plowing -----	2.00	"
Winter working -----	4.00	"
Cost of seed (50# @ 6¢) -----	3.00	"
Seeding -----	.30	"

## Growing the Crop-

Cultivating 5 times -----	2.50	"
Hoeing, 1 time ( \$1 - \$12 )-----	5.00	"

## Harvest -

Cutting vines -----	.35	"
Cocking -----	.65	"
Threshing -----	.30	per cwt.
Sacks -----	.10	each
Hauling (3 miles) -----	.08	
Recleaning (weighing, etc.) -----	.08	per sack

## Market Value of Yield-

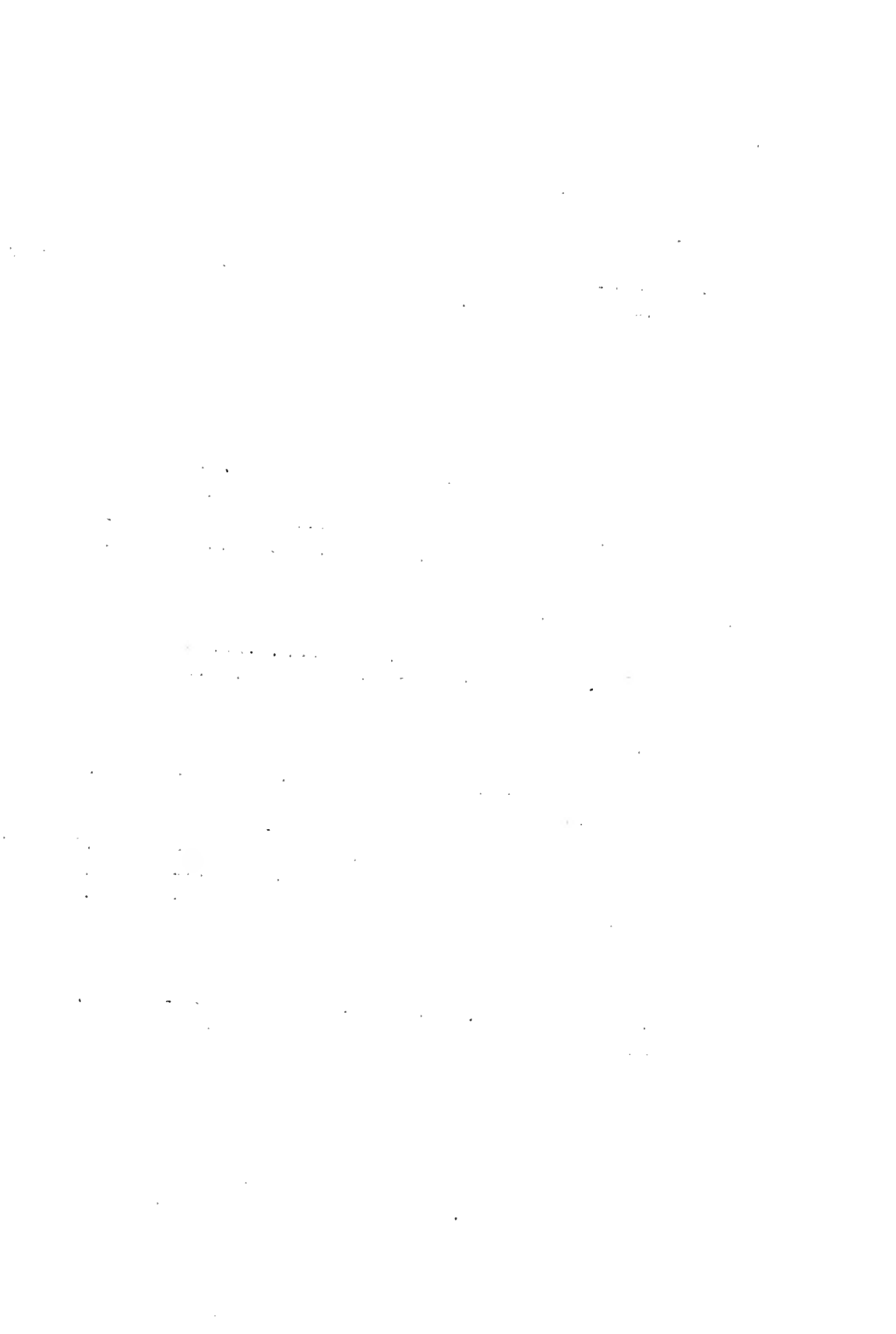
High -----	.07	per lb.
Low -----	.04	"
Average -----	.04	1/2"

## By-Products-

Straw ( weight equal to beans, average 1 ton -----	5.00	per acre
Cost to handle -----	2.50	"

## Taxes and Insurance-

Average land -----	4.00	per acre
Good land -----	6.00	"





(Read Preface)

REQUIREMENTS AND METHODS OF GROWING THE TEPARY BEANTime to Maturity- 85 - 140 daysLife- AnnualSoil Requirements-

Surface : Good soil, free from excessive moisture or manuring. Rich, sandy loam best, but will grow over a wide range.  
 Subsoil : 2' or more in depth; good moisture retainer.

Climatic Requirements- Will stand sun and heat even at blossoming time.Water Requirements-

Will stand drouth, but good moisture is needed to insure a heavy crop. Over-irrigation of growing crop not desirable as prolongs period of ripening. Small leaf surface permits Tepary to mature a crop on moisture insufficient for other beans.

Calendar of Operations-

Preparing Seed Bed: Plowed 4" or 5" in spring after heavy rains are over, or if put in after grain hay, plowed dry, irrigated and disked, or stubble irrigated and plowed.

## Seeding:

Time: April - July 31.

Quantity of Seed : 15 - 18#

Method and Distance: Seed dropped 3 - 8" apart in rows 24" - 36" apart, and not cultivated. Sometimes planted in rows 18" apart after grain.

## Care of the Growing Crop:

Cultivated in May and June. Kept clear of weeds.

## Harvest:

When : When ripe

Method: Early plantings are pulled by hand, late plantings are cut with horse knife (bean sled drawn by 2 horses) forked into small piles, left 1 to 3 weeks until moisture evaporates, threshed by contract in machines or by horses; put in bags holding 80 or 100#.



Yields-

Good : 1,500#

Usual : 800#

By-Products-

Bean straw - Sold for dairy or cattle feed, or for fertilizer.

Commercial Sections-

Butte	County
Colusa	"
Fresno	"
Glenn	"
Imperial	"
Madera	"
San Diego	"
Sutter	"
Tulare	"
Yolo	"

NOTE:

Because of its quick maturing, two crops a year are possible, or the Tepary may follow other early maturing crops.



COST OF PRODUCING THE TEPARY BEAN

Value of Land-

High -----	\$150.00	per acre
Low -----	60.00	"
Usual -----	100.00	"

Cost of the Crop-

Preparing Land and Planting-

Plowing and working down -----	3.50	"
Seed ( @ 6¢ ) -----	1.00	"
Seeding -----	.35	"

Growing the Crop-

3 Cultivations -----	1.50	"
----------------------	------	---

Harvest-

Pulling by hand (\$3 - 4) -----	3.50	"
Cutting Vines -----	.40	"
Cocking -----	.65	"
Threshing -----	.25	per cwt.
Sacks (6 - 12¢) -----	.10	each
Hauling ( 3 miles) -----	.05	per cwt.

Taxes and Insurance-

Average land -----	1.00	per acre
Good land -----	1.25	"

Market Value of Yield-

Average -----	.03	per lb.
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REQUIREMENTS AND METHODS OF GROWING CABBAGE

Time to Maturity-    October planting in field; 150 days  
                          January        "        "        "        , 120 "

Life-                    Annual

Soil Requirements-    Heavy soil, retentive of moisture, and at least 4' in depth. Will tolerate some alkali.

Climatic Requirements- Best cabbage grown in or during cool part of year.

Water Requirements- Abundant moisture from rainfall or irrigation. Cabbage must be forced from time of planting to maturity, or seed production will result, thus ruining the crop for marketing.

Calendar of Operations-

Preparing for Planting : August - January, manured, plowed 12" deep and worked down into shape.

Planting :

Time : Valley--September -February; Coast--January - December.  
Quantity: 7,000 plants.  
Method and Distance: Plants set out in rows 30 - 36" apart, and 1 1/2 - 2' in the row.

Care of Growing Crop:

After planting out, cultivated thoroughly once every two to four weeks until leaves cover the ground. Irrigated if needed, - usually 2 to 4 irrigations being applied.

Varieties:

Early Winningstadt  
Early Flat Dutch  
Late " " "  
Early York  
San Francisco

Harvest:

Time : July planting : October - November  
Winter " : April - July  
Coast : January - December

Method : Heads cut, trimmed, shipped in crates of 135 to 200#, or hauled loose for local trade.





Yields-

Good : 20 tons

Usual : 12 "

% of Different Grades-

#1 -- 75%

#2 -- 25%

Commercial Sections-

Los Angeles County

Orange "

Sacramento "

San Joaquin "

San Mateo "

Delta Islands.



COST OF PRODUCING CABBAGE

Value of Land-		
High -----	\$ 800.00	per acre
Low -----	150.00	"
Average -----	200.00	"
Cost of the Crop-		
Preparing Land and Planting-		
Manure -----	30.00	"
Preparing for planting -----	5.00	"
Plants-		
Home grown -----	4.00	"
Purchased -----	20.00	"
Planting -----	5.00	"
Growing the Crop-		
Cultivating (\$1 - 10) -----	5.00	"
Hoeing -----	6.00	"
Irrigating (4 times) -----	12.00	"
Harvest-		
Cutting, trimming, sorting, and packing (\$2 - 4) -----	3.00	per ton
Package -----	.25	each
Hauling (5 miles)-----	.75	per ton
Taxes and Insurance-		
Average land -----	2.00	per acre
Good land -----	2.50	"
Market Value of Yield (f.o.b.)		
High-		
1st grade -----	40.00	per ton
2nd grade -----	20.00	"
Low -		
1st grade -----	4.00	"
2nd grade -----	2.50	"
Average-		
1st grade -----	15.00	"
2nd grade -----	10.00	"



REQUIREMENTS AND METHODS OF GROWING THE CHERRY

Climatic Requirements- Warm sunny weather, freedom from excessive heat, and heavy late spring rains.

Soil Requirements - Deep, rich, well drained soils, retentive of moisture. No clay. Preferably sediments.

Water Requirements- Plenty of moisture with water table below 15'.

Setting Out and Caring for Orchards to Maturity-

Distance Apart of Trees : 30' x 30'  
Average Number per Acre : 48  
Time of Planting Out : January, February, or March  
Age to Self-Sustaining Crop: 8 years  
Age to Maturity : 12 years  
Length of Profitable Life : Estimated 40 years  
Most Popular Varieties : Napoleon (Royal Ann), Black  
Tartarian, Bing, Lambert

Calendar of Operations :

Irrigation : Not much given, foothill section an exception when usually given during June, July and August.  
Pruning : Pruned to form low head and develop tree.  
Fertilizing : None  
Spraying : February - Lime sulphur if necessary  
Cultivation : Plowed, cross plowed and worked down into shape, cultivated 6 times at monthly intervals, beginning in April.  
Companion cropping: Intercropped to berries, small fruits, grain, beans, beets, corn, and sometimes alfalfa. Usually discontinued after trees are 4- 6 years old.

Caring for Bearing Orchards-

Calendar of Operations :

Irrigation : Not much irrigation done, except as noted above.  
Spraying : February - lime sulphur.  
Pruning : Only to keep trees shapely, December - January  
Fertilizing : Sometimes manure put on  
Cultivating : Plowed, cross plowed and worked into shape. Cultivated twice ammonth until end of July.  
Fumigating : None  
Thinning Fruit:Not done.



Harvest-

Time : May 20 to July 1

Method : Picked by hand. Trees gone over 4 to 6 times.

Preparing for Market: Packed into 10# boxes by hand for eastern shipment, or in 20 - 40# boxes loose for local trade, or hauled in lugs to cannery.

% of Different Grades-

	Cannery Districts (i.e. Napa Valley.)	Shipping Districts ( i.e. Suisun Valley)
Packed -----	10	70
Cannery -----	70	10
Culls (cracked and pecked)	20	20

Yields-

Good : 4 tons

Usual : 2 tons

Commercial Sections-

Alameda  
Napa  
Placer  
Sacramento  
Santa Clara  
Solano  
Sonoma

NOTES:

Crop easily damaged.

Cherries are risky, but exceedingly profitable on the right land.





COST OF PRODUCING THE CHERRY

## Value of Land-

Raw land-		
High -----	\$800.00	per acre
Low -----	200.00	"
Usual -----	600.00	"
Developed orchards-		
High producing -----	2000.00	"
Usual " -----	1000.00	"

## Cost of Establishing Orchards-

Irrigation system or water right included in land value

Clearing and leveling -----	10.00	"
Trees -----	10.00	"
Setting out -----	4.00	"
Replanting -----	1.00	"

## Annual Cost from Setting Out to Self-Sustaining Age-

Plowing and cultivating (usually borne by intercrop) -----	6.00	"
Spraying -----	1.00	"
Pruning -----	3.00	"
Irrigation -----	6.00	"

## Annual Upkeep after Maturity-

Cultivation -----	8.00	"
Spraying -----	3.00	"
Pruning -----	2.00	"
Irrigation -----	8.00	"

## Cost of Harvest-

## For Local- (10# box)

Picking -----	.15	per box
Packing (loose) -----	.03	"
Package -----	.09	"
Hauling ( 2 miles) -----	.01	"

## For East (10# box)

Picking -----	.15	"
Packing and warehouse expense -----	.10	"
Package -----	.15	"
Hauling and loading (2 miles) -----	.01	"



## For Cannery-

Picking -----	\$30.00	per ton
Hauling (2 miles) -----	1.00	"

## Market Value of Yield (f.o.b.)

## High -

Cannery -----	.06	per lb.
Eastern shipments-----	.13	"
Local " -----	.08	"

## Low -

Cannery -----	.04	"
Eastern shipments -----	.04	"
Local " -----	.04	"

## Average -

Cannery -----	.05	"
Eastern shipments -----	.11	"
Local " -----	.06	"

## Taxes and Insurance-

To Maturity -----	6.00	per acre
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## After Maturity -

Average land -----	10.00	"
Good land -----	15.00	"



REQUIREMENTS AND METHODS OF GROWING INDIAN CORN

Time to Maturity- 130 - 160 days

Life- Annual

Soil Requirements-

Surface: Black loam or river bottom sediment, 3' or more. Well drained, well supplied with organic matter and plant foods.

Climatic Requirements-

Freedom from frost and hot drying winds; warm nights, continuous growing weather, ample sunshine, freedom from intense heat at time of tasselling.

Water Requirements and Irrigation-

Ample moisture from rainfall or irrigation, equivalent to at least 30".

Calendar of Operations-

Preparing Seed Bed : Fall - plowed 8"  
March- plowed 6" and worked down into seed bed.

Planting:

Time : April 1 - May 1  
Quantity: 18# for silage  
12" " seed

Method and Distance: In hills 3 1/2' apart, or in rows 3 1/2' apart - seed 1" deep, 6- 8 " apart for silage, 10 - 12" for seed.

Care of Growing Crop: Cultivated 6 - 8" as soon as rows can be seen. Cultivated every 2 weeks, gradually reducing depth. Irrigated by furrows in July when corn is tasselling.

Varieties:

Leaming, Hickory King, Old River White, California Semi-Dent, Red Cob, Yellow Dent



## Harvest :

When : Soiling - July 1 - September 1 (Green growing corn)  
 Silage - August 15 - September 15  
 Grain - October 1 - November 1  
 Fodder - October 15- November 15 (dry, mature corn)

## How :

Silage -  
 Cut by hand or machine in field, hauled to silo, cut and blown into silo.

Grain -  
 Husked by hand in field from standing stalks. Thrown into wagon.

Fodder-  
 Cut and hauled as needed, or cattle turned in.

Soiling-  
 Cut and hauled as needed, or cattle turned in.

Yields-

	<u>Silage</u>	<u>Grain</u>	<u>Dry Fodder</u>	<u>Soiling</u>
Good :	12 tons	2000#	9 tons	8 tons
Usual :	8 "	1000#	6 "	5 "

By-Products-

Kind : Husks from Old River White varieties.  
 Amount : 200#  
 Where and for what sold: Tamale wrappers

Commercial Sections-

Los Angeles County  
 Mendocino "  
 Riverside "  
 Sacramento "





COST OF PRODUCING INDIAN CORN

Value of Land-		
High -----		\$800.00 per acre
Low -----		100.00 "
Usual -----		200.00 "
Cost of the Crop-		
Preparing land and planting-		
Fall plowing -----	1.75	"
Spring plowing -----	1.25	"
Working down into seedbed -----	1.75	"
Seed ( @ 2¢ ) -----	.25	"
Planting -----	.35	"
Growing the Crop-		
Cultivating and furrowing -----	2.00	"
Water -----	1.50	"
Applying water -----	.75	"
Hoeing -----	2.00	"
Harvest-		
For silage-		
Cutting by hand -----	2.00	"
Hauling -----	3.00	"
Filling silo -----	3.00	"
For grain-		
Husking from standing corn -----	.03	per bushel
Hauling (5 miles) -----	.50	per ton
Shelling -----	.10	per bushel
Sacks -----	.10	each
For Fodder-		
Cutting by hand -----	1.75	per acre
Shocking -----	1.25	"
Hauling (1 mile) -----	1.00	"
For Soiling-		
Cutting by hand -----	2.00	"
Hauling (1 mile) -----	1.00	"
Taxes and Insurance-		
For average land -----	2.00	"
" best land -----	3.00	"
Market Value of Yield-		
Grain-		
High -----	1.75	per cwt.
Low -----	1.55	"
Average -----	1.65	"
By-Products-		
Fodder from husked corn -----	1.50	per ton (10 t. per acre)
Husks (Old River White) -----	.04	per lb.
Cutting and hauling -----	2.50	per acre



REQUIREMENTS AND METHODS OF GROWING COTTON

Time to Maturity- 7 - 9 months.

Life- Annual or perennial, according to how handled.

Soil Requirements- Responds to good soil conditions, doing best on silt loams, altho all good soils do well; 4' or more in depth.

Climatic Requirements- Dry weather during growing season, high temperature for 4 or 5 months, and lack of rains at time of maturity.

Water Requirements and Irrigation- Plenty of moisture required throughout growth with avoidance of over-irrigation.

Calendar of Operations-

Preparing Seed Bed : January - March land irrigated, plowed, disked and listed into rows 42" apart, harrowed and dragged into a seed bed.

Planting:

Time : March - June (April 15, - May 15 best)

Quantity: 20- 30#

Method and Distance: Rows 3 1/2 - 4 ' apart

Care of Growing Crop:

Crop thinned to 1 plant every 12 to 18" (June) when plants are 6 - 8" tall. Crop irrigated 4 - 8 times by furrows from April to October. Crop cultivated 3 - 5 times, beginning in April, and continuing to last of June.

Varieties: Durango (medium long), Mebane Triumph (short)

Harvest : When: September - February

How : Picked by hand. Shipped to public gin for ginning and baling into 500# bales.

Yields-

Good : 750# lint

Usual : 400# "

By-Products-

Kind : Cotton seed and linters (fuzz from seed)

Amount : Seed = 70% of yield figures, linters 80# per ton

Where and for what sold: Stock feed and oil

Commercial Sections-

Imperial and Riverside Counties.

NOTE: Ratio of lint to seed cotton varies from 28 to 33%. 1500# seed cotton required to 1 bale of lint. A bale of lint weighs about 500#.



COST OF PRODUCING COTTON

Value of Land-

High -----	\$ 200.00	per acre
Low -----	75.00	"
Usual -----	125.00	"

Cost of the Crop-

Preparing land and planting-

Irrigating -----	.50	"
Plowing and working down (\$3 - 6) -----	5.00	"
Seed ( @ 2 1/2 - 5¢) -----	1.00	"
Sowing ( 35 - 50¢) -----	.40	"
Replantingskips -----	1.00	"

Growing-

Thinning with hoes -----	2.00	"
Cultivating -----	2.50	"
Irrigating -----	2.00	"

Harvesting-

Picking (75¢ - \$1.25) -----	1.00	per 100# seed cotton
Hauling (5 miles) -----	1.50	per ton
Ginning -----	.60	per cwt. of lint
Baling and ties -----	1.50	per bale

Taxes and Insurance-

Average land -----	1.25	per acre
Good land -----	1.75	"

Market Value of Yield (Fiber)

	<u>Durango</u>	<u>Short Staple</u>
High -----	.17 per lb.	.14 per lb.
Low -----	.09 "	.05 "
Average -----	.14 "	.11 "

By Products-

Seed ( \$15 - 20) -----	\$ 15.00	per ton
-------------------------	----------	---------



REQUIREMENTS AND METHODS OF GROWING THE FIGClimatic Requirements-

For dried figs: Hot dry atmosphere and warm nights. Temperature to remain above 18° at all times. Sunshine required to prevent sour figs.

For fresh figs: Can be grown under wider range.

Soil Requirements-

Surface : Rich loam soils of good moisture holding capacity best, altho will succeed on wide range of types.

Subsoil : No rock or hardpan. Ample lime.

Depth : 5' or more. (There is close interrelation between ground water and souring.)

Water Requirements- Plenty of moisture required without excess. Excess causes trouble in drying; lack reduces size of figs.

Setting Out and Caring for Orchards to Maturity-

Distance Apart of Trees : 30' x 30' Smyrna; 40' x 40' Adriatic; 50' x 50' Mission. Majority planted along avenues.

Average Number per Acre : 48, 27 or 17.

Time of Planting Out Trees : February - March

Age to Self-Sustaining Crop: 6- 8 years

Age to Maturity : 12 - 18 years.

Most Popular Varieties

for Drying : Smyrna (Calimyrna), Adriatic, Mission

Length of Profitable Life : Estimated 75 years.

Calendar of Operations to Maturity:

Irrigation : If given, by furrows - May- June.

Pruning : Pruned annually to form head.

Fertilizing : None

Spraying : None

Cultivating : Plowed, January- March, worked down into good condition; or cultivated as required for companion crops.

Companion Cropping: Not much done, interplanted occasionally with grapes, sorghums, grain or beans, if water and fertility is available. Can be practiced for four years.





Caring for Bearing Orchards-

## Calendar of Operations :

Caprification : (Smyrna) March and June  
 Irrigation : If given, by furrows - May -June  
 Pruning : To thin out - November-February.  
 Fertilizing : A little haphazard commercial fertilizing done.  
 Cultivating : March -April, plowed to kill weeds and harrowed  
 down. Cultivated 4 times. Board smooth  
 before crop ripens.  
 Fumigating : None  
 Thinning Fruit: Not done  
 Spraying : None unless for moss in spring, using lime  
 Bordeaux or crude oil emulsion.

Harvest-

Time : Fresh- from June 1 to December 1.  
       : Dried- August 20 - October 20.

Methods: For fresh fruit- Picked by hand, carefully severed from  
 tree with knife.  
 For dried fruit- Allowed to shrivel on trees and drop off  
 on ground. Picked up into 40 or 50#  
 lug boxes and hauled to drier.

## Preparing for Market:

Fresh : Usually packed in 10#, or sometimes 20# boxes, single  
 or 2 layer boxes, when fully ripe.  
 Sometimes pasteboard or wood wool is  
 used for backing. Market limited.

Dried : Further dried on trays, stacked and covered. After  
 7 - 10 days, dipped in brine, returned  
 to trays, stacked for one week, then  
 sorted and packed. Adriatics sulphured.

Yields-

	<u>Good</u>	<u>Usual</u>
Smyrna -----	2 tons	1 1/2 tons
Adriatics-----	2 1/2 tons	2 tons
Mission -----	3 tons	2 1/2 tons

NOTE:

With Smyrnas 1 Capri-fig tree required for every 25 - 50 Smyrnas  
 (to produce Blastophaga wasps). Do not take up orchard space.  
 Figs should be grown for profit where both fresh and dried figs are  
 possible. A commercial grower in such sections will probably  
 ship about 1/2 of 1% as fresh fruit (estimated).

Commercial Sections-

Butte County	Madera County	Sutter County
Fresno "	Merced "	Tulare "
Imperial "	Stanislaus "	Yuba "



COST OF PRODUCING THE FIG

Value of Land-		
Raw land-		
High (with water) -----	\$300.00	per acre
Low " " -----	100.00	"
Usual " " -----	150.00	"
Developed orchards-		
High producing -----	800.00	"
Usual " -----	400.00	"
Cost of Establishing Orchards-		
Irrigation system or water right included in price of land		
Clearing, grading, leveling land for planting-	18.00	"
Trees-----	800.00	"
Setting out -----	4.00	"
Annual Cost from Setting Out to Self-Sustaining Age-		
Irrigating (water and labor \$2 - 16)-----	6.00	"
Cultivating (\$ 2 - 8) -----	6.00	"
Pruning -----	1.00	"
Annual Upkeep after Maturity-		
Cultivating -----	6.00	"
Irrigating -----	16.00	"
Caprifying (Smyrna) -----	1.50	"
Pruning -----	6.00	"
Cost of Harvest-		
Fresh : Picking -----)	.12	1/2 per 20#
Packing and warehouse expense-----)		box
Hauling ( 2 miles) -----	.01	"
Dried : Picking -----	.11	per 60# field
		box
Processing, drying and sacking -----	6.00	per dry ton
Hauling (2 miles) -----	.50	"
Market Value of Yield-		
Average for fresh fruit -----	.10	per lb
" " dried fruit - Mission -----	.02	"
Adriatics-----	.04	"
Smyrna -----	.06	"
Taxes and Insurance-		
To Maturity -----	2.00	per acre
After Maturity-		
Average land -----	4.00	"
Good land -----	5.00	"



REQUIREMENTS AND METHODS OF GROWING THE GRAPE (RAISIN)Climatic Requirements-

Freedom from frequent late spring frosts, conditions for early ripening and freedom from heavy fall rains during ripening and harvest. Four or six weeks of dry weather usually required following picking to permit proper drying.

Soil Requirements-

Deep, fertile loam, the heavier loams for muscats and the lighter loams for sultana. Freedom from alkali and standing water during growing season.

Water Requirements-

Grape secures color and quality when grown with sufficient rather than excess water supply. 16" is average minimum without irrigation.

Setting out and Caring for Vineyards to Maturity-

Distance Apart of Vines : Short prune 6' x 12'  
 Long " 6' x 12' to 6' x 16'  
 Rows run east and west 18" - 24".  
 Roads left for hauling north and south about every 200'.

Average Number per Acre : 6' x 12' -- 600  
 Time of Planting Out : February - March  
 Age to Self-Sustaining Crop: Autumn of 3d year.  
 Length of Profitable Life : Estimated 20 years (in absence of serious disease)

Most Popular Varieties : Muscat, Sultanina (Thompson), Sultana  
 Calendar of Operations :

Irrigation : Usually one irrigation; ordinarily given in late spring (April)

Pruning : December- March  
 Pruned to either spurs or canes (if canes, these are tied to stakes or horizontal wires. Suckered in May and June.

Fertilizing : None  
 Spraying : April - June - sulphured for mildew, one, two or three times, except the first one or two years.

Cultivation : Plowed and cross plowed (January -March) hoed once (June). Harrowed into shape. Cultivated six times, beginning in April at monthly intervals.

Companion cropping: Not much done. During 1st year or two occasionally planted to beans or sorghums.



Supports: Sultanina and other trellised varieties-  
Vines tied to temporary 1 1/4" x 1 1/4"x3  
stakes - later to permanent trellis.

Muscat and other staked varieties-  
Tied to 2" x 2" x 4' stakes.

### Care of Vineyards after Maturity-

#### Calendar of Operations-

Irrigation : Usually one irrigation; ordinarily given  
in late spring (April)

Spraying : April - June -sulphured for mildew one  
two or three times

Pruning : December - March . Muscats pruned to  
short spurs. Sultanina to fruit canes,  
and renewal spurs.

Fertilizing : Occasionally a little fertilizing done,  
principally as applications of grape  
pomace, green manures and stable  
manures

Cultivating : January - March. Plowed, cross plowed and  
harrowed into good shape. Cultivated  
four times at monthly intervals, beginning  
in April. Hoe one time around vines in  
June.

Fumigating : None

Thinning Fruit:Not done

### Harvest-

Time : August 20 - October 1

Method : Clusters cut by hand.

Preparing for Market: Spread on trays holding 22# (2' x 3')  
placed in the rows, cured, sorted, and  
delivered to raisin packing house. In  
the Sacramento Valley the Sultanina are  
dipped and dried in a drying yard.

### Yields-

Good : 1 1/2 tons raisins

Usual : 1 ton "

### By-Products-

A second crop, in case of muscats, sold to winery.  
Equal to 20% of crop.

### Commercial Sections-

Counties tributary to Fresno, middle Sacramento Valley, San Diego  
and San Gabriel Valley.

### NOTE:

With vines too young to bear, cultivation should cease in time  
to permit the ripening of wood before autumn frosts.





COST OF PRODUCING THE GRAPE (RAISIN)

Value of Land-		
Raw-		
High -----	\$300.00	per acre
Low -----	50.00	"
Usual -----	150.00	"
Developed vineyards-		
High producing -----	400.00	"
Usual " -----	300.00	"
Cost of Establishing Vineyards-		
Irrigation system or water right included in price of land-		
Clearing, leveling and preparing -----	10.00	"
Vines ( rooted @ \$20 per M ) -----	10.00	"
Setting out -----	6.00	"
Replanting (vines and labor) -----	5.00	"
Annual Cost from Setting out to Self-Sustaining Age-		
Cultivation (\$5 - 8) -----	7.00	"
Stakes or trellis ( 1st year) -----	20.00	"
Tying -----	1.50	"
Pruning 2 years total -----	3.00	"
Sulphuring 2 years total -----	1.50	"
Hoeing " " -----	2.00	"
Burning brush (2nd year) -----	.50	"
Annual Upkeep after Maturity-		
Sulphuring 2 times -----	1.25	"
Cultivating ( \$5 - 8) -----	7.00	"
Pruning and burning brush-Muscats-----	4.50	"
-Sultanina-----	10.00	"
Suckering -----	1.00	"
Tying - Sultanina -----	2.50	"
Hoeing - Muscats -----	2.00	"
- Sultanina -----	4.00	"
Cost of Harvest-		
Gathering (\$7 - 16) -----	10.00	per dry ton
Handling trays -----	1.50	"
Turning and stacking -----	1.25	"
Packing in lugs -----	1.25	"
Hauling ( 4 miles) -----	1.00	"
Market Value of Yield-		
High -----	.06	1/2 per lb
Low -----	.02	"
Average -----	.03	1/4 "
Taxes and Insurance-		
To Maturity -----	1.50	per acre
After Maturity- Average land -----	2.00	"
Good land -----	3.00	"



REQUIREMENTS AND METHODS OF GROWING THE GRAPE (TABLE)Climatic Requirements-

Freedom from late spring frosts, fall rains during ripening, and harvest, and sudden changes in temperature.  
 Climate determines varieties.  
 For extra early: Early starting weather and high mean daily spring temperature.  
 For late: Absence of fall frosts and rains.

Soil Requirements-

Deep, fertile, sandy loam, altho not particular. Freedom from alkali and standing water during growing season.

Water Requirements-

Grape secures color (see note) and quality when grown with sufficient rather than excess water supply. 16" is average minimum without irrigation.

Setting Out and Caring for Vineyards to Maturity-

Distance Apart of Vines : 9' x 9' to 12' x 12'; about every 200' a row north and south is omitted for hauling lane.

Average Number per Acre : 300 to 500

Time of Planting Out : January - March

Age to Self-Sustaining Crop: 4 years (autumn)

Age to Maturity : 7 years

Length of Profitable Life : Estimated 30 years ( in absence of serious disease)

Most Popular Varieties : Tokay, Malaga, Emperor, Sultanina (Thompson) Muscat

Calendar of Operations :

Irrigation : Little done, except in the regular irrigating sections, where one irrigation is usually given in late spring (April)

Pruning : December- March. Pruned to result in grapes being kept off the ground. All varieties are tied to stakes. Suckered in spring and summer (May - June)

Fertilizing : None

Spraying : April - July, sulphured for mildew, one, two or three times except the first year or two.

Cultivation : Plowed and cross plowed (January- March) hoed once or twice (June), Harrowed into shape, cultivated 6 times at monthly intervals from April to August.



Companion Cropping : Not much done. During first year or two occasionally planted to beans or sorghum.

Supports : Vines are tied to stakes 2" x 2" x 6'.

### Caring for Bearing Vineyards-

#### Calendar of Operations-

Irrigation : If in irrigated region, one irrigation is given in late spring (April). Probably 50% raised without irrigation.

Spraying : April - July, sulphured for mildew one, two or three times

Pruning : December - March, Spur pruning most usual: Tokays average 3 bud spurs, Malaga and Emperor average 4 bud spurs.

Fertilizing : Occasionally a little done- principally as applications of grape pomace, green and stable manures.

Cultivating : January- March, plowed, cross-plowed and harrowed into good shape. Cultivated four times, from April at monthly intervals. Hoed one time around vines in June.

Fumigating : None

Thinning Fruit: Little done.

### Harvest-

Time : June 15, until first heavy rains (about November 15)

Method : Carefully cut by hand. Placed in single layers in wide, shallow boxes. Vines gone over several times.

Preparing for Market: Packed into crates holding 4 baskets, total weight 30<sup>#</sup>, /shipped in refrigerator cars.  
net 25<sup>#</sup>

### % of Different Grades-

Packed	: 60%	or	80%
Culls	: 40%		20%

### Yields-

	<u>Totals</u> (Packed and culls)
Good :	7 tons
Usual :	5 "

Culls sold to winery

### By-Products-

Culls sold to winery or dried for raisins.

### Commercial Sections-

Imperial Co. Merced Co. Sacramento Co., San Joaquin Co.  
 Santa Cruz Co., Tulare Co. and Yolo Co.

### NOTE:

Color is the predominant characteristic of table grapes and is greatly affected by soil and temperature. The hotter the climate the lighter the color. See note p. 47.



COST OF PRODUCING THE TABLE GRAPE

Value of Land-		
Raw land-		
High -----	\$ 300.00	per acre
Low -----	25.00	"
Average -----	100.00	"
Developed Vineyards-		
High producing-----	500.00	"
Usual " -----	300.00	"
Cost of Establishing Vineyard-		
Irrigation system included in price of land		
Clearing, grading and leveling land for planting (\$8 - 20) -----	10.00	"
Vines (@ \$20 - per M) -----	10.00	"
Setting out -----	6.00	"
Replanting (vines and labor) -----	5.00	"
Annual Cost from Setting Out to Self-Sustaining Age-		
Cultivation (\$6 - 10) -----	7.00	"
Stakes (1st year) -----	10.00	"
Tying -----	1.50	"
Pruning (2 years) total-----	3.00	"
Sulphuring " " -----	1.50	"
Hoeing " " -----	2.00	"
Irrigating ( \$2- 6) -----	4.00	"
Annual Upkeep after Maturity-		
Sulphuring 3 times -----	2.00	"
Cultivation -----	7.00	"
Pruning and burning brush -----	5.00	"
Suckering -----	1.00	"
Tying ( none after 7th year)-----	1.00	"
Hoeing -----	2.00	"
Irrigating ( \$2- 6) -----	4.00	"
Cost of Harvest-		
Picking ( shipping grapes)-----	.05	per crate
Packing and warehouse expense -----	.07	"
Crate and baskets -----	.10	"
Hauling (3 miles) -----	.01	"
Market Value of Yield- (f.o.b.)		
High (Eastern shipments) -----	2.00	per crate
(From packing house delivered in bulk---	25.00	per ton





## Market Value of Yield (cont.)

Low (Eastern shipments) -----	\$ .25 per crate
(From packing house delivered in bulk)-----	7.50 per ton
Average (Eastern shipments)-----	.50 per crate
(From packing house delivered in bulk)-----	15.00 per ton

## By-Products-

Culls -----	3 tons @ \$7 (85- 10)
Cost to handle -----	\$2.75 per ton

## Taxes and Insurance-

To Maturity -----	1.50 per acre
After Maturity -	
Average land-----	2.00 "
Good land -----	3.00 "



REQUIREMENTS AND METHODS OF GROWING THE GRAPE (DRY WINE)Climatic Requirements-

Same as other grapes. Freedom from late spring frosts, fall rains during ripening, and harvest, and sudden changes in temperature. Ripening during cool weather (to promote acidity and provide wine making temperature)

Soil Requirements-

If deep, well drained, preferably gravelly soils, vine is not particular. Gentle hill slopes are best for wine grapes.

Water Requirements-

Grapes secure color and quality when grown with sufficient rather than excess water supply. Need, however, 15 - 25" of water.

Setting Out and Caring for Vineyards to Maturity-

Distance Apart of Vines : 8' x 8' to 10' x 10'. A row omitted about every 200' for hauling lane.

Average Number per Acre : 440 - 650

Time of Planting Out : January - March

Age to Self-Sustaining Crop: 3 years (autumn)

Age to Maturity : 7 years.

Length of Profitable Life : Estimated 30 years (in absence of disease)

Most Popular Varieties : Zinfandel; Petite Sirah, Carignane (Red)  
Burger, Palomino, Semillon (White)

Calendar of Operations :

Irrigation : Little done

Pruning : December- March after 1st year, Pruned to either spurs or canes; canes tied to stakes. Suckered in summer.

Fertilizing : Occasionally grape pomace, green and stable manure applied.

Spraying : April 15-June, sulphured for mildews one, two or three times, except first year or two.

Cultivation : Plowed and cross plowed (January - March), hoed once (June). Harrowed into shape. Cultivated 6 times at semi-monthly intervals, beginning in April



Companion Cropping : Practically none.

Supports : Short pruning- Vines are tied to stakes  
2" x 2" x 4'

Long " - Vines are tied to stakes  
2" x 2" x 6'

### Care of Vineyards after Maturity-

#### Calendar of Operations-

Irrigation : Very little done  
 Spraying : April 15 - June - sulphured for mildew 2- 5 times  
 Pruning : December - March  
 Fertilizing : Same as for young vines.  
 Cultivating : January - March. Plowed, cross-plowed and  
 harrowed into good shape. Cultivated  
 two to five times at semi-monthly  
 intervals, beginning in April, hoed  
 one time around vines in June.

Fumigating : None  
 Thinning Fruit: Not done

### Harvest-

Time : September 1 - November 1  
 Method : Clusters gathered by hand into 40# lug boxes.  
 Preparing for Market: Hauled in lug boxes to winery.

### Yields-

Good : 6 tons  
 Usual : 3 "

By-Products- None

### Commercial Sections-

Bay Counties ( Alameda, Contra Costa, Lake, Marin, Napa,  
 Solano, Sonoma Counties)  
 San Joaquin County  
 Santa Clara Valley ( Santa Clara and Santa Cruz Counties.

### NOTE:

See footnote, p. 47.

UNIVERSITY



COST OF PRODUCING WINE GRAPES

## Value of Land-

## Raw land-

High -----	\$300.00	per acre
Low -----	50.00	"
Average -----	150.00	"

## Developed Vineyards-

High producing -----	400.00	"
Average " -----	200.00	"

## Cost of Establishing Vineyards-

Irrigation system or water right included  
in price of land

Clearing, leveling and preparing -----	15.00	"
Vines (rooted resistant vines @ \$60 per M) --	40.00	"
Setting out -----	75.00	"
Replanting (vines and labor) -----	6.00	"

## Annual Cost from Setting Out to Self-Sustaining Age-

Cultivating -----	7.00	"
Stakes (1st year) -----	20.00	"
Tying -----	1.50	"
Pruning, 2 years total -----	3.00	"
Sulphuring, " " -----	1.50	"
Hoeing " " -----	2.00	"

## Annual Upkeep after Maturity-

Sulphuring three times -----	2.00	"
Cultivation -----	7.00	"
Pruning and burning brush--Short -----	4.00	"
Long -----	6.00	"
Suckering -----	1.00	"
Tying and rope-- long -----	2.50	"
Short -----	1.00	"
Hoeing -----	2.00	"

## Cost of Harvest-

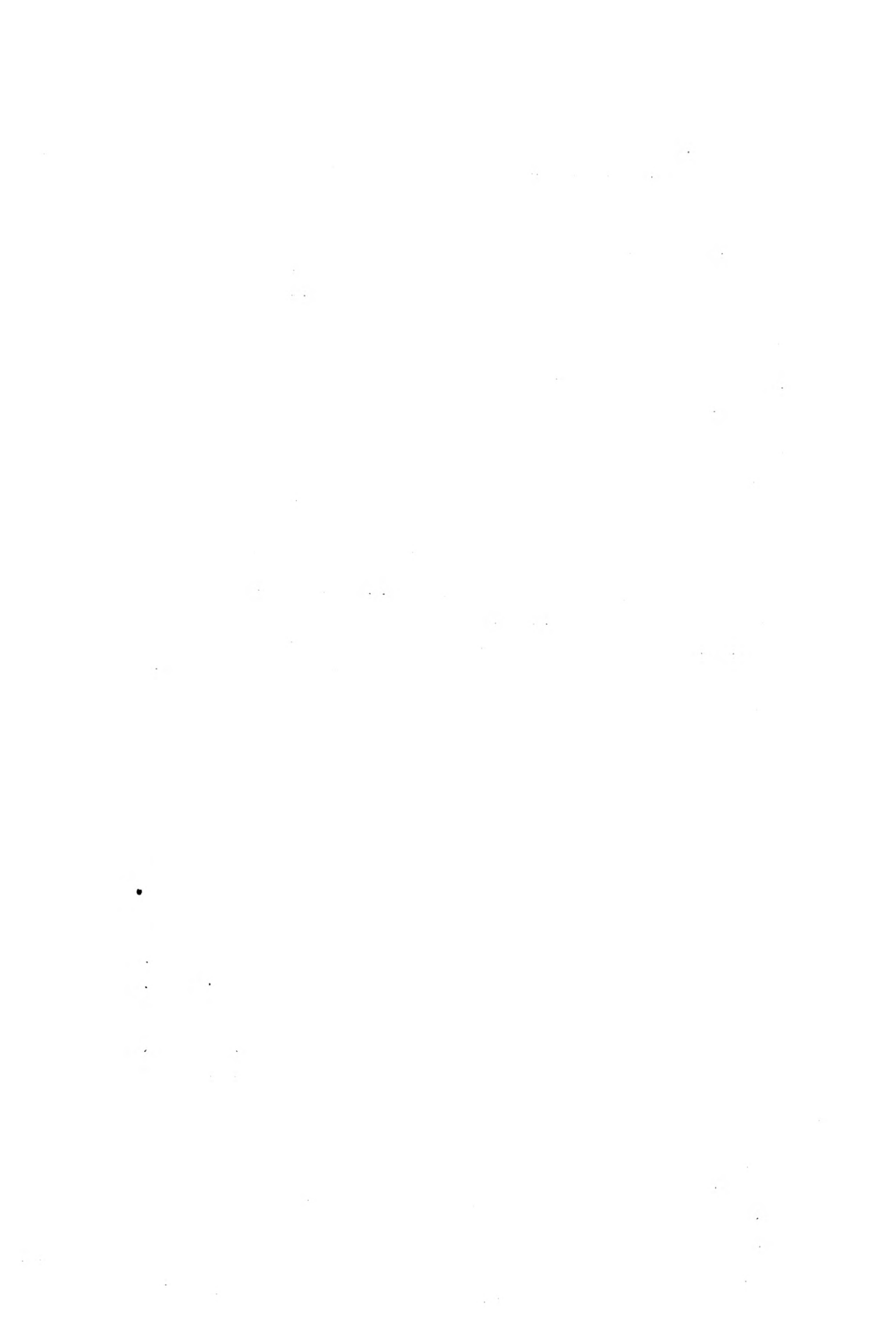
Picking -----	2.00	per ton
Hauling ( 5 miles) -----	1.00	"

## Market Value of Yield-

High -----	25.00	"
Low -----	8.00	"
Average -----	15.00	"

## Taxes and Insurance-

To Maturity -----	1.50	per acre
After Maturity- Average land -----	2.00	"
Good land -----	3.00	"





REQUIREMENTS AND METHODS OF GROWING HAY  
(From cultivated cereals)

Time to Maturity- 4 to 6 months

Life- Annual

Soil Requirements-

- Barley : Heavier soil types, presence of organic matter, less than .25 of 1% alkali.  
Wheat : Same as barley, but requires more organic matter.  
Oats : Same as barley, more benefitted by heavy soils.

Climatic Requirements-

- Barley : Withstands very dry, hot weather, and limited rainfall.  
Wheat : Requires more water and will stand less heat than barley.  
Oats : Requires a cool, relatively humid climate. Best adapted to Coast regions.

Water Requirements and Irrigation-

- Barley : If rainfall less than 18" summer fallowed every 2nd year, 25 - 30" optimum. Only 6 1/2% of acreage irrigated.  
Wheat : Requires more moisture than barley. Only 4.7% of acreage irrigated.  
Oats : Requires more moisture than wheat. Only 3.1% of acreage irrigated.

Calendar of Operations-

Preparing Seed Bed: November- February plowed 4 - 6" deep. Disked or harrowed before planting.

Planting:

Time: November 15 - April 1.

Quantity: 60 - 100#

Method and Distance: Drilled or broadcasted. Disked or harrowed after planting.

Varieties-

Barley : Common California  
Chevalier

Oats : Common California Red  
" " Black

Wheat : White Australian  
Defiance

Rye



Harvest-

Time : May - June  
 Method: Mowed, raked, cocked, left until cured, stacked  
 (or baled if for market)

Yields-

Good : 2 tons  
 Usual : 1 ton

By-Products-

Kind : Stubble  
 Where and for what sold: Pasture

Commercial Sections-

Wheat : Contra Costa County  
 San Luis Obispo "  
 Madera "  
 Monterey "

Oats : Coast Counties  
 Madera County  
 San Joaquin,"  
 Stanislaus "  
 Merced "

Barley : Madera County  
 Merced "  
 Monterey "  
 San Joaquin "

NOTE:

Cereals are not as a rule grown primarily for hay. They are raised primarily for grain but cut for hay only if season or rust indicates field will not make grain, or if the market indicates that grain will be low in price. An exception are some of the foothill lands.



COST OF PRODUCING HAY  
(From Cultivated Cereals)

## Value of Land-

High -----	\$100.00 per acre
Low-----	40.00 "
Usual -----	60.00 "

## Cost of the Crop-

## Preparing land and planting-

Preparing land -----	1.75 "
Seed ( @ 1 1/2¢ ) -----	1.00 "
Planting (broadcasted)-----	.15 "
Harrowing after planting-----	.35 "

## Harvesting-

Mowing-----	.50 per acre
Raking-----	.25 "
Cocking -----	.20 per ton
Stacking -----	.50 "
- or -	
Baling -----	1.75 "
Hauling -----	1.00 "

## Taxes and Insurance-

Average land-----	1.00 per acre
Good land -----	1.50 "

## Market Value of Yields-

High-----	15.00 per ton
Low -----	6.00 "
Average-----	10.00 "

## By-Products-

Stubble (10- 50¢) -----	.25 per acre
-------------------------	--------------



REQUIREMENTS AND METHODS OF GROWING HAY  
(From Volunteer Cereals)

Time to Maturity-      5 to 6 months

Life-                      Annual

Soil Requirements-

- Barley : Heavier soil types, presence of organic matter, less than .25 of 1% alkali.
- Wheat : Same as barley, but requires more organic matter.
- Oats : Same as barley, more benefitted by heavy soils.

Climatic Requirements-

- Barley : Withstands very dry, hot weather and limited rainfall.
- Wheat : Requires more water, and will stand less heat than barley.
- Oats : Requires a cool, relatively humid climate. Best adapted to Coast regions.

Water Requirements and Irrigation-

- Barley : If rainfall less than 18" summer fallowed every 2nd year, 25 - 30" optimum. Only 6 1/2% of acreage irrigated.
- Wheat : Requires more moisture than barley. Only 4.7% of acreage irrigated.
- Oats : Requires more moisture than wheat. Only 3.1% of acreage irrigated.

Calendar of Operations-

Planting: None. Seeded automatically by last year's shattering.  
Crop grown without cultivation.

Varieties:

- Barley
- Wheat
- Oats

Harvest :

Time: May - June  
Method: Mowed, raked, cocked, left until cured, stacked, or baled if for market.

Yields-

- Good : 1 1/2 tons
- Usual : 3/4 ton





By-Products-

Kind : Stubble  
Where and for what sold: Pasture.

Commercial Sections-

Barley : Merced, Monterey, San Joaquin Counties.  
Wheat : Madera, Monterey, and San Luis Obispo Counties.  
Oats : Merced, San Joaquin and Stanislaus Counties.

NOTE:

Cereals are not as a rule grown primarily for hay. They are raised for grain and cut for hay only if season indicates that field will make only poor grain crop, or if market points to low prices ruling for grain.



COST OF PRODUCING HAY  
(From volunteer cereals)

## Value of Land-

High -----	\$200.00 per acre
Low -----	20.00 "
Usual -----	60.00 "

## Cost of the Crop-

## Harvesting-

Mowing -----	.50 "
Raking -----	.25 "
Cocking -----	.20 per ton
Stacking -----	.50 "
- cr -	
Baling (\$1.50 - 2.50)-----	2.00 "
Hauling (5 miles) -----	1.00 "

## Taxes and Insurance-

Average land -----	1.00 per acre
Good land -----	1.50 "

## Market Value of Yields-

High -----	18.00 per ton
Low- -----	4.00 "
Average -----	6.00 "

## By-Products-

Stubble ( 10 - 50¢) -----	.25 per acre
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REQUIREMENTS AND METHODS OF GROWING HOPS

- Time to Maturity- 1st year a yield of 250 - 300# is secured.
- Life- Not known definitely (some yards are 25 years old and doing well.
- Soil Requirements- Black, rich, alluvial, sandy loam of excellent moisture retaining properties, at least 6' in depth. Old river bottoms best.
- Climatic Requirements- Hot sunny weather during growing season.
- Water Requirements and Irrigation- Plenty of moisture without excess required.
- Calendar of Operations-

Preparing for Planting: January - March plowed 8", cross plowed and put in shape for planting.

Planting :

Time : January -April

Quantity: 650 - 2,000 vines

Method and Distance: 1 - 3 roots to a hill, hills 6' x 6' to 8' x 8'. 1 staminate vine planted for every 100 vines.

Care 1st year:

Cultivated 1st year 4 - 8 times. Cultivation ceases by July 15. High trellis system set and vines trained to it. High pole system consists of 6" x 6" poles 16'-20' above ground, set 36 to 48' apart, strung with trellis wire used overhead and 2 or 3 cotton strings from hill to trellis. Low pole system consists of a pole at every hill, 8' above ground, and strings stretched criss-cross from pole to pole

Care after 1st year:

After 1st year plowed 2 to 4 times 8 - 12" deep, March-June, and cultivated until July 1st. Vines trained annually in April and May. Pruned after harvest is over in February - March. Sometimes sprayed for lice or sulphured for spider.

Varieties:

Not segregated.



**Harvest :**

When : August - September

How : Picked by hand

Operations : Dried in kilns @ 160 to 175° for 9 - 12 hours  
with sulphur fumes. Baled in 200#  
bales (180# net).  
Dry 3 1/4 - 3 1/2 to 1

**Yields-**

Good : 2,000#

Usual : 1,400#

**Commercial Sections-**

Mendocino County

Sonoma "

Tehama "

Yuba "





COST OF PRODUCING HOPS

Value of Land-		
Raw land-		
High -----	\$1000.00	per acre
Low -----	300.00	"
Usual -----	400.00	"
Developed land-		
Best -----	1000.00	"
Good -----	600.00	"
Usual -----	400.00	"
Cost of Establishing Yard (1st year)		
Preparing land for planting -----	6.00	"
Roots (\$3 - 5 per thousand)-----	10.00	"
Planting and training 1st year -----	18.00	"
Twine -----	7.50	"
Cultivation -----	3.00	"
Poles, wires and installing trellis-		
High pole -----	75.00	"
Low " -----	25.00	"
Annual Cost of Established Yard (one year from planting-		
Stringing, pruning, suckering, hoeing (\$14 - 20), training and pegging-----	18.00	"
String-		
High pole-----	7.50	"
Low " -----	3.00	"
Spraying -----	3.00	"
Plowing and cultivating -----	10.00	"
Cost of Harvesting-		
Picking -		
Green -----	.01	per lb
On dry basis -----	.03	1/4 per lb.
Drying ( 3/4 to 1¢ per lb) -----	.00	3/4 per lb on dry basis
Baling ( 1/4 - 1/2¢ per lb) -----	.00	1/4 per lb.
Hauling (5 miles) -----	1.00	per ton
Market Value of Yield-		
High -----	.45	per lb.
Low -----	.02	"
Average -----	.14	"
<u>NOTE</u> : Prices fluctuate greatly from year to year		
Taxes and Insurance-		
1st year -----	4.00	per acre
After 1st year-		
Average land -----	4.00	"
Good land -----	5.00	"



REQUIREMENTS AND METHODS OF GROWING THE LEMONClimatic Requirements-

In General: Requires less heat, but stands less frost than orange.

Soil Requirements-

Surface: Rich, fertile clay loam  
 Subsoil: Open, no hardpan, no black alkali.  
 Depth : 6' or more.

Water Requirements- Constant supply of moisture, tree is evergreen and a heavy user of water. Total of 45 acre inches from rainfall and irrigation.

Setting Out and Care for Orchards to Maturity-

Distance Apart of Trees : 24' x 24'  
 Average Number per Acre : 75  
 Time of Planting Out : March - May (April best)  
 Age to Self-Sustaining Crop : 8 years  
 Age to Maturity : 12 years  
 Most Popular Varieties : Eureka, Lisbon  
 Length of Profitable Life : Estimated 50 years.  
 Calendar of Operations to Maturity:

Irrigation : To keep constant moisture supply available all year round. This means irrigating every 6 to 8 weeks from May to November while trees are small.

Pruning : Pruned to shapely head 2nd year during February, then annually dead limbs removed, and suckers and water sprouts shortened or removed. Headed back to increase strength of limb and cause fruit to be borne nearer axis.

Fertilizing : As soils lack body, they need chemical fertilizers, manure and green manure crops. Fertilizers put on in fall and spring; green manure crops grown from August or September to February or March, when plowed under.

Spraying : Depends on presence of fungi or insects.

Cultivation (for young trees: If no companion crops are grown, plowed two ways in February and March to turn under weeds and green manure crops. Cultivated two times between irrigations. Expense of cultivation occasionally borne by companion crops.

Companion Cropping : Beans for 1, 2 or 3 years; if sufficient water and fertility is available, cabbage, nursery stock beans, chili peppers, corn and sometimes alfalfa. Never strawberries.



Caring for Bearing Orchards-

## Calendar of Operations-

- Irrigation : Every 4 weeks from April to November
- Pruning : Once in fall to open tree  
Once in spring to remove suckers (June)
- Fertilizing : Manure and chemical fertilizers used, the practice varying. Cover crop of rye, bitter clover, or alfalfa planted in August or September, irrigated every two weeks, and plowed under in February or March.
- Cultivation : Plowed both ways in spring 8" deep, cultivated two times between irrigations.
- Fumigating : Once in one or two years for scale with cyanide of sodium or cyanide of potassium. Done by contract. Not necessary in scale free districts.  
Time: From middle of July to January 1.
- Thinning Fruit: Not done, tree crowded to carry all fruit which sets by cultivating, fertilizing and irrigating.
- Spraying : Sometimes for scale, but usually fumigation takes place of spraying. Always spray for red spider.

Harvest-

Time : Average 10 pickings a year.

Method: Carefully cut by hand, sizes 2 1/4" in winter and 2 1/8" in summer.

Preparing for Market: Washed, sorted, packed and ripened. Boxes 11" x 14 1/2" x 27" (outside measurements) holding 210 to 490 lemons - graded according to size.  
Weight = 84# gross, 76# net, 396 boxes per standard car.

In fall, to take advantage of high prices, all lemons are artificially colored and rushed to market. In winter, the plan is to retard ripening.

% of Different Grades-

Packing fruit : 90%  
Culls : 10%

Yields of Different Grades-

Good : 300 packed boxes  
Usual : 150 "

Commercial Sections-

Los Angeles County	San Bernardino County
Orange "	San Diego "
Riverside "	Ventura "



COST OF PRODUCING THE LEMON

Value of Land-		
Raw land-		
High (with water) -----	\$1,200.00	per acre
Low " -----	250.00	"
Usual " -----	500.00	"
Developed orchards-		
High producing -----	4,000.00	"
Usual " -----	1,000.00	"
Cost of Establishing Orchards-		
Irrigation system or water right included in cost of land-		
Fluming (concrete pipe) -----	15.00	"
Clearing, grading and leveling land for planting-----	20.00	"
Trees-----	75.00	"
Setting out -----	5.00	"
Annual Cost from Setting Out to Self-Sustaining Age-		
Cultivation and irrigation -----	20.00	"
Fertilizing -----	10.00	"
Pruning, pro rata -----	2.50	"
Water -----	7.00	"
Annual Upkeep after Maturity-		
Plowing and cultivating -----	25.00	"
Water -----	20.00	"
Irrigating -----	6.00	"
Cover crop -----	5.00	"
Fertilizer and Manure (0- \$100)-----	65.00	"
Pruning -----	15.00	"
Fumigating (once in two years - (30) -----	15.00	"
Smudging (4 times)-----	20.00	"
Spraying -----	7.50	"
Other tree care -----	5.00	"
Cost of Harvest-		
Picking -----	.25	per box
Hauling (4 miles) -----	.04	"
Packing and warehouse expense-----	.60	"
Market Value of Yield (f.o.b.)		
High -----	3.75	per box
Low -----	1.25	"
Average -----	2.50	"
Taxes and Insurance-		
To Maturity -----	5.00	per acre
After Maturity-		
Average land -----	10.00	"
Good land -----	20.00	"





REQUIREMENTS AND METHODS OF GROWING OATSTime to Maturity- 165 daysLife- AnnualSoil Requirements-

Surface: Heavier soil types 24" in depth, presence of organic matter, less than .25 of 1% of alkali (Same as barley, but more benefitted by heavy soils)

Climatic Requirements-

Requires a cool, relatively humid climate. Best adapted to Coast regions.

Water Requirements-

Requires more moisture than other cereals. 32" optimum. Only 3.1% of acreage irrigated.

Calendar of Operations-

Preparing Seed Bed: November - February plowed 4 - 8" deep. Disked or harrowed before planting.

## Planting :

Time : November 15 to February 1.

Quantity: 110# broadcast  
80# drilled

Method and Distance: Broadcasted and harrowed in, or drilled.

## Varieties:

Common California Red

" Black

Lincoln (White)

## Harvest :

When : June 15 to September 1st.

How : By heading in fog belts  
By combines in Valley  
By binders in special sections

Operations: Threshed either from shock by stationary outfit, or in combined harvester.

Yields-

Good : 1,500#

Usual : 900#

By-Products-

Kind : Stubble and baled straw

Amount : Depends on lodging and method of harvest.

Where and for what sold:

Stubble: Feed (25¢ per acre)

Straw : 6-8 bales, value 35¢ a bale (costs 15¢ to bale)

Commercial Sections-

Cost counties, Contra Costa, Monterey, San Mateo, Sonoma Counties.

NOTE: Treating seed for smut is so important that its cost is included.



COST OF PRODUCING OATS

## Value of Land-

High -----	\$250.00	per acre
Low -----	25.00	"
Usual -----	100.00	"

## Cost of the Crop-

## Preparing land and planting-

Plowing -----	1.75	"
Harrowing before seeding -----	.25	"
Seed ( @ 2¢) -----	2.00	"
Treating seed -----	.04	"
Broadcasting -----	.15	"
Harrowing after seeding -----	.35	"

## Harvest-

Combined harvester -----	2.00	"
Sacks -----	.08	each
Twine -----	.004	per sack
Hauling (10 miles) -----	1.00	per ton

## Taxes and Insurance-

Average land -----	1.00	per acre
Good land -----	1.50	"

## Market Value of Yield-

High -----	1.75	per cwt.
Low -----	1.25	"
Average -----	1.35	"



REQUIREMENTS AND METHODS OF GROWING THE OLIVEClimatic Requirements-

In General: 6200 - 7200° F. required to ripen crop. (Add mean temperatures for all months from blossoming to ripening time. Divide by number of months. Multiply by number of days.) Dry climate, free from too much moisture in air and frosts when berries are on trees. Temperature never to drop below 20° F. and no frosts from middle of April to middle of December.

Soil Requirements-

Surface : Best is soft, warm, friable, light sandy loam (wide range, however.)  
 Subsoil : Moderately moist, well drained, abundance of lime and potash.  
 Depth : 8' or more (many successful orchards on shallow soils.)

Water Requirements-

Not as much attention given as should be. Usually needs 30 acre inches of water to produce profitably. (Varies with depth and character of soils.)

Setting Out and Caring for Orchards to Maturity-

Distance Apart of Trees : 30' x 30'  
 Average Number per Acre : 48  
 Time of Planting Out : February - April  
 Age to Self-Sustaining Crop : 7 years  
 Age to Maturity : 28 years  
 Most Popular Varieties : Mission, Manzanillo, Escolano  
 Length of Profitable Life : Estimated to be hundreds of years.

Calendar of Operations to Maturity:

Irrigation : To keep constant moisture supply available all year round. This means irrigating every 6 to 8 weeks from May to November, while trees are small.

Pruning : 1st year only ground suckers and cross branches removed.  
 After 1st year, pruned annually to make head.

Fertilizing : If soils lack body, fertilizers, green manures and stable manure used.

Spraying : Usually not required for young trees.

Cultivating : Usually such as is required by companion crops.  
 Yearly deep plowing to keep feeding roots down is desirable.

Companion cropping: As in other orchards, if soil, water and fertility will permit.



Care of Bearing Orchards-

## Calendar of Operations :

- Irrigation : Ample moisture needed. Irrigated one week before blossoming and from July 15 to September 30, (15 - 30 days apart) Give 30" or more, rainfall and irrigation.
- Pruning : Pruned during January or February. Superfluous or useless growth and dead wood removed. Olives borne on wood produced previous year.
- Fertilizing : Some (altho little) fertilizing done; necessary to keep up humus and plant foods. •
- Cultivating : Plowed 6 - 10" after rains in February or March. Cultivated once a month from April to November.
- Spraying : For scale in foggy climate. Usually not required in interior. When sprayed oil emulsion is used in September (altho January is preferable)

Harvest-

Time : October - December.

Method :

Oil - Pulled off by hand or knocked off with poles, and delivered in lug boxes or sacks.

Pickling- Carefully hand picked into lined baskets, and delivered in small lined lug boxes (40#)

% of Different Grades-

Pickling : 40%

Oil : 60%

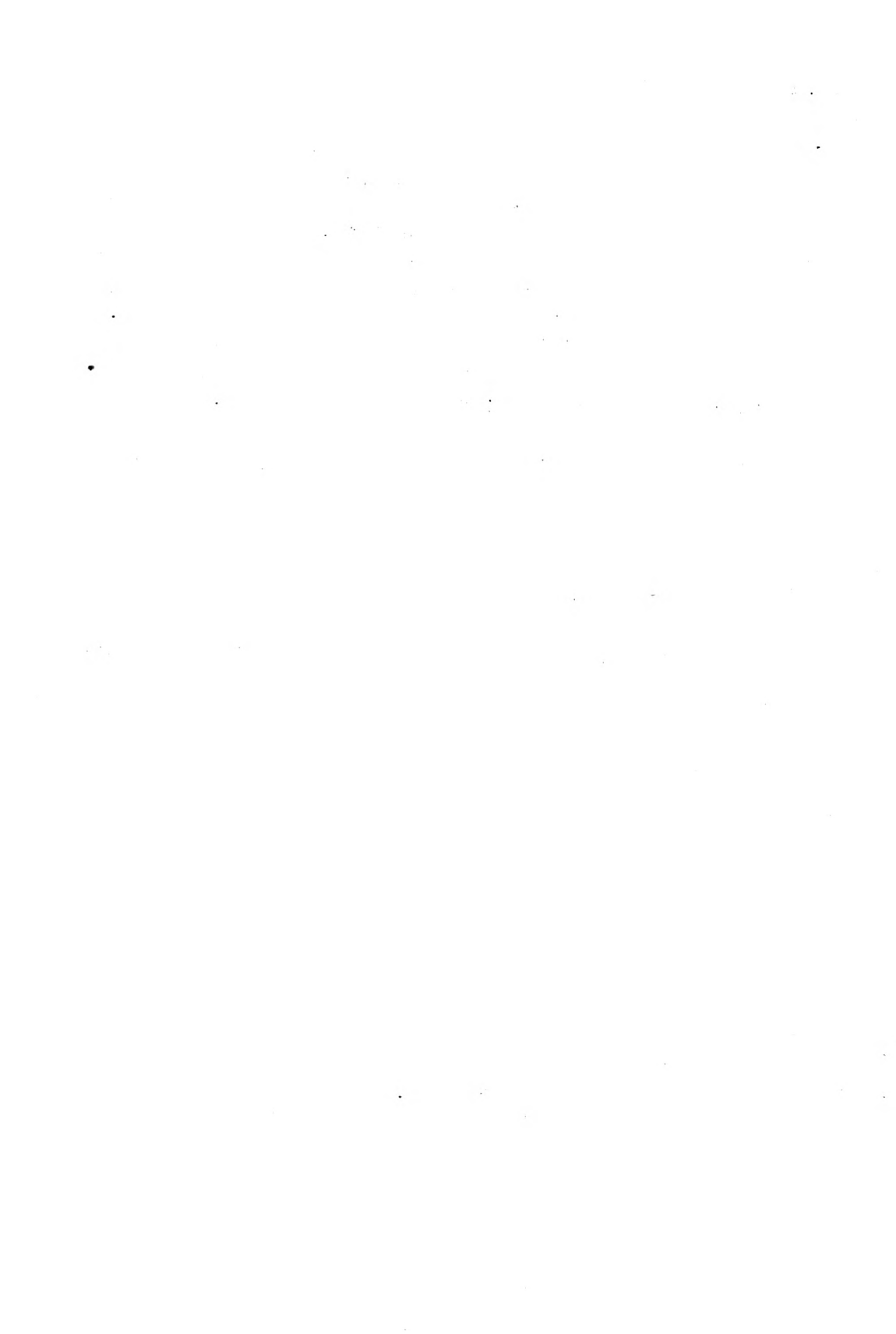
Yields-

Good : 2 tons

Usual : 1 1/2 tons

Commercial Sections-

Country tributary to towns of Oroville, Anderson, Auburn, Sacramento, Napa, Fresno, Santa Barbara, Los Angeles and San Diego.





COST OF PRODUCING THE OLIVE

Value of Land-			
Raw land-			
High (with water) -----	\$300.00	per acre	
Low           " -----	75.00	"	
Usual         " -----	150.00	"	
Developed orchards-			
Best -----	1000.00	"	
Good -----	750.00	"	
Usual -----	500.00	"	
Cost of Establishing Orchards-			
Irrigation system or water right (included in land price)			
Clearing, grading, and leveling land for planting (\$25 - 100) -----	40.00	"	
Trees (48) -----	25.00	"	
Setting out -----	5.00	"	
Replanting -----	1.00	"	
Annual Cost from Setting Out to Self- Sustaining Age-			
Cultivating and irrigating (usually borne by intercrops) -----	7.50	"	
Pruning -----	5.00	"	
Annual Upkeep after Maturity-			
Plowing -----	4.00	"	
Pruning -----	12.50	"	
Cultivating, water, irrigation -----	12.50	"	
Cost of Harvesting-			
Pickling olives ( \$18 - 30 )-----	20.00	per ton	
Oil olives ( \$12 - 20 ) -----	15.00	"	
Hauling     ( 4 miles) -----	1.00	"	
Market Value of Yields-			
High -			
Pickling -----	250.00	"	
Oil -----	50.00	"	
Low-			
Pickling -----	75.00	"	
Oil -----	35.00	"	
Average-			
Pickling -----	125.00	"	
Oil -----	40.00	"	
Taxes and Insurance-			
To Maturity-----	1.50	per acre	
After Maturity-			
Usual land -----	6.00	"	
Good land -----	7.50	"	



## (Read Preface)

REQUIREMENTS AND METHODS OF GROWING THE ONION

- Time to Maturity- Fall planting - 150 - 240 days  
Spring " - 180 - 220 "
- Life- Annual
- Soil Requirements- Rich silt or peat lands, retentive of moisture, 2' in depth.
- Climatic Requirements- Long growing season with moderate temperature, no rain during harvest.
- Water Requirements- Abundant moisture, from either natural sources or irrigation. Crop must be kept continually growing for if checked will go to seed, thus rendering it unfit for marketing.
- Calendar of Operations-
- Preparing Seed Bed: Fall planting - October-November plowed and worked down into seed bed.  
Spring " - Plowed November, January reseeded and worked down into excellent seed bed.
- Planting :
- Time : November-February  
Young plants seeded in November and transplanted.  
Seeds used in February.
- Quantity: 2- 7# of seed for field, or 160,000 sets
- Method and Distance: Seed or plants set in 12" rows 4" apart in rows. Drilled or set by hand.
- Care of Growing Crop:  
Thoroughly weeded twice, hand cultivated with hoes and wheel hoes each month, from time plants are up until maturing ( 4 mos.)
- Varieties :
- |                  |                       |
|------------------|-----------------------|
| Australian brown | Italian reds          |
| California reds  | Yellow Globe Danvers. |
- Harvest:
- Time : April - November
- Method : Pulled just as tops are getting yellow, sometimes laid in windrows to cure ( 3 to 14 days), topped, sacked (105#) and hauled to warehouse.

Yields-

Good : 30,000#

Usual : 15,000#

Commercial Sections-

Imperial, Los Angeles, Sacramento, San Joaquin Counties.



COST OF PRODUCING ONIONS

## Value of Land-

High -----	\$600.00 per acre
Low -----	200.00 "
Usual -----	350.00 "

## Cost of the Crop-

## Preparing land and planting - .

Preparing land -----	4.00 "
Seed ( 40¢- \$2.00) -----	4.00 "
Seeding -----	1.00 "
Planting sets -----	20.00 "

## Growing the crop-

Hand weeding and hoeing (\$10-95) -----	50.00 "
Irrigating (\$3 per time)-	
Upland -----	10.00 "
Peat -----	.60 "

## Harvest-

Pulling, topping and sacking -----	.10 per sack
Sacks -----	.09 each
Hauling (2 miles) -----	.50 per ton

## Market Value of Yield-

High -----	2.50 per cwt.
Low -----	.25 "
Average -----	.80 "

## Taxes and Insurance-

Average land -----	2.00 per acre
Good land -----	3.00 "



REQUIREMENTS AND METHODS OF GROWING THE ORANGE

Climatic Requirements-

In General: Freedom from frosts: warm weather in summer, somewhat tempered.

Soil Requirements-

Surface : Nearly level, rich, fertile clay loam, easily worked.  
Subsoil : Open, no hardpan, no black alkali. Lighter than surface.  
Depth : 6' or more.

Water Requirements- Constant supply of moisture, tree is evergreen and a heavy user of water. Total of 36 acre inches from rainfall and irrigation. (Ranges, however, from 12 to 80")

Setting Out and Caring for Orchard to Maturity-

Distance Apart of Trees : 22' x 22'  
Average Number per Acre : 90  
Time of Planting Out : February - May  
Age to Self-Sustaining Crop : 7 - 8 years  
Age to Maturity : 10 - 15 years  
Most Popular Varieties :

Valencia  
Washington Navel

Length of Profitable Life : Estimated 50 years.

Calendar of Operations to Maturity:

- Irrigation : To keep constant moisture supply available all year round. This means irrigating every 4 to 8 weeks from May to November while trees are small.
- Pruning : When done, trees pruned to shapely head 2nd year during February, then dead limbs annually cut out and suckers and water sprouts shortened or removed.
- Fertilizing : As soils lack body they need chemical fertilizers, manures, and green manure crops. Fertilizers put on in fall and spring; green manure crops grown from September to February or March, when plowed under.
- Spraying : Depends on presence of fungi or insects.





Cultivation : If no companion crops are grown, plowed two ways in February and March to turn under weeds and green manure crops. Cultivated 2 to 4 times between irrigations. Usually clean cultivation is practiced, altho in some groves beans for 1, 2 or 3 years are grown; if sufficient water and fertility is available, cabbage, nursery stock, corn and sometimes alfalfa are raised.

### Caring for Bearing Orchards-

#### Calendar of Operations-

- Irrigation : Every month from April to November.
- Pruning : Pruned in fall to open tree and sometimes in spring to remove suckers (June)
- Fertilizing : Manure and chemical fertilizers used, the practice varying. Cover crop of rye, vetch, bitter clover, or alfalfa planted in August or September - irrigated every two weeks and plowed under in February or March.
- Cultivation : Plowed both ways in February or March 8" deep, cultivated two times between irrigation.
- Fumigating : Once in one or two years for scale with cyanide of sodium or cyanide of potassium. Done by contract, association or county outfits. Not necessary in scale free districts.  
Time: Any time from July to January 1.
- Thinning Fruit: Not done, tree crowded to carry all fruit which sets by cultivation, fertilization and irrigation.
- Spraying : Sometimes for scale, but usually fumigation takes place of spraying.

### Harvest-

Time : Navel (South of Tehachapi) Dec. 15 - May 15  
(North of Tehachapi) Nov. 15 - Jan. 1

Valencia (South of Tehachapi)  
Redlands July 15 - Oct. 1  
Placentia Sept. 15 - Dec. 1  
(North of Tehachapi) May - July



Harvest- (cont.)

Method : Carefully cut by hand when ripe

Preparing for Market:

Allowed to dry for 3 or 4 days, wrapped and packed in standard boxes 12" x 12" x 26" (outside measurement) holding from 80 to 324 oranges-graded according to size. Weight = 66# net, 72# gross. 396 boxes to standard car.  
100 field boxes = 66 packed boxes.

Yields-

% of Different Grades-

Packing fruit -----	95%
Culls -----	5%

Yields of Different Grades-

Good -----	250 packed boxes
Usual -----	125 "

Commercial Sections-

Butte	County
Los Angeles	"
Orange	"
Riverside	"
San Bernardino	"
Santa Barbara	"
Tulare	"
Ventura	"



COST OF PRODUCING THE ORANGE

## Value of Land-

## Raw land-

High(with water)-----	\$1,200.00	per acre
Low           "-----	200.00	"
Usual         "-----	500.00	"
Developed Orchards-		
High producing-----	4,000.00	"
Usual         "-----	1,500.00	"

## Cost of Establishing Orchards-

Irrigation system or water right included in  
cost of land-

Fluming (concrete pipe)-----	15.00	"
Clearing, grading and leveling land for planting-----	20.00	"
Trees-----	45.00	"
Setting out-----	5.00	"

## Annual Cost from Setting Out to Self-Sustaining Age-

Cultivating and irrigating-----	20.00	"
Fertilizing-----	10.00	"
Pruning, pro rata-----	2.50	"
Water-----	7.00	"

## Annual Upkeep after Maturity-

Plowing and cultivating-----	15.00	"
Water ( \$7.50 - 25)-----	15.00	"
Irrigating-----	6.00	"
Cover crop-----	5.00	"
Fertilizers and manure ( 0 - \$100)-----	50.00	"
Pruning-----	7.50	"
Fumigating (once in two years - \$30)-----	15.00	"
Smudging (3 times)-----	15.00	"
Spraying-----	5.00	"
Propping, doctoring sick trees, etc.-----	3.50	"

## Cost of Harvest-

Picking-----	.08	per box
Hauling ( 4 miles)-----	.03	"
Packing and warehouse expense-----	.30	"

## Market Value of Yield (f.o.b.)

High-----	3.00	per box
low-----	.75	"
Average-----	1.75	"
Culls-----	.15	"

## Taxes and Insurance-

To Maturity-----	5.00	per acre
After Maturity- Average land-----	10.00	"
Good land-----	20.00	"



REQUIREMENTS AND METHODS OF GROWING THE PEACHClimatic Requirements-

In General: Has wide range. Requires freedom from frost in spring and warm sunny summer weather.

Soil Requirements- Deep, light, well drained, sandy loam at least 6' deep, or decomposed granitic soils of the Sierra foothills.

Water Requirements- On account of light soils chosen for peaches, irrigation is usually required. Trees are benefitted by a scanty rather than an oversupply.

Setting Out and Caring for Orchards to Maturity-

Distance Apart of Trees : 20' x 20' to 24' x 24'  
 Average Number per Acre : 75 to 108  
 Time of Planting Out : December - March  
 Age to Self-Sustaining Crop : 5 years  
 Age to Maturity : 8 years  
 Length of Profitable Life : Estimated 20 years.  
 Most Popular Varieties :

Early Crawford (Freestone), Muir (Freestone), Lovell (Freestone)  
 Phillips (Cling), Tuskena or Tuscan (Cling), McKeivitt (White  
 Cling), Elberta (Freestone), Foster (Freestone) Salway (Free-  
 stone) Orange (Cling)

## Calendar of Operations :

Irrigation : If given, twice by furrows or checks- June to October or November.

Pruning : Pruned annually to make head during December, January or February.

Fertilizing : Cover crops for soils lacking in body. Usually intercropped

Spraying : November- December, Bordeaux  
 February- Lime sulphur, whitewash trunks and protect from rabbits 2nd year.

Cultivation : Plowed and cross plowed in February and March (sometimes fall plowed in October or November; harrowed twice, cultivated at frequent intervals from April to October.

Companion Cropping: Intercropped to berries, small fruits, grain, beans, beets, corn, and sometimes alfalfa. Usually discontinued after trees are three or four years old.





Caring for Bearing Orchards-

## Calendar of Operations-

- Irrigation : If given, twice by furrows, June and October
- Pruning : December - February. Pruned to open up head, thin out wood, and shorten growth.
- Fertilizing : Cover crops grown when soil lacks body.
- Cultivation : February- March, plowed and cross plowed (sometimes fall plowed - October or November), crop cultivated at frequent intervals from March to November. Worked down into good condition.
- Fumigating : None
- Thinning Fruit: Thin to leave one peach every 4 to 6 inches apart. Thin as early as possible (April)
- Spraying : November- Bordeaux if blight is present  
February -Lime sulphur when buds are swelling.  
Borers when present are removed from trunks once a year.

Harvest-

- Time : July - September
- Method : Picked by hand, or shaken off if for drying. Trees gone over two to five times.

## Preparing for Market:

- Green : Packed in 20# crates or 25# baskets.
- Dried : Cut in half, pitted, sulphured, dried in sun on trays. Dry 5 or 6 to 1.
- Canning: Delivered in lug boxes.

Yields-

	<u>Canning</u>	<u>Dried</u>	<u>Green</u>
Good :	8 tons	1.5 tons	600 20# boxes
Usual :	6 "	1.0 "	400 "

Commercial Sections-

Fresno	County
Kings	"
Merced	"
Placer	"
Tulare	"



COST OF PRODUCING THE PEACH

## Value of Land-

Raw land-			
High (with water) -----	\$300.00	per acre	
Low           " -----	100.00	"	
Usual         " -----	150.00	"	
Developed Orchards-			
High producing -----	600.00	"	
Usual         " -----	300.00	"	

## Cost of Establishing Orchards-

Irrigation system or water right included in price of land			
Clearing, grading and leveling land for planting (\$2.50 - 75 ) -----	20.00	"	
Trees -----	15.00	"	
Setting out ( \$4 - 8 ) -----	6.00	"	
Replanting -----	1.50	"	

## Annual Cost from Setting Out to Self-Sustaining Age-

Cultivation -----	7.00	"	
Irrigation ( \$2 - 10 ) -----	6.00	"	
Pruning ( \$3 - 6 ) -----	4.00	"	
Spraying -----	2.50	"	
Whitewashing -----	.50	"	
Rabbit Protection -----	1.00	"	

(Cultivation usually borne by intercrop)

## Annual Upkeep after Maturity-

Plowing and cultivating (\$6 - 12) -----	10.00	"	
Pruning and burning brush (\$6 - 10) -----	8.00	"	
Irrigation (\$2 - 10) -----	6.00	"	
Spraying (\$ 10 - 12) -----	10.00	"	
Thinning ( \$ 0- 10) -----	6.00	"	
Digging borers (\$ 0 - 5 ) -----	3.00	"	
Cover crop -----	2.00	"	
Propping (labor) -----	2.00	"	

## Cost of Harvest-

Picking (for green fruit) -----	.03	per 20# box
Packing and warehouse expense -----	.12	"
Hauling (2 miles) -----	.01	"



Cost of Harvest- (cont.)

Picking (for dried fruit) -----	\$10.00	per dry ton
Cutting (\$10 - 12.50) -----	10.00	"
Haul to drier ( 2 miles) -----	3.00	"
Drying, sulphuring and sacking -----	10.00	"
Haul, to ship ( 2 miles) -----	.50	"
 Picking (for canneries) -----	 2.00	 per ton
Hauling (2 miles) -----	.50	"

Market Value of Yield-

High-

Canneries -----	25.00	per ton
Dried -----	.10	per lb.
Green -----	1.00	per crate

Low-

Canneries -----	10.00	per ton
Dried -----	.03	1/2 per lb.
Green -----	.25	per crate

Average-

Canneries -----	20.00	per ton
Dried -----	.05	per lb.
Green -----	.40	per crate

Taxes and Insurance-

To Maturity ----- 1.50 per acre

After Maturity -

Average land -----	2.00	"
Good land -----	3.00	"



REQUIREMENTS AND METHODS OF GROWING THE PEAR

Climatic Requirements-

In General: Warm during growing season; freedom from frost at budding time. Not especially particular as to section.

Soil Requirements-

Surface : Heavy class of moist soils 8' or more in depth - clay loam with clay subsoil best. Moist river bottoms exceptionally good.

Water Requirements- Ample supply of moisture throughout the year

Setting Out and Caring for Orchards to Maturity-

Distance Apart of Trees : 25' x 25'  
Average Number per Acre : 70  
Time of Planting Out : December - March  
Age to Self-Sustaining Crop: 6 years  
Age to Maturity : 12 years.  
Most Popular Varieties : Bartlett, Winter Nelis. Anjou, Angoulene, Glout Morceau.  
Length of Profitable Life : Estimated 50 years.

Calendar of Operations to Maturity:

Irrigation : When required, given in July, once by furrows.  
Pruning : Pruned annually in winter to form head.  
Fertilizing : Cover crops for soils lacking in body. Usually intercropped.  
Spraying : Sometimes given lime sulphur (February)  
Cultivating : Plowed in February and March, harrowed twice, cultivated at two to four weeks intervals until August. Usually borne by intercrop.

Companion Cropping:

Intercropped to berries, small fruits, beans, beets, corn and sometimes alfalfa. Usually discontinued after trees are 5 years old.

Caring for Bearing Orchards-

Calendar of Operations :

Irrigation : When required, given once in July by furrows.





Caring for Bearing Orchards- (cont.)

## Calendar of Operations :

- Pruning : December, January or February to head in and shape tree.
- Fertilizing: Very little done, cover crops sometimes grown.
- Cultivation: February or March. Plowed and cross plowed, worked down, crop cultivated 4 - 6 times until July.
- Fumigating : None
- Thinning Fruit: Not much thinning done.
- Spraying : December - February, lime sulphur or oil emulsion  
February - April, Bordeaux mixture when cluster buds begin to part.  
April 1 - June, Arsenate of lead and Bordeaux mixture, when fruit is set and petals fall. Repeated 10 to 20 days later.

Harvest-

Time : Bartlett- June 15 - September 15  
Nelis - September.

Method : Picked green by hand into canvas picking bags and transferred to lug boxes. Trees gone over 2 to 5 times.

## Preparing for Market:

- Canning : Delivered in lug boxes
- Dried : Cut in half, stem, calyx, and wormy cores removed, dried on trays in sun for 1/2 day, then trays stacked and fruit permitted to completely cure, sulphured.
- Green : Packed in 40# boxes, measuring 8 1/2" x 11 1/2" x 19 3/4"; contains actually 46# fruit, gross 51# or 52#; 165 pears to box most desirable.

% of Different Grades- 10% culls.

Yields-

	<u>Canning</u>	<u>Dried</u>	<u>Green</u>
Good :	10 tons	3,000#	7 tons
Usual :	6 "	1,500	5 "

Commercial Sections-

Alameda, Lake, Nevada, Placer, Sacramento, Santa Clara, Solano and Sonoma Counties.



COST OF PRODUCING THE PEAR

Value of Land-

Raw land-		
High (with water) -----	\$400.00	per acre
Low " -----	150.00	"
Usual " -----	200.00	"
Developed Orchards-		
High producing -----	2000.00	"
Usual " -----	800.00	"

Cost of Establishing Orchards-

Irrigation system or water right included in price of land.		
Clearing, grading and leveling land for planting (\$ 10 - 75) -----	20.00	"
Trees-----	15.00	"
Setting out -----	6.00	"
Replanting -----	1.50	"

Annual Cost from Setting Out to Self-Sustaining Age-

Pruning -----	5.00	"
Cultivation -----	7.50	"
Irrigation -----	3.00	"

(Cultivation usually carried by intercrop)

Annual Upkeep after Maturity-

Plowing and cultivating -----	7.50	"
Pruning and burning brush (\$ 6 - 12) -----	10.00	"
Spraying (\$10 - 20)-----	15.00	"
Fighting blight (\$10 - 60)-----	20.00	"
Irrigating -----	4.00	"
Propping -----	2.00	"

Cost of Harvest-

Picking (for green fruit) -----	.05	per box
Packing ( Box <sup>11¢</sup> paper <sup>2¢</sup> packing <sup>6¢</sup> ) -----	.19	"
Hauling ( 3 miles) -----	.01	"
Picking (for dried fruit) -----	10.00	per dry ton
Drying and boxing -----	30.00	"



Cost of Harvest - (cont.)

Hauling (3 miles) -----	\$ .50 per dry ton
Picking (for canneries) -----	2.00 per ton
Hauling ( 3 miles) -----	.50 "

Market Value of Yield (f.o.b.)

High -

Canneries -----	50.00 per ton
Green -----	2.25 " box
Dried -----	.12 " lb.

Low-

Canneries-----	20.00 per ton
Green -----	1.00 " box
Dried -----	.03 " lb.

Average-

Canneries -----	30.00 per ton
Green -----	1.25 " box
Dried -----	.08 " lb.

Taxes and Insurance-

To Maturity ----- 3.00 per acre

After Maturity-

Average land -----	2.00 "
Good land -----	4.00 "



REQUIREMENTS AND METHODS OF GROWING PEAS  
(Dry, Green, and Cannery)

Time to Maturity- 6 to 8 months.

Life- Annual

Soil Requirements- Clay loams best, clays next, light soils not good producers. Soils should be at least 3' in depth.

Climatic Requirements- Cool temperature and abundance of humidity (as fogs). Usually grown as a winter crop.

Water Requirements and Irrigation- Abundance of water without over-supply.

Calendar of Operations-

Preparing Seed Bed : November - February, Plowed and worked down to seed bed.

Planting :

Time : November- February, early planting preferred.

Quantity: 60 - 100#

Method and Distance: Rows 30" apart, Seed 2- 4" deep, dropped 2" apart in the row

Care of Growing Crop:

Cultivated until vines cover the ground. No irrigation given.

Varieties :

For seed : Canada or Niles

For Canning: Saxtonia (smooth), Stratagon (smooth) Telephone

Harvest :

When : March - June for market  
June for cannery,  
July and August for seed

How : For market - picked by hand  
For seed - Cut with horse drawn knife cutters  
(similar to bean harvest)

Operations:

Cannery - Hauled immediately

Seed - Piled, cured, and later threshed into 100# sacks (formerly 70#)





Yields-

	<u>Dry peas</u>	<u>Green</u>	<u>Cannery</u>
Good :	1,200#	100 sacks @ 70#	1 1/2 tons
Usual :	800#	70 " "	1 ton

By-Products-

Kind : Vines

Amount: 1 ton green vines  
1/4 ton dry vines

Where and for what sold: Stock feed and mulching

Commercial Sections-

Alameda County

Humboldt "

Monterey "

Santa Clara"



COST OF PRODUCING PEAS

Value of Land-

High -----	\$1000.00 per acre	
Low -----	100.00	"
Average -----	250.00	"

Cost of the Crop-

Preparing land and planting-

Plowing and preparing seed bed (\$2 - 10)-	5.00	"
Seed ( 100# ) ( \$3 - 10) -----	5.00	"
Sowing seed -----	.50	"

Growing the Crop-

Cultivations (\$1 - 2.50) -----	2.00	"
Hoeing (\$ 6 - 20) -----	8.00	"

Harvesting- (Seed Peas)

Cutting (by machine) -----	.50	"
Drying (stacking)-----	.50	"
Threshing (including hauling @ 25¢ per cwt.)-----	3.00	"
Sacks -----	.10 each	
Hauling ( 5 miles) -----	.75 per ton	

Harvesting- (For Cannery-

Picking -----	15.00	"
---------------	-------	---

Harvesting- (For Market ----- 3/4¢ per lb.

Baling straw -----	2.00 per ton
Hauling -----	.50 "

Taxes and Insurance-

Average land -----	2.50 per acre
Good land -----	4.00 "

Market Value of Yield- per lb.

	<u>Dry Seed</u>	<u>Green</u>	<u>Cannery</u>
High -----	.07	.10	.10
Low-----	.03	.02	.04
Average -----	.05	.05	.07

By-Products-

Green Vines -----	.50 per ton	Straw (\$2.50 - 5)-----	4.00 per ton
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Caring for Bearing Orchards (cont.)

## Calendar of Operations-

Pruning : December - January or February to head in  
and shape tree.

Fertilizing: Cover crop grown when soils lack body.

Cultivating: February- March, Plowed and cross plowed,  
worked down. April, May and June cultivated.  
June dragged and rolled.

Fumigating : None

Thinning Fruit: Some thinning ( early May till after  
"June drop") before pit hardens.  
Usually gone over 2 or 3 times.

Harvest-

Time : May - September.

Method : Picked by hand. Trees gone over several times.

Preparing for Market: Packed in 4 basket crates. Total  
weight 20<sup>#</sup>.

Yields-

Good : 600 20<sup>#</sup> crates

Usual : 350 "

Commercial Sections-

Alameda	County	San Joaquin County
Colusa	"	Santa Clara "
Fresno	"	Solano "
Kern	"	Sonoma "
Placer	"	Tulare "
Sacramento	"	Yolo "





COST OF PRODUCING THE PLUM

## Value of Land-

## Raw land-

High (with water) -----	\$ 600.00	per acre
Low           " -----	150.00	"
Usual         " -----	250.00	"

## Developed orchards-

High producing -----	800.00	"
Usual           " -----	600.00	"

## Cost of Establishing Orchards-

Irrigation system or water right included in  
price of land-

Clearing and leveling (\$ 10 - 75) -----	20.00	"
Trees-----	15.00	"
Setting out -----	5.00	"
Replanting -----	1.50	"

## Annual Cost from Setting out to Self-Sustaining Age-

Cultivation -----	5.00	"
Irrigation (if given) -----	3.00	"
Pruning -----	4.00	"
Spraying -----	3.00	"
(Cultivation usually borne by intercrop)		

## Annual Upkeep after Maturity-

Cultivation -----	8.00	"
Spraying -----	5.00	"
Pruning and burning brush (\$8 - 15)-----	10.00	"
Irrigation (if given) -----	5.00	"
Whitewashing -----	2.00	"

## Cost of Harvest-

Picking- -----	.05	per 20# crate
Packing and warehouse expense-----	.15	"
Crate-----	.10	each
Hauling ( 5 miles) -----	.02	per crate

## Market Value of Yield (f.o.b)

High -----	1.00	per crate
Low -----	.40	"
Average -----	.50	"

(Prices subject to much fluctuation)

## Taxes and Insurance-

To Maturity -----	2.50	per acre
After Maturity-		
Average land -----	6.00	"
Good land -----	7.00	"



REQUIREMENTS AND METHODS OF GROWING POTATOES

Time to Maturity- 75 - 90 days for early crop  
150 days for fall crop

Life- Annual

Soil Requirements-

Surface : Mellow, rich, fine sand and silt loam or peat  
Subsoil : Well drained, 3' or more in depth

Climatic Requirements-

Freedom from excessive heat when young, and from severe frosts.

Water Requirements and Irrigation-

Plants must not be subjects to variations in moisture. If irrigated, water best applied at time plant is in blossom; allow 40 days to intervene between last irrigation and harvest. 30" optimum needed (rainfall and irrigation)

Calendar of Operations-

Preparing Seed Bed : For early crop - Plowed November and December,  
worked down.  
For fall crop - January plowed 10" deep, and  
worked down.  
In Delta lands, where previously cropped,  
plowing and planting take  
place simultaneously.

Planting :

Time:

For early crop - January - February  
For fall crop - April 15- June 20

Quantity: 600 - 800#

Method and Distance: 36" rows, 14" - 16" in rows. Planted by hand  
or by machine, using cut potatoes and  
dropping in plow furrows every 3d round.

Care of Growing Crop: 2- 8 cultivations and ridged two months after  
planting. Irrigation usually replaced by  
cultivation.

Varieties: Triumph and Rose (early), Uncle Sam,  
American Wonder (late) and Burbank

New seed imported every 2d or 3d year from Oregon



Calendar of Operations (cont.)

Harvest :

When : Early - June- July  
Mid-season- August- September  
Late - October - November.

How : By machine, plow or by hand.

Operations: Plowed out, picked up by hand, sacked  
(110- 120# per sack) dried and stored.

Yields-

Good : 15,000#  
Usual : 6,000#

% of Different Grades-

Variable

	<u>Salinas</u>
1st --	75%
2nd --	15
Culls -	10

By-Products-

Kind : Culls

Where and for what sold: Cow and hog feed.

Commercial Sections-

Contra Costa County	
Monterey	"
Sacramento	"
San Joaquin	"
San Mateo	"
Santa Barbara	"



COST OF PRODUCING POTATOES

Value of Land-

High -----	\$ 400.00	per acre
Low -----	100.00	"
Usual -----	250.00	"

Cost of the Crop-

Preparing land and planting-

Plowing and preparing land -----	5.00	" (Coast Section)
Plowing for planting -----	1.50	" (Delta section)
Seed ( \$2.00 per sack) -----	12.00	"
Preparing seed- cutting -----	1.00	"
Preparing seed- disinfecting -----	.35	"
Planting (.6 acres per day)-----	.90	"

Growing the Crop-

Cultivating -----	1.00	"
Hoeing -----	1.00	"
Irrigation -----	6.00	"

Harvest-

Digging (machine) -----	1.50	"
Picking up and sacking (after machine)-----	.06	per cwt.
Digging, picking up and sacking (by hand) (10- 20¢)-----	.15	per sack
Sacks -----	.10	per sack
Hauling off ( 5 miles) -----	1.00	per ton
Covering sacks (on levee or in field)-----	1.00	"
Hauling to levee (Delta) -----	.50	"

Taxes and Insurance-

Average land-----	2.00	per acre
Good land -----	3.00	"

Market Value of Yield-

High-----	\$2.50 (1sts)	per cwt.
	1.75 (2nds)	"
Low-----	.65 (1sts)	"
	.50 (2nds)	"
Average-----	1.00 (1sts)	"
	.65 (2nds)	"
Culls-----	.15	"





(Read Preface)

REQUIREMENTS AND METHODS OF GROWING THE PRUNE

Climatic Requirements-

In General : Summer heat, somewhat tempered by cool winds. Trees hardy.

Soil Requirements-

By proper selection of stock can be grown in wide range of soils. Light sands to adobe. Depth of 6' or more required.

Water Requirements- Ample supply of moisture throughout the year. Natural rainfall often aided by irrigation.

Setting Out and Caring for Orchards to Maturity-

Distance Apart of Trees : 28' x 28'  
Average Number per Acre : 55  
Time of Planting Out : December- March  
Age to Self-Sustaining Crop : 7 years  
Age to Maturity : 10 years  
Most Popular Varieties : Prune d'Agen (French) Sugar, Imperial  
Robe de Sargent.  
Length of Profitable Life : Estimated 40 years.

Calendar of Operations to Maturity:

Irrigation : When required, given once in furrows. June  
Pruning : Pruned annually in winter to form head.  
Fertilizing : Cover crops for soils lacking in body. Usually intercropped.  
Spraying : Only when needed for scale, moss and the like.  
Cultivating : Plowed and cross plowed in February and March, harrowed twice, cultivated at 6 weeks intervals, April to November.

Companion Cropping:

Intercropped to berries, small fruits, beans, beets, corn, and sometimes alfalfa. Usually discontinued after trees are 6 years old.

Caring for Bearing Orchards-

Calendar of Operations :

Irrigation : When required, given once in June by furrows or checks.  
Pruning : November- February. To head in and shape tree, dead wood cut out and the brush thinned.



Calendar of Operations (cont.)

Fertilizing : Cover crops grown when soils lack body

Cultivating : February - March, plowed and cross plowed. Worked down. Cultivated once or twice in April, May and June. Then in June dragged and rolled to smooth surface for prunes to fall upon.

Fumigating : None

Thinning Fruit: Not done.

Spraying : February, Lime sulphur or oil emulsion.

Harvest-

Time : August 15 - October 1.

Method : Picked from ground in 3 pickings at intervals of 10 days.

Preparing for Market : Dried in sun after running thru lye.  
(Dry 2 1/4 to 1) Delivered in bulk or in barley sacks.

% of Different Grades-

Prunes sold according to size, i.e., number required to make a pound.

Yields-

Good : 3 tons  
Usual : 2 " (dried product)

Commercial Sections-

Butte	County
Lake	"
Napa	"
Santa Clara	"
Solano	"
Sonoma	"
Sutter	"
Yuba	"



COST OF PRODUCING THE PRUNE

## Value of Land-

Raw land-			
High (with water) -----	\$500.00	per acre	
Low           " -----	150.00	"	
Usual         " -----	300.00	"	
Developed Orchards-			
High producing -----	1000.00	"	
Good         " -----	800.00	"	
Usual        " -----	600.00	"	

## Cost of Establishing Orchards-

Irrigation system or water right included in price of land-			
Clearing, grading and leveling land for planting- (\$6 - 75) -----	20.00	"	
Trees -----	13.00	"	
Setting out -----	6.00	"	
Replanting -----	1.50	"	

## Annual Cost from Setting Out to Self-Sustaining Age-

Cultivation (\$6 - 12) -----	8.00	"	
Irrigation (when given) -----	3.00	"	
Pruning (\$2 - 4) -----	3.00	"	
Spraying -----	3.00	"	
(Cultivation usually borne by intercrop)			

## Annual Upkeep after Maturity-

Cultivation (\$6 - 12) -----	10.00	"	
Spraying - (\$6 - 12) -----	8.00	"	
Pruning and burning brush (.36- 10) -----	8.00	"	
Irrigation (when given) -----	5.00	"	
Whitewashing -----	2.00	"	
Propping or wiring (\$1 - 2.50) -----	2.00	"	

## Cost of Harvest-

Picking up (\$6 - 7) -----	6.00	per dry ton	
Hauling -----	1.00	"	
Dipping, curing and storing -----	6.00	"	
Hauling (2 miles) -----	1.00	"	

## Market Value of Yield (on "prune base")

High -----	.06	per lb.	
Low -----	.02	"	
Average -----	.04	"	

## Taxes and Insurance-

To Maturity -----	2.50	per acre	
After Maturity-			
Average land -----	6.00	"	
Good land -----	8.00	"	



REQUIREMENTS AND METHODS OF GROWING RICE

Time to Maturity- 180 days

Life- Annual

Soil Requirements-

Surface : Level, heavy clays or loams

Subsoil : Stiff, tenacious, impervious to water, if water is valuable.

Depth : Surface soil - 1 to 2'

Weeds : Freedom from excessive growth of water weeds.

Climatic Requirements- Warm, sunny weather; freedom from fog; warm nights; ability to dry lands for harvest.

Water Requirements- 5 to 8 acre feet - June 1 to September 1 - continuous flow necessary. Land must be properly leveled as for alfalfa, checked on the contour, and provided with gates. Ability to drain lands for harvest is essential.

Calendar of Operations-

Preparing Seed Bed : Plowed 6" October- November, or December, double disked and harrowed until very smooth March-April 15.

Seeding :

Time : April 1 - June 1 (Earlier planting preferable)

Quantity Seed: 75 - 100#

Method and Distance: Drilled (a few broadcast)

Care of Growing Crop:

Soil kept moist by intermittent irrigation (2 - 6 irrigation needed, average 3,4 -- continued up until June 15)

When 6 to 8" high, turn on ponds of water (June 15-July 1). Water held till time to dry fields for harvest (10 days). Should not be turned off until kernels at base of head will break solid and ragged. Must be forced by water to stiff dough stage. Pull weeds, scare birds.

Varieties : Wataribune (Japanese rice) Ikoko (Japanese)  
Italian ; Heddegard's Favorite (Jap selection)





Calendar of Operations (cont.)

## Harvest :

When : September 1st to November 15th. When lower kernels are translucent, pearly gray, flinty appearance.

How : As for any grain after drawing off water. Cut with self binder, shock, cure and thresh.

(Sacramento Valley- Harvest of a given planting should be completed in 10 days from start of harvest. 10 or 12 days later, thresher starts and must be completed within 10 to 12 days.)

Yields-

	<u>Plains</u>	<u>Overflow</u>
Good :	2700#	4500#
Usual :	2000#	3500#

These are 1st year yields. Deduct 1/3 for subsequent yields.

## Commercial Sections-

Butte County  
 Colusa     "  
 Fresno     "  
 Glenn      "  
 Kern        "  
 Kings      "  
 Tehama     "  
 Tulare     "  
 Yolo        "



COST OF PRODUCING RICE  
(on clean land)

Value of Land, including Water-

High -----	175.00	per acre
Low -----	40.00	"
Usual -----	75.00	"

Cost of the Crop-

Preparing land and planting-

Levees, leveling and gates (\$1 - 15)-----	2.50	"
Fall plowing -----	3.00	"
Preparing seed bed -----	2.00	"
Cost of seed (100# @ 3¢) -----	3.00	"
Seeding (broadcasting and harrowing in)---	.75	"

Cost of Growing crop-

Water (7 feet- range \$5 - 8)-----	7.00	"
Applying water (\$1 - 5)-----	2.00	"
Pulling weeds and scaring birds (3-15)---	5.00	"

Harvest-

Binding -----	2.50	"
Cocking -----	2.00	"
Haul to thresher and threshing -----	.20	per cwt. (10¢ below Fresno)
Sacks -----	.09	per sack
Twine ( 3 to 5# @ 9 - 12¢)-----	.40	per acre
Haul to warehouse ( 5 miles) -----	1.00	per ton
Warehouse charges -----	1.00	"

Market Value of Yield-

High -----	2.05	per cwt.
Low -----	1.65	"
Average -----	1.85	"

Taxes and Insurance-

Average land -----	.75	per acre
Good land -----	1.00	"



REQUIREMENTS AND METHODS OF GROWING SORGHUM

Time to Maturity- 100 - 180 days

Life- Annual

Soil Requirements-

Surface: Will grow on poorer, drier land than any other cereal, but responds to good handling. 3' of good moisture retaining rather than heavy loam soil desirable.

Climatic Requirements- Warm nights, and hot sunny days, no frost.

Water Requirements and Irrigation- Moisture equivalent to 15". If available, throughout growing season.

Calendar of Operations-

Preparing Seed Bed : Fall - Plowed 6 - 8"  
March - Replowed 6" deep or disked, and worked down into seed bed.  
Sometimes sown on grain land in June or July following the removal of the cereal. Irrigated and plowed before seeding.

Planting:

Time : Non-saccharine, April 1 to July 1  
Saccharine, April 1 to July 1

Quantity of Seed:

Non-saccharine, 6 - 10#  
Saccharine, 4 - 6#

Method and Distance:

Non-saccharine, 3' rows, 8" apart in row  
Saccharine, 3' rows, 4" apart in row

Care of Growing Crop:

Cultivated once or twice during early period of growth ( May and June). Generally grown without irrigation, where water table is high, except when following grain crop. Irrigation then given before preparing seed bed.

Varieties :

Non-saccharine- Dwarf Milo )  
Duro (White and Brown) )  
(Egyptian corn) ) For forage, grain, and  
Feterita ) silage  
Shallu (Egyptian wheat) )



## Varieties (cont.)

## Saccharine-

Amber	)	
Orange	)	For forange and silo
Sumac	)	
Honey	)	

Harvest-

When: Non-saccharine - September  
 Saccharine - "

How : Non-saccharine and saccharine-

Fodder and silage cut by hand or machine in field,  
 when seeds harden- hauled to silo, cut and  
 blown into silo.

For seed- Heads cut by hand, dried, threshed by  
 stationary thresher.

Yields-

	<u>Grain</u>	<u>Silage</u>	<u>Cured Fodder</u>
Good :	2500#	12 tons	5 tons
Usual :	1200#	8 tons	4 tons

By-Products-

Kind : Some fodder from grain varieties

Amount: Variable

Where and for what sold: Sold or used for pasturage.

Commercial Sections-

Imperial Valley

Sacramento "

San Joaquin "





COST OF PRODUCING SORGHUM

## Value of Land-

High -----	\$300.00	per acre
Low -----	50.00	"
Usual - irrigated -----	150.00	"
Usual - not irrigated-----	100.00	"

## Cost of the Crop-

## Preparing land and planting-

Fall plowing -----	1.75	"
Spring plowing -----	1.25	"
Working down into seed bed-----	1.75	"
Seed- Non-saccharine (10# @ 50¢)-----	.50	"
Saccharine ( 5# @ 5¢) -----	.25	"
Planting -----	.30	"

## Growing the crop-

Cultivating and furrowing -----	2.50	"
Water -----	1.50	"
Applying water -----	.75	"

## Harvesting-

## Grain-

Cutting heads (\$1.50 - 5) -----	3.00	"
Threshing -----	.20	per cwt.
Sacks -----	.08	per sack
Hauling ( 5 miles) -----	1.00	per ton

## Cured Fodder-

Cutting by hand -----	1.50	per acre
Shocking -----	1.25	"
Hauling ( 1 mile) -----	.75	per ton

## Silage-

Cutting by hand -----	1.75	per acre
Hauling ( 1 mile) -----	.75	per ton
Siloing ( \$ 2- 5) -----	3.00	per acre

## Taxes and Insurance-

Average land -----	2.00	per acre
Good land -----	2.50	"

## Market Value of Yield-

## Grain-

High -----	2.00	per cwt.
Low -----	1.10	"
Average -----	1.30	"



REQUIREMENTS AND METHODS OF GROWING STOCK BEETS

Time to Maturity- 120 - 160 days

Life- Annual

Soil Requirements- Level, deep, rich, fertile, black loam, at least 4' in depth.

Climatic Requirements- Freedom from excessive heat during germination and early growing periods.

Water Requirements- Plenty of moisture, either from irrigation or natural sources.

Calendar of Operations-

Preparing seed bed: September - April, plowed, reseeded and worked into shape.

Planting :

Time : October to May

Quantity: 12#

Method and Distance: 24 - 36" rows

Care of Growing Crop: Cultivated 4 - 6 times at monthly intervals. Thinned to 15" apart in rows. Irrigated when needed- usually none given to winter plantings. Spring plantings heavily irrigated (8") in June and August, or lightly irrigated (3") monthly beginning in June.

Varieties:

Mammoth Long Red, One-half Sugar, Golden Tankard.

Harvest:

Time : When wanted for stock feed.

Method : Dug by hand or plowed out as needed, hauled to stock and fed tops and all.

Yields-

Good : 25 tons

Usual : 18 "

Commercial Sections-

Raised only for stock feed in dairy sections.



COST OF PRODUCING STOCK BEETS

## Value of Land-

High -----	\$400.00 per acre	
Low -----	150.00	"
Usual -----	250.00	"

## Cost of the Crop-

## Preparing land and planting-

Preparing land -----	5.00	"
Cost of seed ( @ 15¢)-----	1.80	"
Seeding -----	.25	"

## Cost of Growing the Crop-

Cultivation -----	2.00	"
Thinning -----	5.00	"
Hoeing -----	2.00	"
Irrigation -----	4.00	"

## Cost of Harvesting-

Plowing -----	2.00	"
Fulling and loading -----	.30 per ton	
Hauling ( 1/2 mile)-----	.25	"

## Taxes and Insurance-

Average land -----	2.50 per acre	
Good land -----	3.00	"

## Market Value of Yield-

(Not raised for sale)



(Read Preface)

REQUIREMENTS AND METHODS OF GROWING SUGAR BEETS

Time to Maturity- 200 - 300 days

Life- Annual

Soil Requirements-

Surface : Strong, rich, deep fertile loam best; will withstand considerable alkali.

Subsoil : Compact clay, good moisture retainer. No hardpan.

Depth : Surface soil - 4' or more

Will grow over a variety of soils. Light soils produce small tonnage high in sugar, heavy, moist soil, heavy tonnage low in sugar.

Climatic Requirements-

70° average summer temperature with plenty of sunshine. Grow best in cooler sections where moisture is plentiful, altho not hurt by frosts. Hardy. In hot sections planted early enough to permit 8 leaves to develop before hot weather comes.

Water Requirements-

Amount : 3'. Proper distribution of rainfall or irrigation to provide ample moisture during early stages of plant with diminishing amounts towards ripening.

When needed: When plants are from 8 leaves up to within 6 weeks of maturity.

Calendar of Operations-

Preparing Seed Bed :

Fall Planting : Plowed 10 - 14" deep in August or September, irrigated, worked into shape.

Spring Planting: Plowed 14" in November or December, replowed in February. Worked into shape.

Seeding:

Time : Fall -- November 1 - December 1  
Spring- January 15 - May 1





Calendar of Operations (cont.)-

## Seeding (cont:

Quantity of Seed : 15#

Method and Distance: 18 - 20" rows 'usually 18, 20 or 22")

## Care of Growing Crop:

Irrigated two times (May and June or July) thinned to  
8 - 12" apart when plants have 4- 6 leaves.  
Cultivated at least four times at 10 to 20 day  
intervals, beginning in April. Hoed two times-  
May and July.

## Varieties :

Imported or domestic varieties; seed sold by factory.

## Harvest :

When : According to maturity of beets and needs of mill.

How : Loosened with plow; pulled, topped and loaded by  
hand. Hauled by wagon direct to mill or to  
railroad.

Time : August to January.

Yields-

Good : 15 tons

Usual : 10 "

By-Products-

Kind : Beet tops

Amount: Equal to 40% of yield as given.

Where and for what sold: Sold for feed.

Commercial Sections-

Alameda	County	San Joaquin	County
Los Angeles	"	Santa Barbara	"
Monterey	"	Santa Clara	"
Orange	"	Ventura	"
	Yolo	County	



COST OF PRODUCING SUGAR BEETS

Value of Land-

High -----	\$600.00	per acre
Low -----	150.00	"
Usual -----	300.00	"

Cost of the Crop-

Preparing land and planting-

Preparing seed bed -----	7.00	"
Seed ( 15# @ 15¢)-----	2.25	"
Seeding -----	.50	"

Growing the Crop-

Irrigating - labor (\$1 - 4) -----	3.00	"
Irrigating - water (\$2 - 8)-----	4.00	"
Thinning and hoeing twice (\$5 - 8)-----	7.00	"
Cultivating ( 4times)-----	2.00	"

Harvesting-

Plowing out (\$2.50 - 5)-----	3.00	"
Pulling, topping and loading-		
10 tons or under ( 75¢ - \$1.50) --	1.00	per ton
10 - 15 tons ( 50¢ - \$1.00)---	.90	"
15 tons and over ( 50¢ - \$ .90) --	.80	"
Hauling ( 5 miles) -----	.50	"

Taxes and Insurance-

Average land -----	3.00	per acre
Good land -----	5.00	"

Market Value of Yield-

High -----	7.50	per ton
Low - -----	4.50	"
Average -----	5.50	"

By-Products-

Tops -----	2.00	per acre
------------	------	----------



(Read Preface)

REQUIREMENTS AND METHODS OF GROWING SWEET POTATOESTime to Maturity- 100 - 160 daysLife- AnnualSoil Requirements- Warm, sandy loam 18" or more in depthClimatic Requirements- Plenty of heat and sunshine, freedom from frost.Water Requirements- Moist soil without standing water. Scarcity of water desirable.Calendar of Operations-

Preparing Seed Bed : January - March, plowed  
 April, Replowed and worked down.

## Planting :

Time : April - June 15

Quantity: 7,000 to 14,000 sets. (500# seed or 10,000 sets on average)

Method and Distance: Set on ridges made by plowing 2 furrows together. Rows 3 - 4', plants 8 - 15".

## Care of Growing Crop:

May , Irrigated at time of setting out plants and sometimes once or twice again at 3 - 4 weeks intervals.

June, July and August, Cultivated 3 times at 2 to 3 weeks intervals especially after irrigating. Sometimes plowed after irrigating.

## Varieties:

Merced Sweet	Southern Queen
California Yellow	Jersey Red

## Harvest:

Time : August - December

Method: Tops cut by hand, potatoes plowed out, picked up by hand and shipped in 100# sacks or crates.  
 Sometimes harvested with a potato machine

Yields-

Good : 7 tons

Usual : 3 "

Commercial Sections-

Butte, Fresno, Merced, Orange and Stanislaus Counties.



COST OF PRODUCING SWEET POTATOES

## Value of Land-

High -----	\$350.00 per acre
Low -----	100.00 "
Usual -----	150.00 "

## Cost of the Crop-

## Preparing land and planting-

Cultivation (\$4- 10) -----	6.00 "
Plants - Home grown -----	5.00 "
Purchased -----	8.00 "
Planting (10,000 plants ( \$4- 10))-----	5.00 "
Irrigation (water and labor) -----	3.00 "

## Growing the Crop-

Irrigation (water and labor) -----	5.00 "
Cultivation ( 3 times @ 50¢) -----	1.50 "

## Harvesting-

Digging and sacking (10 - 20¢)-----	.15 per 100#
Crates -----	.17 each or fur- nished by buyer
Sacks -----	.09 each
Hauling ( 5 miles) -----	1.50 per ton

## Taxes and Insurance-

Average land -----	1.25 per acre
Good land -----	1.50 "

## Market Value of Yield-

High -----	7.00 per 100#
Low -----	.50 "
Average -----	1.25 "





REQUIREMENTS AND METHODS OF GROWING THE TOMATO

Time to Maturity- 75 - 140 days

Life- Annual

Soil Requirements- Rich, warm, sandy loams, or loams well drained, at least 4' in depth.

Climatic Requirements- No frost; warm sunny weather.

Water Requirements- Moderate, but soil must not dry out. Over-irrigation promotes tendency to disease and foliage instead of fruit. Often not required.

Calendar of Operations-

Preparing for Planting : December - February, plowed 8" deep, Replowed 6" and worked down.

Planting :

For spring-

Time : February - May

For fall crop-

Time : June and July

Quantity : 900 - 1200 plants

Method and Distance: In rows 6' x 6' to 7' x 7'

Care of Growing Crop- Cultivated 2 - 5 times at 10 - 14 days intervals, beginning June 1st. Hoed once around plants in June.

Varieties: Stone, Spark's Earliana, Trophy

Harvest :

Time : June - until killing frosts (December 1)

Method: Vines are picked over several times ( 4 to 10 days)

For Canneries : Picked when ripe and delivered in 60# lug boxes.

For Shipping : Picked when blushed and packed in 24# crates ( 4- 6# baskets) or 30# lugs.

Yields-

Good : 20 tons

Usual : 10 "

% of Different Grades- Canneries get 10 - 75% of crop, rest shipped to fresh markets. The shipping crop usually runs from 4 to 6 tons.

Commercial Sections-

Alameda, Los Angeles, Merced, Orange, Santa Clara and Sonoma Counties.



COST OF PRODUCING THE TOMATO

## Value of Land-

High -----	\$ 1000.00	per acre
Low -----	150.00	"
Usual -----	200.00	"

## Cost of the Crop-

## Preparing land and planting-

Preparing land and marking -----	5.00	"
Plants - Home grown -----	.50	"
Purchased -----	5.00	"
Planting -----	2.00	"

## Growing the Crop-

Cultivation -----	2.00	"
Hoeing -----	2.00	"

## Harvest-

Picking for cannery -----	2.00	per ton
Picking for shipment -----	3.00	"
Hauling to cannery (3 miles) -----	1.00	"
Crate, packing and shipping (  ..(24#)-----	.25	each
Lug, packing and shipping (30#)-----	.20	"

## Taxes and Insurance-

Average land -----	4.00	per acre
Good land -----	7.50	"

## Market Value of Yields-

	<u>For Cannery</u>	<u>For Market</u>
High -----	8.00	3¢ per lb.
Low -----	6.00	3/4¢ "
Average -----	7.00	1 1/4¢ "



REQUIREMENTS AND METHODS OF GROWING THE WALNUT

Climatic Requirements-

In General: Will not stand frost outside of dormant period nor intense dry heat. Summer mean temperature of 60° - 80° with warm fogs best. Moderate temperature without extremes best.

Soil Requirements-

Surface : Fairly heavy, of good water retaining capacity.  
Subsoil : Deep, well drained, heavy, but not impervious.  
Depth : 10' or more.

Water Requirements- Amount must be uniform and abundant. Usually 15 - 30" , applied from May to September, is practice.

Setting Out and Caring for Orchards to Maturity-

Distance Apart of Trees : 50' x 50' or 60' x 60' with interplants.  
Average Number per Acre : 12 or 17  
Time of Planting Out : March  
Age to Self-Sustaining Crop: 8 years  
Age to Maturity : 20 years  
Most Popular Varieties : Eureka, Franquette, Mayette (for North and Central) Placentia (for South)  
Length of Profitable Life : Estimated 50 years.

Calendar of Operations to Maturity:

Irrigation : To keep constant moisture supply available all year round. This means irrigating every 6 to 8 weeks from April to November while trees are small. In favorable localities grown without irrigation.

Pruning : Done only to remove cross and lower limbs and to shape tree. Done in winter.

Fertilizing : None, except for companion crops.

Spraying : Usually not required.

Cultivating : Usually such as is required by companion crops.

Companion Cropping : Interplant with figs, peaches, grapes, or berries, alfalfa, or beans, if water and fertility is available. Can be practiced for 7 or 8 years.



Caring for Bearing Orchards-

## Calendar of Operations :

- Irrigation : Irrigated in May to September, with an occasional late fall application (November)
- Pruning : Open heads following harvest, and cut out cross, low or broken limbs.
- Fertilizing : Cover crop of vetch or Melilotus clover (October -December) after nuts are gathered.
- Cultivation : Not of first importance. Plowed in February or March, harrowed and cultivated. Cultivated every 3 to 6 weeks.
- Spraying : Usually not required.

Harvest-

Time : September and October.

Method : Picked from ground after fall naturally or shaken off with hooked poles.

Preparing for Market: Washed, dried, graded, bleached.

% of Different Grades- (variable)

#1 - 50 - 85%

#2 - 40 - 10

Culls- 10 - 5

Yields-

Good : 1500#

Usual : 800#

Commercial Sections-

Los Angeles County  
Orange           "  
San Joaquin     "

San Luis Obispo County  
Santa Barbara   "  
Ventura           "





COST OF PRODUCING THE WALNUT

Value of Land-		
Raw land-		
High (with water) -----	\$1200.00	per acre
Low " -----	250.00	"
Usual " -----	400.00	"
Developed Orchards-		
High producing -----	2000.00	"
Usual " -----	1000.00	"
Cost of Establishing Orchards-		
Clearing, grading and leveling land for planting (50 - 30) -----	20.00	"
Trees -----	18.00	"
Setting out -----	4.00	"
Annual Cost from Setting Out to Self-Sustaining Age-		
Items usually borne by intercrops, Otherwise annual cost is -----	30.00	" if irrigated
Annual Upkeep after Maturity-		
Fertilizer and manure -----	25.00	"
Cover crop -----	5.00	"
Plowing and cultivating -----	8.00	"
Irrigation -----	4.00	"
Water -----	12.00	"
Pruning -----	3.00	"
Cost of Harvest-		
Picking -----	18.00	per ton
Drying -----	2.00	"
Hauling ( 5 miles) -----	1.00	"
Processing at Station -----	5.00	"
Selling -----	20.00	"
Market Value of Yield-		
High -----	.16	1/2¢ per lb.
Culls -----	.08	per lb.
Low -----	.10	"
Culls -----	.05	"
Average -----	.12	"
Culls -----	.07	"
Taxes and Insurance- After Maturity-		
Average land -----	10.00	per acre
Good land -----	15.00	"



REQUIREMENTS AND METHODS OF GROWING WHEAT

Time to Maturity- 120 - 180 days

Life- Annual

Soil Requirements-

Surface : Heavier soil types 24" in depth, presence of organic matter, less than .25 of 1% alkali (Same as barley, but requires more organic matter)

Climatic Requirements-

Wheat will withstand less heat than barley, otherwise conditions are about the same.

Water Requirements and Irrigation-

Requires more moisture than barley. 30" optimum. Only 4.7% of acreage irrigated.

Calendar of Operations-

Preparing Seed Bed : November - February plowed 4 - 8" deep. Disked or harrowed before planting.

Planting :

Time : October 1 to February 1

Quantity: 90# - 110# broadcast  
45# - 100# drilled

Method and Distance: Broadcasted and harrowed in or drilled.

Varieties:

White Australian (Blue stem)  
Club  
Sonora  
Galgalo  
Defiance

Harvest :

When : June 15 - September 1st.

How : By heading in fog belts.  
By combines in valley.  
By biners in special sections.



## Harvest (cont.)

Operations: Threshed either from shock by stationary outfit  
or in combined harvester.

Yield-

	<u>Irrigated</u>	<u>Dry Farmed</u>
Good :	1200#	600#
Usual :	1000#	500#

By-Products-

Kind : Stubble

Amount : Depends on amount of lodging and kind of harvest.

Where and for what sold: Sold or used for feed @ 25¢ per  
acre (range 10¢ to \$1.00).

Commercial Sections-

Madera County

Monterey "

San Luis Obispo County



COST OF PRODUCING WHEAT

Value of Land-	<u>Irrigated Lands</u>	<u>Dry Farmed</u>
High -----	\$250.00 per acre	\$60.00
Low -----	40.00 "	20.00
Usual -----	100.00 "	30.00
 Cost of the Crop-		
Preparing land and planting-		
Summer fallow (ready for seed)----	2.50 "	
Plowing -----	1.75 "	
Harrowing before seeding -----	.25 "	
Seed ( @ 1 1/3¢ = (1.00-2.00)-----	1.50 "	
Treating seed -----	.04 "	
Broadcasting -----	.15 "	
Harrowing after seeding -----	.35 "	
 Harvesting-		
Combined harvester (10 sacks or less	1.50 "	
11-20 " or more	2.50 "	
Over 20 sacks )	3.50 "	
Sacks -----	.08 per sack	
Twine -----	.003 "	
Hauling (10 miles) -----	1.00 per ton	
 Taxes and Insurance-		
Average land -----	1.00 per acre	30¢
Good land -----	1.50	40¢
 Market Value of Yield-		
High -----	1.75 per cwt.	
Low -----	1.40 "	
Average -----	1.50 "	





WORK CAPACITY OF FARM MACHINESNOTE

Work capacity varies through wide limits, on account of soil and crop conditions, speed and stamina of horses, size and shape of fields, condition of machine, and experience and intelligence of operator. These figures are for maximum work. The figures are for a general guide after deducting for these items. These figures are subject to a variation of 20% either way for special conditions - good or bad.

The average horse walks 1 1/2 miles on loose ground per hour, 1 3/4 miles on hard ground doing heavy work, 2 miles doing light work, and 2 1/8 miles on road.

For number of men in threshing and similar occupations, see "Day's Work for a Crew".

Kind of Machine	Usual Size	Number Horses Required	Number Men Required	Acreage Covered in 10- hr. day
Bean Cutter	2 - row	1	1	10 A.
Broadcasting barley	--	2	1	30
Binding small grain	5'	3	1	10
" "	7'	4	1	15
" "	8'	5	1	18
" corn	1 - row	3	1	7
Cultivating crops-				
Covering 24" of space	--	1	1	4
" 30" "	--	1	1	5
" 42" "	--	2	1	6 1/2
" 48" "	--	2	1	7 1/2
" 66" "	--	2	1	10
" 84" "	--	2	1	12
Cultivating land in preparing for crops	5'	5-6	1	8
" "	6'	6-8	1	10
Drilling small grain	12 tube	2	1	10
" "	16 "	3	1	15
" "	20 "	4	1	20
Disk harrow (not lapped)	4'	4	1	5
" "	6'	6	1	9
" "	8'	8	1	14
Spike harrow "	8'	2	1	12
" "	16'	4	1	25

(continued next page)



Table cont.

Kind of Machine	Usual Size	Number Horses Required	Number Men Required	Acres Covered in 10- hr Day
Spike harrow (not lapped)	24'	6	1	45 A.
" " " "	32'	8	1	60
Spring Tooth Harrow (not lapped)	6'	3	1	9
" " " "	8'	4	1	12
Heading small grain	10'	6	1	22
" " " "	12'	6	1	26
Spreading manure	75 bu.	2	1	12 loads
Mowing	5'	2	1	8 A.
Planking land	6'	2	1	10
" "	12'	4	1	20
Planting beets	4- 22" rows	2	1	12
" corn or cotton	1- 42" "	1	1	8
" " " "	2- 42" "	2	1	14
" beans	4- 28" "	2	1	18
" potatoes	1- 36" "	2	1	6
" "	2- 36" "	3	2	14
Plowing, walking plow	12"	2	1	1.6
" "	14"	3	1	2.3
" sulky	14"	3-4	1	2.5
" - gang	2- 14" bottoms	4-6	1	5.2
" - " "	2- 12" "	3-5	1	4.0
" - " "	3- 12" "	5-8	1	6.6
" - " "	2- 8" "	2-3	1	2.8
" - " "	3- 8" "	3-4	1	4.2
" - " "	4- 8" "	4-6	1	5.6
" - " "	5- 8" "	6-8	1	7.0
" engine gang	4- 14" "	14-18 <sup>(a)</sup>	2	8
" "	6- 14" "	20-25 <sup>(a)</sup>	2	12
" "	8- 14" "	25-30 <sup>(a)</sup>	2	16
" deep tillage	2- 20" disks	6	1	2.5
Potato digger	1- row	4	1	5
Rake-(self dump)	12'	2	1	20
Ringrolling	6'	6	1	6
"	8'	8	1	8
Shredder and husker, corn	4 roll	10-12	2	350 bu.*
" " " "	6 "	15-20	2	600 "
" " " "	8 "	25	2	800 "
Land roller	12'	4	1	20 A.
Marking planting	12'	2	1	25
Drilling lime	10'	2	1	11
Drilling fertilizer	10"	3	1	13

(a) Horse power at drawbar

(Continued next page)

\* To change to hundredweight: 56# corn = 1 bu.  
60# wheat = 1 "  
50# barley (Cal.) = 1 bu.  
32# oats = 1 bu.



Table cont.

Kind of Machine	Usual Size	Number Horses Required	Number Men Required	Acreage Covered in 10 - hr. Day
Tedding hay	6'	2	1	10 A
Weed cutting	6'	2	1	10
Fresno scrape- checking land	5'	4	1	1/3

Kind of Machine	Size	Horse Power Required	Number of Men to Operate	Number Revolutions per min.	Capacity per 10- hr. Day
Ensilage cutter	42" fly wheel	15- 20	1	--	120 tons
"	36" "	12- 15	1	--	100 "
"	30" "	8- 12	1	--	70 "
Threshing- Separator (pea & bean)	12"	2- 4	?	300-350	90 bu.*
"	20"x32"	6- 8	?	"	400
" (wheat)	18"x36"	15- 18	?	1050-1150	600
"	28"x50"	30- 40	?	750- 800	750
"	36"x58"	50- 60	?	"	1600
"	40"x62"	60- 80	?	"	2000
" (oats & barley)	18"x36"	15- 18	?	1050-1150	2200
"	28"x50"	30- 40	?	750- 800	2750
"	36"x58"	50- 60	?	"	3500
"	40"x62"	60- 30	?	"	3750

\* See footnote, p. 121



Rules for Determining Work of Implements

1. The daily duty per foot of width is:

2	acres	for	plows
1.7	"	"	spike tooth harrows
1.5	"	"	spring " "
1.4	"	"	disk harrows
1.6	"	"	drills
1.6	"	"	mowers
1.5	"	"	rakes
2	"	"	grain binders

2. Most usual width per horse is:

.46'	of	plows
3.9	"	spike tooth harrows
2.4	"	spring " "
2.4	"	disk harrows
2.4	"	drills
2.5	"	mowers
6.0	"	rakes
2.0	"	grain binders





A DAY'S WORK FOR A MAN

## Beans --

Weeding after planting -----	5 acres
Shocking after cutting -----	3 1/2 acres
Picking -----	1500#
Hoeing and planting skips -----	1/2 acre

## Corn--

Hoeing standing corn-----	1 - 1 1/2 acres
Husking " " -----	50- 80 bu. (1 acre)
Picking " " -----	70 - 140 bu.
Planting by hand -----	4 - 5 acres
Suckering -----	2 acres

## Grain --

Shocking -----	10 - 14 acres
Stacking -----	5 - 6 "
Bucking sacks behind harvester and placing in field-----	600 per day barley 500 " " wheat

## Knapsack Spraying--

For rows 2' apart -----	2 acres
" " 3' " -----	3 "

Loading grain - 1 man -----	1 1/2 hrs. to 3 ton load
-----------------------------	-----------------------------

## Mangel Wurzels--

Weeding and thinning -----	1/6 acre
Hoeing -----	1/2 "
Pulling and loading -----	1/4 "

## Milking and Caring for Dairy Cows--

(man for each)-----	10 - 12 head per day
Milking only -----	26 - 30 " "
" " -----	8 - 9 cows per hr.

## Planting--

Setting out cabbages-----	1/2 - 1 acre
" " onion plants-----	1/20 "
Planting tomatoes -----	1200 plants
Setting grape vines- rooted-----	200 vines
" " " - cuttings -----	1000 "
Digging holes and planting fruit trees-----	75 trees

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## Potatoes--

Cutting seed, by hand -----	12 bu.
" " " machine-----	28 "
Planting by hand -----	2 acres
Picking up-	
After ordinary plow-	
75 bu. crop -----	60 bu.
125 " " -----	75 "
200 " " -----	100 "
After elevator digger-	
75 bu. crop -----	80 "
125 " " -----	100 "
Digging and Picking up by Hand ---	
1 - 125 bu. -----	30 "
126 - 200 " -----	40 "

## Sawing Wood--

2 cuts per stick -----	1 1/2 cords (Eastern cord)
3' cuts per stick -----	1 "

Seed Sowing by Wheelbarrow Sower ----- 18 acres

## Sheep--

## Caring for-

Herding -----	2000 head
Dry feeding -----	300 "

## Shearing-

(one time a year) -----	33 per day by hand
(twice a year) -----	75 " " " clippers
(twice a year ) -----	88 " " " "

## Shingling-

Experienced-----	3000 shingles (12 bundles)
Not experienced-----	2000 " ( 8 " )

## Sugar Beets-

Thinning -----	1/2 acre
----------------	----------

## Vines--

Sulphuring (20#)-----	12 acres
Tying young vines-----	1000 vines
Hops, Picking -----	300#



## Sweet Potatoes--

Setting -----	10,000 sets
Digging by hand -----	3,000 - 3,000#
" " machine (2 horses, 1 man)-----	6,000 - 8,000#

## Tiling--

Digging 3' ditch -----	100'
" 4' " -----	80'
Laying 4 - 6" tile -----	1800 - 2000"

Unloading grain at warehouse -----	2- 30 min.to 8 ton load
------------------------------------	-------------------------

## Fruit--

Picking up figs -----	900#
" apples and pears by day labor ----	40 loos boxes
" " " " " contract ----	100 " "
" cherries -----	100#

Pruning young trees-----	600 trees
--------------------------	-----------

Propping -----	75 "
----------------	------

Irrigating -----	2 - 5 acres
------------------	-------------

Picking prunes -----	1 ton
----------------------	-------

Shaking trees and picking up prunes-----	4- 5 acres
--	------------

Pruning old trees -----	20- 25 trees
-------------------------	--------------



A DAY'S WORK FOR A CREW

<u>Operations</u>	<u>Crew</u>	<u>Amount Done</u>
Baling hay	8 men 9 horses	35 tons
	9 " 14 "	60 "
Beans, weighing and loading sacks.	3 men	1,000 sacks
Hauling- Hay to stack-		10- 12 tons per wagon
Various Commodities- Distance-		
1 mile	1 man 2 horses	9 loads in 2 days
2 "		7 " " 2 "
3 "		5 " " 2 "
5 "		2 " " 1 day
Potatoes from field- Size of load-		
40 bu.	1 man 2 horses	225 bu. per day
60 "		350 " " "
70 "		450 " " "
Heading-	<u># men</u> <u># horses</u> <u># wagons</u>	
	6            18            3	25 - 30 acres headed
Spraying-		
An average crew of 4 men (1 to drive and run engine, 2 to spray, 1 to mix) and 2 horses will spray--		300 trees if 12' or less in height
		175 if 12 - 20'
		125 if over 20'
"                    "                    "		1800 gals.
Stacking Hay-	<u># men</u> <u># horses</u>	
	2            2	7 tons
	2            4	11 "
	4            4	17 "
	4            6	21 "
	6            6	24 "
	8            8	30 "
	19           15	60 "





<u>Operation</u>	<u>Crew</u>	<u>Amount Done</u>
Threshing--		
From stack-		
Wheat, oats and barley	12 men 6 horses	60,000#
Alfalfa seed		3,000#
From shock-		
Wheat, oats and barley	20 men 14 horses	75,000#
With combine- with engine or	26 - 32 horses	
<u>Cut</u>	<u># Men</u>	<u>Crop</u> <u>Yield</u> <u># Acres</u>
14'	5	Barley      12 sacks      35
20'	5	"            5      "      60

## Corn for Silage-

2 men will cut 15 tons per day each

1 man with 2 horses, can haul to silo 8 to 10 tons per  
day, if haul is not greater than 1/2 mile.



ANNUAL AMOUNT OF WORK REQUIRED TO CARE FOR LIVE STOCK

<u>Care of-</u>	<u>Man hours</u>	<u>Horse Hours</u>
Stallion or jack	150	10
Dairy cow	150	20
Work horse	80	5
10 cattle	200	10
100 ewes	50	3
10 broods and pigs to weaning time	300	50
10 hogs (not brood sows)	75	15
100 hens	150	20
Raising 200 chicks	150	20



COST OF BUILDING MATERIALS.

Lumber prices--

Oregon Pine - sizes, 1" x 2" to 1" x 12" inclusive

Rough common - \$20 per M - 8 to 24' long. All specified lengths add \$2.

Common permits- 35% #2; if all #1 add \$2.

2" x 3" to 4" x 4" inclusive	4 - 8' -----	\$15
	12 & 14' -----	18
	to 32'	
	9, 10 & 16 -----	20
3" x 6" to 3" x 10", 4" x 8", 4" x 10"	) 8'-24'	
2" x 8" to 2" x 12", 3" x 12", 4" x 6", 4" x 12")	long -	18
6" x 6" to 12" x 12" )	8' - 24' long -----	20

Pine Flooring

	8' and up #1	6' and up #2	4' and up #3
1" x 3"	\$42	\$24	\$18
1" x 4"	34	32	22
1" x 6"	34	30	22

Pine Ceiling T & G, S one side

	6' and up #1	6' and up #2	#4
3/8" x 4" and 6"	\$24	\$20	\$13
1/2" x 4" and 6"	27	23	15
3/4" x 4" and 6"	31	27	21

Pine Rustic (Siding)

		#2
1" x 6" - 10 to 24'		\$30
1" x 8" - "		34
1" x 10" - "		36



Redwood

<u>Common</u>	35%	#2 ; if all #1 add \$2 per M	
2" x 3", 2" x 4", 2" x 6", 2" x 8", 3" x 6" -- 10 - 20'			\$19
2" x 10", 3" x 4", 3" x 8", 3" x 10", 4" x 4", 4" x 8", 4" x 10" --- 10 - 20'			21
6" x 6" to 12" x 12"			24
1" x 4", 1" x 6"			17
1" x 8", 1" x 10"			21
1" x 12"			24
1" #3			13

Clears

1", 2" x 3" and 4" ----- 10 - 20'	31
1", 2" x 6", 8", 10"	35
3" x 4", 4" x 4"	32
3" x 6" to 3" x 10" and 4" x 6" to 4" x 10"	37
8" x 8", 10" x 10", 12" x 12"	41

Redwood Rustic

Clear

Sap Clear

1" x 6" 6 - 20'	\$32	#2 \$28
1" x 6" "	37	35
1" x 8" and 1" x 10" - 6 - 20'	38	36

Resawed Rustic to Bevel Siding

1" x 4"	35	31
1" x 6"	41	37

Redwood Ceiling

Under 6'

6' to 9'

1" x 4" V or Beaded, SLS	\$20	\$27
1" x 6" "	24	30
1/2" \$8 less per M		
5/8" 3 " " "		

Shakes, redwood (6 x 36) #1 \$19 #2 \$15.00 per 1000 pieces

Shingles, " (4 bndls. to 1000) #1 2.40 " #2 2.00 "

Estimating: In estimating allow 10% additional for waste.

1,000 shingles will cover 80 sq. ft. if laid with 4" exposed to the weather, 90 sq. ft. if 4 1/2 " to the weather, and 100 sq. ft. if 5" is exposed.





1,000 shakes laid "shake fashion" (lapping 6" at ends and 1 1/2" at sides) will cover 900 square feet.

1,000 shakes laid "shingle fashion" (16" exposed - double layer) will cover 700 square feet.

Corrugated Galvanized Iron for Roofing-

#24 gauge	\$4.00 per 100#
26 " "	3.85 " "

In lengths- 24" x 72"

#24 gauge	=	1.156#	per sq. ft.
26 " "	=	.9062	" "

Costs	4 1/2¢	per sq. ft.	#24
	3 1/2¢	" " "	26

Miscellaneous Building Material-

Barb wire, 100#	-----	\$3.65
Cement, 100#	-----	1.18
Fence wire, rod	-----	.45
Linseed oil, gal.	-----	1.00
Nails, 100#	-----	4.34
Paints, gal	-----	2.00
Staples, 100#	-----	4.50
Steel wire, 100#	-----	4.70
Well casing-		

	<u>12" Gauge</u>	<u>14" Gauge</u>
10"	1.12	.92
12	1.27	.99
14	1.51	1.12
16	1.80	1.24



COST OF FENCINGCost of Woven Wire Fencing-

Regular general purpose farm fence (hog, cattle and sheep)

<u>Height</u>	<u>Cost per Rod</u>
26"	35¢
32	37
48	44
58	54

In woven wire fence, stays run vertically, strands horizontally. The size of the wire is given in numbers, the higher the number the smaller the size of the wire. Fewer large wires are preferable to many small. Fences should be at least #9 or 10 top and bottom with others of #11 and #12.

Chicken Fence - (150 linear feet in a roll)-

<u>Mesh</u>	<u>Wire #</u>	<u>Width</u>	<u>Cost per Sq. Ft.</u>
3/4"	19	12 - 48"	1.8¢
1"	19	12 - 72	1.6
1 1/2"	19	12 - 72	.9
2"	19	12 - 72	.6

Chicken fence should be of #18 or 19 wire.

Cost of Barb Wire-

\$3.00 per 105#.

There are about 80 rods of barb wire in 105# - hence cost runs about 3 3/4¢ per rod.

Cost of Serviceable Wire Gates-

Walk gates range from \$1.00 to \$ 1.75  
Single drive gates " 2.50 " 5.00

Cost of Staples-

Staples cost \$3.00 per keg of 100#. There are 80 to 90 staples to the pound. It takes 7 1/2 lbs. for 100 rods of 35" fence with posts 1 rod apart.

Cost of Posts-

4" x 5" x 7'	= 23¢	(for driving corner posts with bracing)
3" x 3" x 7'	= 12¢	
6" x 6" x 7'	= 45¢	



Kind of Fence-

(Total cost and cost per mile and per rod on basis square 40 acre field. Redwood posts set:

		1 rod apart	1 1/2 rods	2 rods			
		Per mile	Per rod	Per mile	Per rod	Per mile	Per rod
2 Strands barbed wire with temporary posts	MATERIAL	---	---	\$52	17¢	\$45	14¢
	LABOR	---	---	10	3	8	3
	TOTAL	---	---	\$62	20¢	\$53	17¢
3 Strands barbed wire with temporary posts	MATERIAL	\$76	24¢	\$64	20¢	---	---
	LABOR	14	4	11	3	---	---
	TOTAL	\$90	28¢	\$75	23¢	---	---
3 Strands barbed wire permanent posts	MATERIAL	\$112	35¢	\$87	27¢	\$75	23¢
	LABOR	20	7	15	5	12	4
	TOTAL	\$132	42¢	\$102	32¢	\$87	27¢
26 Inch woven wire hog fence with 3 strands barbed wire-permanent	MATERIAL	\$225	70¢	\$200	63¢	\$187	58¢
	LABOR	23	7	18	6	15	5
	TOTAL	\$248	77¢	\$218	69¢	\$202	63¢

(Gates omitted in above)

Operation	Kind of Work	# Man	# Horse	Work Done
		hrs.	hrs.	
Fencing	Driving 3" temporary posts	20	20	200-250 posts
"	Digging post holes and setting 4" posts, 2 1/2' deep	20	2	80-100 "
"	Digging corner post holes, setting and bracing	20	-	6-10 "
"	Stretch and staple new barbed wire	20	-	800 rods
"	Stretch and staple new woven wire	20	-	200 "



PRICES OF FARM IMPLEMENTS

(Note: Add 1/5 to costs of implements for  
1916-1917)

Walking plows-		
10" single	-----	\$15
12" "	-----	18
24" "	-----	20
Breaker plows-		
12" single	-----	18
14" "	-----	22
16" "	-----	25
Side hill plows-		
10" single	-----	14
12" "	-----	16
Sulky plows-		
14" single	-----	58
16" "	-----	60
Gang plows-		
12" - with 2 mouldboards	-----	77
14" - " 2 "	-----	81
12" - " 3 "	-----	90
12" - " 4 "	-----	115
8" - " 4 "	----- (Stockton)	45
Disk plows-		
24" with 1 disk	-----	65
24" " 2 "	-----	82
24" " 3 "	-----	96
24" " 4 "	-----	112
24" " 5 "	-----	125
(For 26" and 28" disks add \$2 and \$4 respectively)		
Harrows-		
Spike tooth-		
25 tooth, 4 sections	-----	32
30 " 4 "	-----	36
Disk-		
8 foot, 16 - 18" solid disks	-----	58
8 " 16 - 18" outaway "	-----	60
Cultivators-		
Land	-----	60
Crop - 1 horse	-----	8
" - 2 "	-----	50





Mowing machine, 5' cut -----	\$ 72
Horse rakes-	
8 foot - 20 teeth - 1 horse-----	35
10 " - 25 " - 2 " -----	42
Planters-	
Corn - 2 rows, 2 horses -----	48
Bean - " " -----	42
Potato- " " -----	110
Beet - 4 rows " -----	52
Hay Derrick-	
14' mast -----	90
Wagons - single -----	
" - farm - average 1 1/2 tons -----	110
" - " " 2 tons -----	145
Buggies -----	96
Hay press- 2 horses (18" x 22")-----	350
Manure spreader - 2 horses-----	170
Potato digger, elevator type -----	125
Seeders-	
Drill - 16 - 7" single disks, 4 horses-----	130
" - 16 - 7" double " " -----	137
" - 10 - foot steel wheels -----	106
Broadcasters -----	20
Thresher- grain - 26" cylinder, not mounted-----	350
Singletrees, plow -----	5 per doz.
Doubletrees, " -----	10 "
Harvesters- grain binders, 6' -----	189
Corn " " -----	200
Grain headers, 10' -----	300
Fresno scrapers-	
60" - 4 horses-----	21
Corrugated iron rollers, 5' -----	60
" " " 8' -----	85



COSTS OF MISCELLANEOUS EQUIPMENTGeneral Supplies-

Brooms-----	\$ .50
Coal oil, gal. -----	.23
Collars-----	7.00
Grain sacks -----	.08
Grindstone -----	5.00
Halters -----	1.25
Harness:	
Single-----	20.00
Double work (leather) -----	45.00
"    "    (chain) -----	35.00
Horse blankets-----	3.00
Lanterns -----	1.00
Rope, heavy # -----	.18
Saddles -----	40.00
Salt, bbl. -----	2.15
Twine, binder, # -----	.14
Wheel barrows -----	4.50
Whips -----	.75

Spray and Fumigating Material-

Bluestone -----	.05 1/4
Lime, bbl. -----	2.15
Potassium cyanide # -----	.25
Sprays, hand -----	2.50
Sulphur -----	.02 3/4
Sulphur acid, # -----	.02
150 gal. spray outfit -----	2.75

Tools

Axes -----	1.25
Hatchets -----	.75
Hoes -----	.65
Picks -----	1.00
Pitch forks -----	1.00
Scythes -----	1.25
Shovels -----	1.00

Orchard Equipment

Pruning shears, short -----	2.50
"    "    long -----	3.00
"    saw -----	.50
Picking pails -----	.25
Ladders, per foot -----	.30
Drying trays- prunes-----	.35
"    "    - apricots-----	.42
Lug boxes - 40# -----	.12



Dairy Equipment

Milk cans- 10 gal. -----	¢ 2.83
Milk pails -----	2.50
Tin pails -----	.42
Wooden buckets -----	.40
Wall strainer and conveyor -----	10.00
Tube cooler -----	30.00
3 - H.P. boiler -----	100.00
Bottles, quart. per gross -----	8.75
"    pint,    "    -----	5.75
"    half pint "    -----	5.00

Separators-

Capacity # per hr.	135 -----	40.00
"          "	200 -----	50.00
"          "	335 -----	60.00
"          "	450 -----	70.00
"          "	675 -----	85.00
"          "	900 -----	105.00
"          "	1100 -----	120.00
"          "	1350 -----	140.00

For Dairy producing daily

Buy Separator Capacity of

200#	450# per hr.
500	675 "
1000	900 "
1500	1100 "

(Based on comparison of man's time @ 20¢ per hour VS. interest and depreciation on different sized separators)--

Bottle washer -----	¢ 18.00
Washing powder, per keg -----	5.00
Caps, bbl.-----	10.00



Cost of Concrete Silos (Average of 110 silos)

	Cost per ton of capacity	
	Monolithic	Block
(Ill., Mich., Wis., & Minn.)		
Average cost-100 tons or less	2.89	3.52
" " 100 - 200	2.38	2.88
" " over 200 tons	2.18	----
" " all	2.30	3.11

Cost of Wooden Silos

Diameter	Height	Capacity	# Cows will feed 6 mos	Complete cost in- cluding plain doors and roof	Cost of Founda- tion (a)	Total Cost (Labor not in- cluded)
10'	26'	38	10	\$175	\$20	\$195
12	26	55	15	200	30	230
14	30	91	25	250	35	285
20	30	187	50	375	50	425
20	40	280	75	480	50	530
22	42	360	100	550	60	610

(a) Foundation figured @ \$7.50 per cubic yard - for footing 2' wide and 18" high.



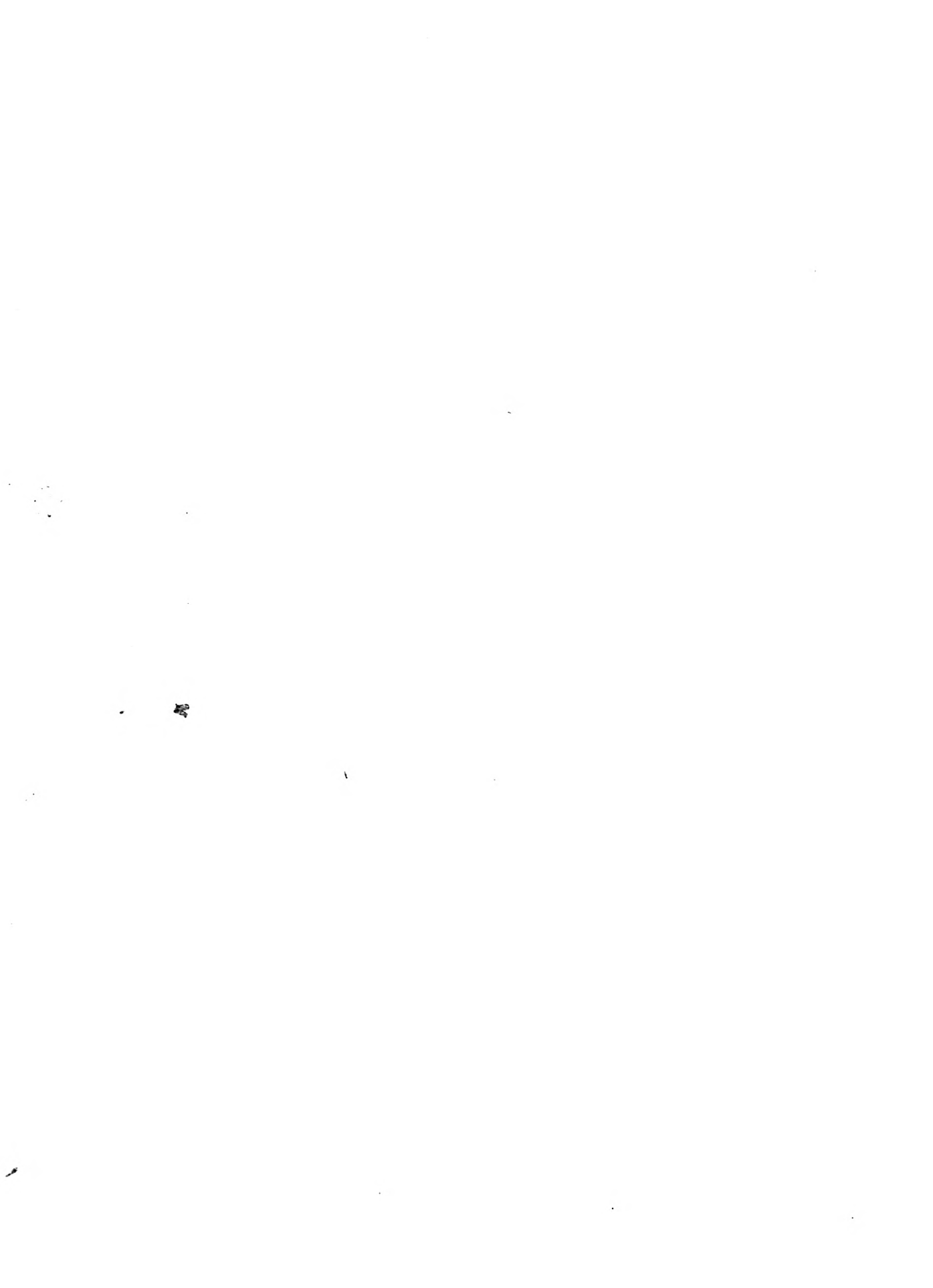


ANNUAL RATE OF DEPRECIATION OF FARM MACHINERY

Grain drill-----	7%
Threshing outfit -----	12
Corn planters -----	7
" binders -----	10
" cultivators-----	7
Mowers -----	8
Hay rakes -----	8
Plows -----	8
Wagons -----	5
Harrows -----	9
Manure spreaders -----	12
Harness -----	6
Gasoline engines-----	7

The usual general rate for depreciation  
is 10%.





from which it was borrowed.

\*S561  
A21far Adams --  
1915 Notes of  
methods and  
costs, California  
crop production.

DEMCO 114N

*Adams*  
MAY 28 1947

\*S561  
A21far  
1915



