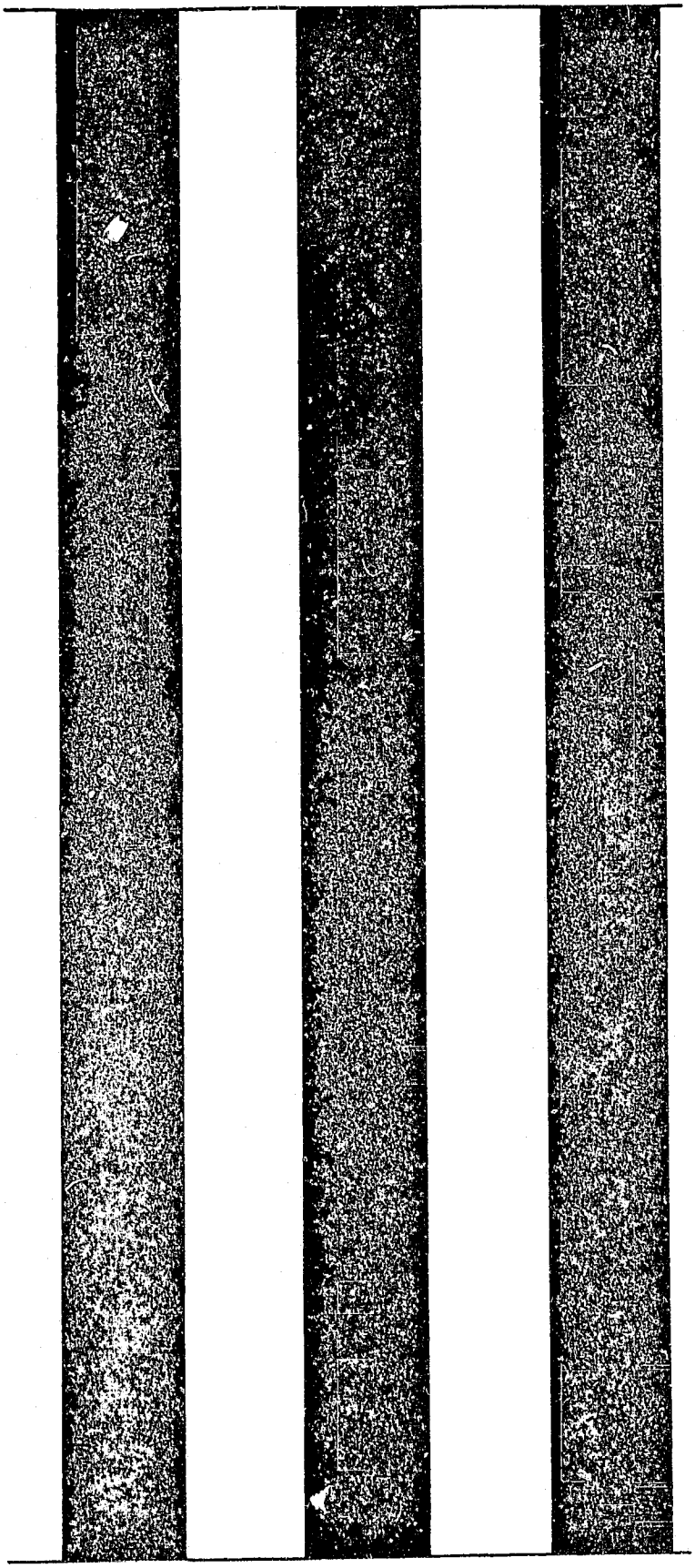
California Department of Food and Agriculture

Agricultural Commissioners' Crop Reports

San Joaquin County

1949-1950



1949

AGRICULTURAL CROP REPORT

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COUNTY OF SAN JOAQUIN

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1949

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SAN JOAQUIN COUNTY
DEPARTMENT OF AGRICULTURE

HANSEN CARTER CO., STOCKTON

SAN JOAQUIN COUNTY

Department of Agriculture

AUSTIN E. MAHONEY
AGRICULTURAL COMMISSIONER

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TO THE STATE DIRECTOR OF AGRICULTURE AND

THE HONORABLE BOARD OF SUPERVISORS

Section 65.5 of the California Agricultural Code requires that the Agricultural Commissioner compile a report covering conditions, acreage, production, and value of the agricultural products of his county, and Section 65 requires that the Agricultural Commissioner keep a record of his official acts and make an annual report to the Director of Agriculture on the conditions of the agricultural interests in his county as to what is being done to control pests and also as to quarantines against pests. This is the sixteenth annual report published by this Department.

Approximately one hundred commercial crops are covered in this report, and for your easy reference they are segregated as to their commercial use wherever possible.

Acreages of permanent crops are reported in actual bearing acreage only, and other crops are reported in actual planted acreage. Production is reported in units commonly used in the marketing of crops commercially in this county. Prices are reported on an F.O.B. basis. Cost of production, harvesting, packing, and other handling costs should be deducted to arrive at a true farm value.

As copies of this report are sent to a number of persons in other states, to federal, state, and county agencies throughout the United States, and to an increasing number of organizations and individuals within the state, the members of this Department have made every effort to make this report as accurate as possible by checking our figures with every known source of reliable information.

I wish to express my sincere appreciation to all who have assisted my inspectors and deputies by furnishing necessary information to them which has made the compilation of this report possible.

Respectfully submitted,

Austin E Mahoney

1/25/50

AGRICULTURAL COMMISSIONER

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ADMINISTRATIVE AND STAFF PERSONNEL

Stockton Office	Hazelton & B Streets	Stockton 6-6806
Austin E. Mahoney	Agricultural Commissioner	
Lester R. Brumbaugh	Chief Deputy Commissioner	
Lloyd V. Braghetta	Senior Deputy Commissioner	
Mark A. Huberty	Junior Deputy Commissioner	
Elna Benjamin	Bookkeeper & Stenographer	
Ralph A. Burlington	Linden District & Standardization	
Tom E. Cheatham	Weed Control	
Forrest H. Darby	Quarantine & Standardization	
Floyd W. Hutchings	Entomology and Plant Pathology	
Kenneth W. Jones	Quarantine Certification & Stockton Office	
Jean McConnell	Intermediate Stenographer Clerk	
Elmer T. Pahl	Eggs, Fair Exhibit and Seed Inspection	
John R. Solari	Farmington District	
Donald E. Storz	Robert Island District	
D. V. Widney	Warehouse	
Lodi Office	Lodi City Hall	Lodi 261
George J. Stipe	Junior Deputy Commissioner	
L. F. Ashley	Elliott & Victor Districts	
Marvin Switzenberg	Terminous & Thornton Districts	
C. W. Thompson	City of Lodi	
Manteca Office	Manteca City Hall	Manteca 44
Nick J. Wolter	Supervising Inspector	
Walton Bauer	French Camp District	
Allen L. Bugbee	Escalon District	
Jess Grisham	Manteca District	
Tracy Office	Tracy City Hall	Tracy 1264
Aage R. Tugel	Senior Deputy Commissioner	
Wilfred McDaniel	South Tracy District	

SPECIAL WEED CONTROL PROJECT

James C. Posey	Inspector
Richard R. Raney	Inspector
Walter Beck	Mechanic

- o 0 o -

Elmer Henson	Truck Driver
Charles Posey	Truck Driver

PLANT QUARANTINE AND CERTIFICATION

In order to prevent introduction and dissemination of detrimental agricultural pests, methodic procedures of inspection on all nursery stock, seeds and other plant material shipped into this county is maintained.

This involves the inspection of all post offices, vessels, freight, express, and truck line offices of all incoming and outgoing shipments of plant material that may carry injurious plant disease, insect pests, or noxious weeds. All such shipments are held for inspection by the common carrier. Most of these places are visited daily by inspectors, and containers of all shipments subject to quarantine are opened and examined for the presence of pests or prohibited material. Whenever shipments are found in violation, disposition of such plant material is either by treatment, destruction under the supervision of the inspector, or returning to place of origin.

The importance of plant quarantine work cannot be over-emphasized since San Joaquin County with its great diversification of agricultural crops is correspondingly vulnerable to a large array of insect and plant diseases. With the steady increase in population in San Joaquin County the traffic of plant material has increased extensively the last few years. This in turn has placed a greater responsibility and demand upon this department; so the populous of the county may be adequately served.

The following table shows the amount of quarantine work completed for this year:

State Interior Quarantine Inspections

	By Truck	By Mail	By Boat or Rail	Total
No. of shipments passed	815	3,024	62	3,901
No. of plants passed	1,707,191	404,650	53,104	2,164,945
No. of shipments rejected	65	12	0	77
No. of plants rejected	200,800	702	0	201,502

State Exterior Quarantine Inspections

	By Truck	By Mail	By Boat or Rail	Total
No. of shipments passed	25	11,063	570	11,658
No. of plants passed	60,262	503,115	261,986	825,363
No. of shipments rejected	1	44	7	52
No. of plants rejected	50	1,014	353	1,417

Quarantine Violations

State Quarantines	Number of Violations	Federal Quarantines	Number of Violations
Quarantine Proc. #10	7	Federal Quar. #63	1
Section 115	20	Federal Quar. #48	4
Section 124	78	Federal Quar. #38	2
Quarantine Proc. #12	4	Federal Quar. #45	1
Quarantine Proc. #11	2	Federal Quar. #37	4
Quarantine Proc. #19	1	Federal Quar. #56	2
Quarantine Proc. #21	2	Federal Quar. # 3	1
Quarantine Proc. # 1	15		
Quarantine Proc. # 9	2		
Quarantine Proc. #13	3		
Quarantine Proc. #22	1		
Section 125	1		
Quarantine Proc. #20	6		
Quarantine Proc. #16	1		
TOTAL	143	TOTAL	15

Ship Inspections

Ship inspection service is maintained at Port Stockton and United States Naval Annex to prevent the entry of harmful plant and animal pests known to exist in foreign and domestic areas. The personnel engaged in port inspection activities are appointed as collaborators of the Federal Bureau of Entomology and Plant Quarantine.

This year 63 ships were boarded and an examination was made of the cargo, food stores, baggage, officer's and crew's quarters, and garbage for injurious pests or quarantine law violations detrimental to the agricultural industry of this state.

Out of these 63 ships that were inspected, 26 ships were found with either food stuff or cargo in violation of quarantine regulations. The food stuff consisted of fruit and vegetables from foreign lands or other states that were under quarantine. This food which usually constituted part of the ship's store was sealed in the store room or the ship's refrigerator until the ship had left port. The cargoes consisting of equipment with adhering dirt was thoroughly cleaned before being released. In addition, ships which had foreign meat in storage lockers were sealed to prevent the possible introduction of the dreaded Hoof and Mouth disease.

Certification

Another function of plant quarantine is that of certification as to pest conditions or pest treatments when such is officially required on out-going shipments. In addition to certification of shipments, shipping permits and certificates of inspection of nursery stock after thorough inspection were placed on interstate shipments.

The following certificates were issued and fees received:

Sanitary Inspection Reports ----------	54
Potato Fumigation Certificates -------	283
Fees Received ----------	$707.50
Hay Inspection Reports ----------	2

PLANT DISEASE AND INSECT SURVEY

The purpose of this program is to locate any new agricultural pests which may have been introduced into this county. In the event a potentially serious pest is found, appropriate eradication or control measures are taken. To determine the extent of spread of these insects or plant diseases, survey work by trapping and visual inspection is carried out. The following is a summary of the most important pest surveys conducted by members of this department.

PLANT DISEASES

Grape Mosaic (Virus) The introduction of contaminated experimental nursery stock made necessary the inspection of properties where this rootstock had been planted. Four diseased vines found this year in three locations were destroyed by burning.

Onion Yellow Dwarf (Virus) This onion disease caused by a virus is characterized by mottling of the leaves. Spot surveys were conducted in all onion-growing sections of the county, disclosing no diseased plants.

Peach Wart (Virus) The finding and destruction of one diseased tree in 1947 necessitated the starting of an annual survey for this disease. A tree to tree inspection was made at pre-harvest time of all Candoka peach trees. No diseased trees were found this year. State plant pathologists determined suspicious fruit submitted to them to be affected by other than this virus.

Chestnut Blight *Endothia parasitica* This is the fifteenth year eradication work has been carried on since the discovery of this pest. This year nine contaminated trees were found in two orchards and were destroyed by burning to prevent further spread.

Onion Smut *Urocystis cepulae* This fungus pest of onion seedlings was found to be present on onion sets in Stanislaus county late in 1949. Since this disease was not known to be present in California and is a pest in other states, a survey of the onion plantings of this county was made. Forty-five properties were inspected - - a total of ninety acres. Of this number, five were found to be infected, and hold notices were issued under authority of Section 128 of the Agricultural Code. Observations of this pest will continue.

Golden Nematode *Heterodera rostochiensis*
and
Potato Rot Nematode *Ditylenchus destructor* Both of these nematodes work only below the soil surface. The golden nematode is found only in New York State. Potatoes are the primary host and tomatoes a secondary host. The potato rot nematode appears only in the state of Idaho, with potatoes as the only known host. A survey was conducted this past year in San Joaquin County in conjunction with Federal and State plant pathologists to determine the presence or absence of these pests. The potato-growing regions of this county were inspected with negative results.

Strawberry Spring Dwarf Nematode Aphelenchoides fragariae Since strawberries are the only known host plant of this pest, all commercial plantings of strawberry plants were inspected for the possible presence of this new nematode. Only one property was found to be infested with this pest. A hold notice was placed on this property under authority of Section 128 of the Agricultural Code.

Corky Spot (unknown cause) During the course of routine inspection work in 1948, a new malady of almonds was found which was identified by our state plant pathologists as corky spot of almonds. Immediately a survey was started in the surrounding properties and other commercial plantings to determine the possible area involved. A number of sick trees were found at several different locations. Further observations were made during 1949. No additional areas were found to be affected.

INSECT PESTS

Cabbage Seedpod Weevil Ceutorhynchus assimilis A randomized check of cabbage fields and related host plants in this county established its initial record here. This pest was introduced into California and is of importance in areas growing cabbage for seed.

Colorado Potato Beetle Leptinotarsa decemlineata Randomized checks were made throughout the county in both residential and large scale potato producing areas to determine whether or not this pest could be found. Negative results were obtained.

Crapemyrtle Aphid Myzocallis kahawaluokalani Survey work was conducted this year on numerous private plantings of crapemyrtle throughout this county. This pest was introduced into another section of California from Hawaii, and since this popular shrub is relatively pest-free, the extent of its spread was checked in cooperation with the State Department of Agriculture. One shrub in Stockton revealed a light infestation. All aphids located were destroyed.

Hall Scale Nilotaspis halli With the discovery of Hall Scale in another part of the state, it became important to trace host material, both trees and scions, which had been moved from infested orchards in that locality to this county. According to the list furnished by the United States Department of Agriculture, several lots of trees and scions were moved into San Joaquin County. With the assistance of the U.S.D.A. and State Department, careful check was made of the trees concerned. No Hall Scale was found.

Japanese Beetle Popillia japonica Survey work was carried on between May 15 and October 1, 1948. Twelve U.S.D.A. Japanese Beetle scouting traps were used with anethol and eugenol as attractants. These traps were located at strategic points around Stockton Field airport, the U.S. Naval Annex, and Lodi City Hall. No Japanese beetles were taken. Adults of the Desert June Beetle were among insects collected. The larvae of this insect damaged sod in one area of the county.

Naval Orangeworm Myelois venipars A county-wide survey was made to determine the extent of spread of this pest in San Joaquin County. This insect was introduced into Southern California several years ago from Arizona, where it was found to be a scavanger on fallen citrus. Since its introduction into this state, it has caused considerable apprehension due to its feeding in walnuts and almonds. This pest was found to be present in the Tracy area at one residential property and three almond orchards. Due to the spread of this insect beyond natural boundaries, a quarantine regulation prohibiting the shipment of untreated nuts from infested areas was revoked in October, 1949.

Oriental Fruit Fly Dacus dorsalis On March 29, 1949, traps were issued by the State Department of Agriculture for the purpose of early interception of this serious pest should it appear in the United States from Hawaii. Twenty plastic vials containing citronella and water are located in San Joaquin County at strategic points and are inspected weekly. A very extensive program is under way at present in Hawaii and other parts of the world to discover effective measures for the control of this pest.

Sweet Potato Weevil Cylas formicarius elegantulus A thorough inspection was made of sweet potato fields, storage sheds, packing houses, and home gardens around Manteca, Ripon, and Escalon. No sweet potato weevils were found nor was damage to tubers characteristic of this insect noted.

NURSERY INSPECTION

The nurseries in San Joaquin County are inspected annually to determine the presence or absence of insects, mites, nematodes, plant diseases, or weeds which are considered to be pests. Since nursery stock is distributed to all parts of the county and to points outside of the county, the ideal place to destroy the plant pests is at the nurseries; thus, their spread is prevented. Cleaner nursery stock was observed in nurseries where control measures were diligently carried out throughout the year.

Nurseries (Ornamental) The inspection of nursery stock and premises in thirty-three nurseries was completed the latter part of the year and did not reveal the presence of any new pests. Pests found were controlled to meet the requirements outlined in regulations governing the issuance and use of inter-county nursery stock certificates under authority of Section 123.56 of the Agricultural Code of California. All pests found are of common occurrence throughout the state, with the exception of a soft scale, Asterolecanium arabidis, and striped mealybug, Ferrisiana virgata. Twenty-nine pittosporum plants infested with this scale were immediately destroyed by burning. This scale disfigures its host by pit formations. It is found on wild deer weed plants throughout several areas of the state, and it is of common occurrence of pittosporum and privet plants used for ornamental purposes. The striped mealybug was found on a small lot of plants in one nursery. As requested by the State Department of Agriculture Nursery Service, these plants were destroyed by burning.

Nurseries (Trees) During the winter months when the planting of fruit and nut trees is in progress, extensive inspection work is necessary. The young trees are closely inspected for injurious plant pests such as oak root fungus, nematode, and crown gall. Under our county ordinance, the roots of fruit trees are examined for split roots, crooked roots, dead roots, and freezing damage. Any plants that do not come up to specification or are infested with pests are rejected. One large nursery that specializes in deciduous fruit and nut trees requires the full-time services of an inspector for a period of three months.

Nurseries (Tomatoes) The tomato industry plants one of the largest crops in this county. This year it has been necessary for the County Department of Agriculture to reject 3,327,000 nematode-infested plants to prevent the spread of this pest to soil which is free of nematode. The number of plants rejected this year for nematode was substantially lower than the preceding year when a large number were found infested with this pest. This production of healthier plants undoubtedly can be attributed to a greater precaution of tomato growers in the growing of tomato plants in clean ground.

TOMATO INSPECTION FOR 1949
(Co. Tomato plants only)

Total number	places inspected	131
" "	plants "	59,987,500
" "	" passed	56,660,500
" "	places rejected	28
" "	plants "	3,327,000
" "	tomato beds inspected	2,219

ORCHARD AND FIELD INSPECTION

In order to more adequately protect the crops of this county, inspections of orchards and field crops for established injurious insects and plant diseases are carried out as often as it is deemed advisable. Established infestations are inspected periodically to observe current control measures, and if the present control measures are not adequate, more stringent measures may be enacted, especially when there is immediate danger of spread of the pest to adjoining properties.

Periodic inspections of orchards and field crops are necessary to guard against any new pest that may have been introduced into the county, and if present, immediate steps for the eradication or control may be undertaken. In order that such suppression measures will meet with the highest degree of success, field observations of current pest control operations must be observed.

However, if cooperation of the landowner involved is not secured and neighboring properties are menaced by these agricultural pests, measures as set forth in the California Agricultural Code are enacted. These measures include abatement or quarantine procedure. Whenever neglected or abandoned plants or crops are hosts to detri-

mental pests and endanger adjoining properties, such pests are abated by eradication or other appropriate methods. Following is a brief summary of some of the important pests to crops found in this county.

INSECTS AND MITES ON FRUIT AND NUT CROPS

Codling Moth Carpocapsa pomonella A two spray program this year resulted in excellent control of this major pest of walnuts. Worm damage was lighter this year in most orchards. A heavy flight of codling moth adults was on time this year which aided in effective control.

Walnut Aphis Chromaphis juglandicola Population was high and many growers were compelled to dust as many as five times to combat this insect. Nicotine sulphate added to the codling moth spray was of value in reducing aphid population.

San Jose Scale Aspidiotus perniciosus continues to cause some injury to fruit trees, particularly cherries and peaches. Most growers are becoming aware of this scale insect and are holding it in check through the application of oil or lime sulfur sprays in the dormant season.

Peach Twig Borer Anarsia lineatella Although conditions were similar to those of previous years, infestations were heavier this year than last in most orchards.

Almond Mite Bryobia praetiosa was present in many orchards; however, heavy damage did not materialize. Moderate losses occurred in non-irrigated orchards. These mites are developing into a major pest of almonds.

Grape Erinose Mite Eriophyes vitis were numerous during the spring in many vineyards, but only in a few instances did damage result to buds and leaves from this mite.

Grape Bud Mite Eriophyes vitis a physiological strain of the above, was scattered throughout the main grape districts. Damage was very spotted. Only two vineyards, a total of 22 acres, were observed to have suffered loss from this pest.

Grape Phylloxera Dactylosphaere vitifoliae continues to be a problem in many vineyards. Growers are becoming more conscious of this insect each year due to its devastating effect on grapevine roots. Several new infestations were discovered during the year.

Grape Leafhopper Erythroneura comes The number of broods was normal this year. Many growers held damage to a minimum by using DDT in an early dusting program.

Pacific Mite Tetranychus pacificus Favorable weather conditions for the development of this mite caused more damage this year than last. There were some new materials

used against this pest with promising results. Foliage damage by this pest was not severe until after grapes had reached maturity.

PLANT DISEASES OF FRUIT AND NUT CROPS

Brown Rot Sclerotinia fructicola & S. laxa Infestations of this fungus were light this year. The mild, dry weather which prevailed this year inhibited the development of this destructive disease.

Peach Blight Coryneum Beijerinckii Light damage was experienced this year except in a few apricot, peach, and almond orchards where no control measures were taken or where improper spray materials were applied.

Peach Leaf Curl Taphrina deformans Most varieties of peach trees showed a decreased amount of infection of this disease largely due to dry weather.

Crown Rot Phytophthora cactorum This fungus continues to be a problem in walnut orchards and individual trees in town. Most noticeable is the prevalence of this disease on trees located in poorly drained soil or where excessive surface moisture is maintained, as on and around lawns.

Oak-root Fungus Armillaria mellea A number of new infections were discovered through inspection of suspicious trees in orchards and by specimens brought in by farmers for identification. Many growers have been duly alarmed by this destructive fungus and have taken strong measures to stop the spread of this serious disease.

Powdery Mildew Sphaerotheca pannosa var. persicae This particular variety of powdery mildew which attacks peaches did a light amount of damage this year in some districts.

Powdery Mildew Uncinula necator on grapevines was not so prevalent as in some previous years. Four dustings this year held damage to a minimum.

Walnut Blight Phytomonas juglandis The most destructive disease of Payne variety walnuts was very light this year. Weather conditions were not favorable for the growth of this bacterial disease. There was a light drop of small nuts.

Cherry Diseases (virus) Numerous virus diseases have been seriously affecting cherry production in this and other cherry-producing counties. A program of selecting clean budwood has been inaugurated by the State Department of Agriculture as a long-range improvement program. This department assisted in field work in San Joaquin County.

INSECTS AND MITES OF VEGETABLE AND FIELD CROPS

Tomato Mite Phyllocoptes destructor This pest is sometimes referred

to as the silver mite due to its characteristic damage to tomato foliage. Growers are well aware of this pest and applied sulfur as a precautionary measure with good results. Some mites were observed in October.

Beet Webworm Loxostege sticticalis This pest developed to serious proportions this year in the southwestern part of San Joaquin County. It developed in most cases in combination with the yellow-striped armyworm in alfalfa fields. When such fields were cut, large numbers of these larvae moved out to attack adjoining fields. It was possible to stop such movement of yellow-striped armyworms, but the beet webworm was able to resist available control measures. This department cooperated with one of the sugar companies in conducting experiments with new materials and others not commonly in use against these pests. One of the new materials appeared promising for barrier application.

Corn Earworm Heliothis armigera No trouble of importance was experienced this year with this insect in tomato crops, for the timely application of the insecticide DDD (Dichloro-diphenyl-dichloroethane) gave splendid results; however, corn fields were hit as hard as ever where control was not practiced. DDD & DDT in combination gave good control of this insect in corn.

Tomato Hornworm Protoparce quinquemaculata
&
Tobacco Hornworm P. sexta were light this year and the ones that did appear were effectively controlled with applications of DDD.

Darkling Ground Beetle (various species) were quickly controlled by DDT, DDD, and poisoned bran. In some cases where large numbers of these beetles were found, control measures were undertaken before the planting of the crop. This group of insects appeared to be less troublesome this year than last.

Flea Beetles (various species) had a general distribution. In a few cases control measures were necessary.

Grasshoppers (various species) Control measures were necessary in several areas of the county this year. In one locality in the southwest portion, two irrigation districts undertook extensive control and barrier measures to prevent the spread of large numbers of grasshoppers to adjoining properties. This department participated actively in this program with equipment and supervision.

Wireworms (various species) Farmers in the county found it advisable to treat more land than in previous years for this pest. In most cases the soil fumigant D-D (Dichloropropene dichloropropane) was used; however, some farmers used EDB (Ethylene dibromide) soil fumigant material.

Celery Leaftier Phlyctaenia ferrugalis Damage to celery by this insect was negligible.

Celery Looper Autographa falcifera Infestations of this insect were light this year. This may be attributed to the many parasites present.

Cutworms (various species) These pests were prevalent in many localities this year. They caused light damage to plantings of tomatoes and other miscellaneous truck crops.

Yellow-striped Armyworm Prodenia ornithogalli Heavy infestations were present this year but not as heavy as in 1947. (Also see paragraph on the beet webworm.)

Sunflower Moth Homoeosoma electellum This pest was found to be present in damaging numbers in sunflower plantings this year. Seeds in the perimeter of mature heads were attacked by the larvae of this insect. Control of this pest is difficult. Materials used were DDT and TEPP.

VEGETABLE AND FIELD CROP DISEASES

Bacterial Canker Phytomonas michiganensis This bacterial organism was found infesting tomato plants in seven fields this year. Fermentation in separation of seed from fruit helps to destroy the bacteria and such seed should also be disinfected with corrosive sublimate before planting. Growers have been cautioned not to replant old tomato beds this coming year that have been contaminated by this destructive disease.

Western Yellow Blight (virus) This tomato disease, which is spread by the beet leafhopper, Eutettix tenellus, was heavier in 1949. However, it is fortunate that surrounding plants often filled in the area where plants had been killed by this disease, and thus, yield was not too seriously affected.

Tomato Mosaic Disease (virus) The effects of this disease were evident in numerous fields in the county, but infected tomato plants outgrew this disease in most cases, causing very little damage. In general, tomato mosaic was lighter this year.

Spotted Wilt (virus) This disease was found spotted throughout tomato fields in the county. Several fields suffered some loss from this virus. Three fields in the northern part of this county were noted in particular. Control measures should be directed against the thrips that carry this virus to plants in the seed bed and field.

Fusarium Wilt & Verticillum Wilt These two fungus diseases were evident to a certain extent in some tomato fields with very little damage occuring. Weather conditions were apparently unfavorable for the development of these diseases.

Western Celery Mosaic (virus) No serious losses were experienced from this disease in 1949. Infections were light throughout celery-growing areas of the county.

Aster Yellows (virus) This virus disease which is carried by the six-spotted leafhopper, Macrosteles divisus, stunted a small percentage of celery grown. The Golden varieties of celery suffered greater losses than other varieties.

Potato Diseases (various) Since growers are now using certified seed potatoes, losses from the various diseases of potatoes are negligible.

PEST CONTROL OPERATORS

Farmers of San Joaquin County each year carry out extensive pest control work of plant diseases and insect pests to protect their crops. The gradual introduction of numerous plant diseases, insect pests, and noxious weeds now require energetic measures of suppression or eradication to keep these pests from interfering with profitable crop production. To facilitate these control measures, many farmers employed commercial pest control operators to make the application of the chemicals used.

During the year, a number of new certificates were issued to individuals desiring to enter the business of pest control work. In accordance with Section 150 of the Agricultural Code, applicants were given written examinations and questioned orally to determine their qualifications to carry out pest control work.

Throughout the year, operators were required to send in monthly reports giving information on all work done. Also, in the case of the use of hazardous materials, 48 hours notice in advance of application was required to be filed at this office. The total number of such notices filed with the office this year was 298.

Whenever complaints were received by this department, inspections of the fields in question were made to gather evidence and to determine the extent of damage.

A wide variety of chemical materials have been used by pest control operators in this county. New materials such as parathion and HETP and chloradane were used. Greater use of the material cyanamide was made as a defoliant on tomato crops. In general, materials were applied as sprays or dusts, either by ground rig or aircraft.

The acreage treated in San Joaquin County for this year by commercial pest control operators was substantially the same as the previous year, with a slight increase of approximately 1,000 acres. Of the 113,757 acres treated, 90% of this acreage was treated by aircraft.

This year, 59 persons were certified for pest control work, of which 32 were for aircraft spraying and dusting, 9 for orchard spraying and dusting, 7 for weed control, 5 for fumigation, 3 for ornamental and shade tree spraying, 2 for cattle or barn spraying, and 1 for fog machine operation.

Acres Treated in San Joaquin County by Commercial Operators

Plant Diseases and Insect Pests		
Fruit and Nut Crops	47,731 acres	
Field Crops	11,770 acres	
Vegetable Crops	26,922 acres	
		86,432 acres
Weed Control		
2,4-D	25,157 acres	
Contact Material	1,665 acres	
		26,822 acres
Soil Fumigation		
D-D	386 acres	
EDB	126 acres	
		512 acres
Total Acres Treated		113,757 acres

HOUSEHOLD AND GARDEN PESTS

Scarcely a day passes without this office receiving at least one call from someone requesting information for the control of insect pests either inside their house or in their garden. Many times the identification of the insect is not known or only a general description of the condition of the plant can be given by the person. Under these circumstances it is necessary to call on the party in question, and only after a positive identification can proper control measures be recommended. These calls are necessary not only to assist the party involved, but it is never known when a new pest to this county will be found that is of a serious nature to agricultural crops. By discovering such a pest before it has a chance to become established and spread to neighboring properties, methods of suppression or eradication may be effectively employed.

Many times the plants are suffering from a physiological condition. If this condition is suspicioned to be caused by soil irregularities, the soil is analyzed in our laboratory for injurious salts, for deficiency of some vital plant food materials, or for the pH (acid-base content) of the soil. Armed with this knowledge, soil corrections can be carried out in an intelligent manner by the application of proper fertilizers or readjusting the soil pH.

STANDARDIZATION

Fruit, Nut, Vegetable, Egg, and Honey

This activity of Standardization work is authorized under Chapter 2, Division 5, of the Agricultural Code. It has to do with the inspection of eggs, honey, walnuts, and thirty-two of the important fruits and vegetables, to see that they comply with the specific standards specified in the Code. It also includes all other fresh

fruits and vegetables, as they are also regulated as to serious decay and insect damage, and all dried fruits regulated as to deception and mislabeling.

This year the enforcement of the Standardization Laws was carried out by all members of the department in addition to performing their other duties. During the shipping season, a number of crops demanded a large number of inspectors to be on the job. Since commodities were delivered throughout the day and into the late evening to re-distribution centers, where it is more practical to maintain inspections, many hours of overtime were necessary to properly inspect this produce to maintain higher standards of quality and pack, and further, to protect the consumer from fraud, mislabeling, and deception of commodities. This procedure also assisted the truckers andshippers in getting their produce into the markets without unnecessary delay by further inspections at state-operated highway inspection stations.

Afternoon Market The afternoon market usually starts with the beginning of the cherry season and carries on until the fruit season is ended. All of the fruits and vegetables the farmers bring in are inspected before being loaded on trucks and taken to the larger sholesale markets, such as Los Angeles and San Francisco. There are five loading docks that one inspector must cover. All loads are certified before leaving for their final destination.

Ranch Calls Throughout the year a number of ranch calls were made by inspectors of this department to packing sheds located on farms. Advice to the farmer or packer in the proper preparation of the produce under consideration is given. In this manner, the farmer is assured of a pack meeting all of the standardization requirements before it leaves the farm. Inspections of this type are welcomed by farmers and packers, for corrections in the packing and conditioning of fruits and vegetables may be made without undue expense or trouble to the grower.

Morning Market The morning wholesale market, which operates the year around, opens at 5:00 a.m., and the farmers of the county bring their fresh produce in to be sold to the retailers. This necessitates having one inspector assigned to the market to enforce the standardization laws. Many buyers from the county and other parts of the state are there getting the fresh produce in order to pass it on to the consumer. The peak of the season is reached during the summer months when the fresh fruits are ripening.

Wholesale Markets and Retail Stores It is necessary to maintain constant vigilance upon all wholesale stores because so many commodities are imported into the county from other parts of the state. In order to assure the retailer and consumer of high quality produce, daily inspections are made at all wholesale establishments.

Fruit, Nut, and Vegetable This has been an excellent growing season for most crops in San Joaquin County. The mild, warm weather has permitted farmers to grow and harvest their crops without the problems of wet, damp weather, which is conducive to rots, mold, and decay. Such factors have a direct bearing upon the problems

arising under the Standardizing Law in the preparation of proper packs. Most noticeable was the high quality of cherry packs as in contrast with the previous year when brown mold and cracked skins caused by wet weather prevailed. Peaches and nectarines, in a similar manner, were of excellent quality since split pits and especially brown rot were at a minimum.

However, the general run-of-the-mill violations were experienced throughout the year. The preparation of deceptive packs in such commodities as peaches, asparagus, and tomatoes was experienced. Variation of size and some slime in excess of the tolerance in a number of lettuce packs was found. A number of violations occurred due to improper label information or absence of required markings on packing boxes in such commodities as sweet potatoes, grapes, apples, and citrus. Some shipments of potatoes from out of state were found below the prescribed standards of the marked grade US#1, and a few lots were found deteriorating with soft and wet rot. During the watermelon season, a few loads were rejected for rind rot and immaturity.

Eggs Periodic inspections of eggs in retail stores were conducted throughout the year. Many times retailers had inadvertently held these eggs in storage for a period of time longer than considered advisable. Checking these eggs by portable candler revealed a number of eggs that did not meet required specifications of the grade indicated on the containers. In some cases, producers were found to be at fault when they delivered eggs which did not meet the requirements of size or quality standards for the grade given on the containers.

Honey Throughout the year, a number of calls have been received by this office for general information concerning honey grades and marking requirements. There have been several rejection notices given this year on containers of honey not being properly marked as to grade.

Standardization Statistics

Number of containers inspected -----	8,631,752
Certificates Issued ----------	1,703
Fees Received ----------	$1,820.50
Violation Notices Issued ----------	331
Number of Containers Rejected ------	19,013
Court Cases ----------	4
Amount of Fines ----------	$ 300.00

Grapes for By-Products Section 771 of the Agricultural Code provides that wineries purchasing grapes on which the price paid is based on the sugar content shall have an official test made on each load delivered by an authorized inspector from this department. This work was carried out with the aid of 17 extra men who made 36,344 official sugar tests and issued 20,119 certificates at 11 wineries by a scale set up by this Department. The following chart shows the wineries having inspections, the number of certificates issued and the cost of each certificate.

Name of Winery	No. of Certificates	Cost	Av. Cost Per Certificate
Acampo Winery	850	$ 427.12	.50
Cherokee Vineyard Ass'n.	3,112	681.70	.22
Community Grape Corp.	3,894	877.99	.23
Del Rio Winery	3,225	805.62	.25
Franzia Bros. Winery	960	370.24	.39
Lockeford Winery	2,404	608.70	.25
Petri Wine Co.	2,150	776.20	.36
Roma Wine Co.	1,990	707.84	.36
Sebastiani Winery	768	354.20	.46
Shewan-Jones	128	207.52	1.62
Village Winery	638	502.80	.78
Total	20,119	$6,319.93	5.42

Certification To facilitate the transportation of agricultural commodities, many certificates of inspection are issued by this office on truckloads of produce stating that the load conforms to the provisions of the Agricultural Code relative to Fruit, Nut, and Vegetable Standards. This certification is not mandatory, but is a service of considerable importance to the party transporting the produce; therefore, those receiving the service are very well pleased and willing to pay the charge of seventy-five cents for a 4,000 load or over. This year 1,703 certificates were issued.

The movement of produce by truck to out-of-state points is maintained by a veritable fleet of trucks. Fruits and vegetables from San Joaquin County find their way to nearly every state in the Union and some into Canada by way of truck transportation. Since trucks transporting agricultural produce are required to stop at inspection stations located within the state and at state borders, standardization certificates are of special benefit to the truckers. Those having certificates are permitted to proceed, while those not having certificates of inspection are detained for inspection of their load, and if it does not conform to the state standards, they are required to recondition the load or make other necessary disposition. Therefore, those having certificates are not inconvenienced in such a manner. Furthermore, it has been reported by a number of truck drivers that these certificates are honored by inspectors at destination in other states. The following report shows the amount of produce certified and the destination thereof.

Destination of Certified Truck Load Produce:

*Commodity	Southern California	San Francisco Bay Area	Balance of State	Out of State
Apricots	10,267	501	0	914
Cherries	119,706	10,459	4,446	7,074
Figs	1,343	1,119	48	5
Grapes	37,548	14,988	3,493	459,557
Nectarines	28,278	23,038	912	417
Peaches	18,324	281,660	22,959	2,964
Plums	22,833	9,352	302	1,181
Berries	6,647	504	0	1,662
Misc. Fruits and Nuts	7,467	346	3,637	1,370
Asparagus	1,492	15,662	747	43,118
Celery	250	0	270	15,585
Lettuce	50	52	0	1,492
Onions	4,537	17,660	2,914	2,863
Potatoes	0	4,149	297	6,427
Sw. Potatoes	100	20	143	39,642
Tomatoes	519	10,357	4,273	4,768
Watermelons **	316	1,312	1,264	1,044
Other Melons	328	1,470	766	725
Misc. Vegetables	964	10,133	8,617	3,172
TOTAL	260,969	402,782	55,088	593,980

*Unit container such as lug, crate, flat, box, or sack except where otherwise specified.
**Indicates Tons

Bird and Rodent Control

Bird Control Damage to crops by birds has been of minor significance in the county this year. Blackbirds and crows caused some damage to crops in the southern portion of the county. Some fields of ladino clover were damaged by mudhens. Wild pigeons fed upon newly germinated grain fields and caused some damage to buds of almond and apricot trees. One field of 50 acres of newly germinated onions which had been seeded directly in the field fell under the attack of hornlarks. English Sparrows were of a particular nuisance to home gardens and berry crops in several parts of the county. Linnets caused some damage to a few almond trees in blossom stage near river bottom areas.

Ground Squirrel Control In this county, rodent control work is concentrated almost exclusively on the ground squirrel. Other rodents are of minor importance and are regarded in comparison of minor significance as to destruction to crops in this county. Through the commendable cooperation of farmers, reclamation districts, irrigation districts, and railroads this year, the ground squirrel population of the county has been materially reduced. Many fields that once abounded with this pest have been virtually eradicated or only small isolated infestations remain. Also, all state and county roads were inspected for ground squirrel infestations and treated accordingly.

This year fourteen reclamation districts gave to this department the responsibility of carrying out the rodent control work on farms in their districts. This has eliminated the problem of contacting each land owner and making arrangements for control work. Furthermore, the Sheriff's Department supplied county prisoners as low-cost laborers to work under our supervision, which has facilitated the squirrel control work.

Throughout the year, weather permitting, a vigorous campaign on the destructive ground squirrel was carried out in this county. Wherever possible, farmers were assisted in their ground squirrel problems by members of this department by advice on proper methods of control or by actual field operations. Whenever the poisons "1080" or thallium were employed, the handling and distribution was under the direct supervision of this department as required by the code.

The main poisons employed in the control of ground squirrels were strychnine, "1080" (Sodium Fluoroacetate), and carbon disulphide. A small amount of thallium and zinc phosphide were used; however, cost, particularly in the case of thallium, has virtually eliminated the use of these materials. The old reliable carbon disulphide (CS_2) has been a favorite material throughout the year wherever it was practical to apply this material. However, poison baits of "1080" have proven to be a very good material, both from the standpoint of cost and effectiveness.

Although ground squirrel control work has predominated in this county, some work was done on other rodents. For the most part, this has been in an advisory capacity on such rodents as rats, field mice, gophers, and rabbits; however, some farmers that requested assistance against severe infestations of rats were aided by this department. On the following page is a chart showing acres treated and materials used during the past year for squirrel control in this county.

Materials Used and Acres Treated in San Joaquin County for Squirrel Control Work

Month	Acres Treated	Pounds Strychnine Bait	Pounds Zinc Phosphide Bait	Pounds "1080" Bait	Gallons CS_2 (Carbon Bisulphide)
JANUARY	57,000	9	10	275	3,060
FEBRUARY	80,000	74	70	637	3,332
MARCH	125,000	110	8	310	4,641
APRIL	121,000	225	10	1,486	5,686
MAY	100,000	225	10	1,486	5,686
JUNE	40,000	345	20	3,923	531
JULY	25,000	190		845	820
AUGUST	20,000	123	20	642	922
SEPTEMBER	30,000	440	80	651	873
OCTOBER	73,000	180	10	1,981	1,413
NOVEMBER	12,318	229	95	943	1,170
DECEMBER	4,622	100	35	85	1,380
Total	687,940	2,250	368	13,264	29,514

WEED CONTROL

The supression and eradication of undesirable weed pests has become one of the major pest control problems of this county. For many years, with the ever-increasing intensification of diversified agricultural activities, farmers have come to more fully recognize the importance of weed control work. The majority of farmers readily accepted the fact that only by curtailing the growth of weeds can their land be utilized to its fullest extent for crop production. However, the main problem is to inculcate in land owners the proper procedures in the control of specific noxious weeds that have been introduced into this county. Many farmers are inclined to place all weeds in the same category in weed control methods and disregard the individual problems connected with each species, especially of those weeds we regard and classify as noxious.

To educate and aid materially land owners in the county, a special weed control program was initiated in 1948. This year the program was greatly intensified so that a greater number of property owners would be unified in the county-wide program. The annual noxious weeds considered under this program were Yellow Star Thistle and Puncture Vine, with special emphasis upon infestations in areas relatively

free of these weeds. Perennial weeds given special consideration were Johnson Grass, Russian Knapweed, Hoary Cress, and White Horsenettle.

First of all, to meet the needs of such an extensive program it was necessary for this department to substantially increase its staff with men trained in the problems of weed control. Since such men were not available, it became the task of the department to train men to meet this need. These men, supplemented with our regular inspector personnel, carried the program to landowners throughout the county.

It is the unfortunate circumstances of many small property owners that they are not able to afford the initial cost of necessary spray equipment to carry out effective measures of supression and eradication of noxious weeds. This problem was overcome by furnishing spray equipment from this department free of charge. Three spray rigs mounted on four-wheel power trucks were available to farmers of this county for weed control work on their property. The only expense involved was the wage of a truck driver and of chemical materials supplied by this department.

With trained personnel and equipment to help farmers, a systematic program of contacting farmers and all other land owners throughout the county was carried out. Properties were inspected for noxious weeds, and the owners were urged to join in the program of controlling any infestations on their land. At the same time, Irrigation Districts, Reclamation Districts, Railroads, and any other agencies with property were contacted to gain their cooperation in this program. Other men were assigned the task of taking care of the state and county roads for roadside infestations.

The inspection of properties throughout the county gave a comprehensive survey of infestations of noxious weeds. Although the general locations of most of the noxious perennials were known to inspectors in their districts, the systematic inspection of all properties did reveal the presence of infestations hitherto unknown. This was exemplified in the new discovery of a number of small infestations of Klamath Weed. In the case of roadside infestations of such perrenials as Johnson Grass, Russian Knapweed, and Hoary Cress, arrow markers were painted on the road to give the location for future treatment with soil sterilant during the winter months.

To supplement the educational work of ranch calls, a number of grange and farm center meetings were attended by members of this department. Talks were given on the problems of weed control, and the special weed control program was explained. Often these talks were supplemented with picture slides. Periodically throughout the year, local radio stations and newspapers publicized the problems of weed control.

The activity of weed control work in San Joaquin County has by no means restricted itself to the weeds concerned in the special weed control program. Farmers in many cases have come to recognize the advantages in the use of chemical weed control as contrasted with cultivation methods or where cultivation is not possible. Selective

spraying in such crops as grain, rice, celery, carrots, and alfalfa has been widely accepted in this county. Commercial pest control operators alone treated over 26,000 acres.

Weed Control Work Carried Out With County Equipment

Private Property	
Properties worked	184
Acres treated with contact material	409
Gallons of contact material applied	49,975
Square rods treated with soil sterilants	4,755
Pounds of soil sterilants applied	47,745
County Highways	
Total miles inspected and treated	39,544
Gallons of contact material applied	141,860
Pounds of soil sterilants applied	16,440
State Highways	
Total miles inspected and treated	5,741
Gallons of contact material applied	25,493
Pounds of soil sterilants applied	880

SEED INSPECTION

One of the important duties of this office is to prevent the introduction of noxious weed seeds into this county. This is accomplished by inspecting all seed brought into the county for planting purposes or for any other purpose which may disseminate weed seeds. Shortly after notification by common carriers of the arrival of seed lots into the county, inspection is conducted for the presence of noxious weed seed or insect pests.

Grain Inspection During the year, numerous shipments of grain, both bulk and sacked, is brought into the county for stock feeding or seeding purposes. Quarantine samples are drawn for noxious weed seed content, and the general condition of the lot is inspected for foreign material such as cotton, corn cobs, or any other debris that may be capable of harboring insect pests. Grain lots found infested with pests are disposed of by appropriate methods of cleaning, grinding, burning, or fumigation.

	Lots Passed	Lots Rejected	Total Lots Inspected
Interstate Lot Inspected	509	135	644
Intrastate Lot Inspected	15	3	18

Lots Rejected in Tonnage

Tonnage	Reason for Rejection	Disposition
4,950 tons	Johnson Grass & White Horsenettle	Recleaned & Screenings Ground
100 tons	Morning Glory	Recleaned & Screenings Ground
50 tons	Russian Knapweed	Diverted Out of County
100 tons	Quack Grass	Ground
60 tons	Canada Thistle	Recleaned, Screenings Ground & Burned
200 tons	European Corn Borer	Debris Burned
50 tons	Yellow Star Thistle	Recleaned & Screenings Ground

Agricultural and Vegetable Seed Inspection Under Chapter 5, Section 125, of the State Agricultural Law and under the California Seed Law, lots of agricultural and vegetable seed are inspected to see that they meet the provisions of these laws. Quarantine samples are drawn and inspected for noxious weed seed. Labels are scrutinized for correct information. Periodic inspection of seed houses is maintained throughout the year, especially to check the germination date, since it is effective only for a given length of time. This year, 270 lots of agricultural and vegetable seed were inspected in this county. Of this number, only three lots were rejected due to the presence of noxious weed seed. One lot was rejected for quack grass and the other two for yellow star thistle seed.

Screenings Throughout the year, screenings at the 28 warehouses were inspected for noxious weed seeds. Those lots found infested were rejected and the required sixty days was given to the owner to dispose of the lot by recleaning, grinding, or burning. Out of the 18,323 sacks of screenings inspected, 1,698 sacks were rejected for noxious weed seeds. These rejected sacks of screenings were disposed of by recleaning and grinding.

The following weed seeds were present in lots rejected:

KIND OF SEED	NUMBER OF LOTS	NUMBER OF SACKS	DISPOSITION
Morning Glory	1	415	Ground
Yellow Star Thistle	3	786	Recleaned
Russian Knapweed	2	177	Ground
Russian Knapweed, Johnson Grass	1	320	Recleaned

SEED CERTIFICATION

Under Section 916.1 of the California Seed Law, this office is authorized to supervise the harvesting, cleaning, and packing of seed eligible for certification and label and seal such lots which meet the requirements of certification. There are eight warehouses in the county which handle beans, clover, wheat, barley, alfalfa, Harding grass, Sudan grass, and milo for certification. Before a lot is cleaned for certification, the cleaner is thoroughly inspected for any foreign seeds which may infest the lot of seed to be cleaned. After the lot is cleaned, a representative sample is taken. The sample is divided, and one portion is sent to the seed certification agency and the other portion of the sample is retained by this office. When a lot passes certification, the lot is tagged and sealed under our supervision with tags and seals sent to this department by the seed certifying agency. During the season, 278 lots of beans were sampled, which comprised a total of 109,005 sacks. In addition, 37 other types of seed lots were drawn for certification, which represented 8,400 sacks of seed.

APIARY

The purpose of bee inspection is to prevent the introduction and spread within the county of diseases injurious to bees. Colonies infested with American Foulbrood, a very infectious bee disease, are fumigated to kill the diseased bees and then burned to eradicate the disease.

This year, no one of this department was assigned officially the task of bee inspection in the county. Consequently, inspectors of the various districts carried out such inspections as necessary. Inspection of apiaries in the county revealed 12 colonies infested with American Foulbrood. These were destroyed according to prescribed methods under the law. Throughout the year, a number of requests for information at this office was received from novice beekeepers. Also, routine issuing of registration forms and queen certificates and the recording of bee movements were handled by this office.

FAIRS AND EXHIBITS

Top honors were bestowed upon the exhibits of agricultural commodities from San Joaquin County, both at the California State Fair and the National Orange Show at San Bernardino. Along with the many trophies and ribbons received by this county, cash awards totaling $4,000 were won at these two fairs.

AT THE CALIFORNIA STATE FAIR The theme of the '49 Gold Rush was portrayed by an animated exhibit featuring a pioneer couple riding a covered wagon pulled by a pair of oxen. Surrounding the elevated pioneer animation, a display of rich bountiful agricultural products gave proof that the reward of the West was indeed great. The fruits, nuts, vegetables, and vintager's delights in quality unsurpassed were given top awards for the best complete display artistically arranged, and for the best and most complete agricultural and horticultural exhibit.

Twelve first sweepstake prizes were received which included cling peaches, freestone peaches, shipping plums, walnuts, almonds, table grapes, barley, vegetable seed, root vegetables, plant vegetables, and tomatoes.

Second-place sweepstakes were won on prunes, canning plums, wine grapes, wheat, field seed, and melons. This exhibit was awarded 15 cups, 118 blue ribbons, 75 second-place ribbons, and 49 third-place ribbons. This year, five San Joaquin Wineries received 39 awards in the state-wide wine judgings in the open division and the new special division held for the first time. Gold, silver, bronze, and honorable-mention awards were offered in the open division, while special division awards were on a comparative basis. Thus, for the second consecutive year the California State Fair awarded the giant sweepstakes cup to San Joaquin County for the richest agricultural display at the fair.

AT THE SAN BERNARDINO NATIONAL ORANGE SHOW Top honors were bestowed upon San Joaquin County's exhibit. The theme "Out of This World" was depicted by a large revolving world surmounting the exhibit, with lesser globes centered on revolving tables covered with agricultural produce at each corner. Twelve miniature mechanical farmers in a circle on the central table moved in a harvest endeavor exemplifying that in San Joaquin County - "Any Time is Harvest Time".

AT THE SAN JOAQUIN COUNTY FAIR Twelve districts, the largest number of districts ever to submit entries in any one year, participated with the 49'ers Gold Rush Days as the central theme.

The various districts represented displayed a great array of diversified crops produced in this county, showing that the early 49'er found a great wealth of the soil. Awards at the county fair were as follows: In the Community Display, Section I, the Escalon exhibit was awarded first prize. Linden followed in second place; Tracy, in third place; Thornton, fourth place, and Lodi, fifth. In the Community Display, Section II, Farmington was awarded first prize, followed by Clements in second place and Stockton in third place. In the Feature Display, French Camp took first prize; San Joaquin Delta, second; Ripon, third; Manteca, fourth; and Lockeford, fifth place.

COOPERATION WITH BUREAU OF MARKET ENFORCEMENT AND BUREAU OF MILK CONTROL

Unveiling the statistics on money recoveries and money adjustments shows that many farmers in this county took advantage of the services extended by these State Bureaus. Through investigations, hearings, and procedures set forth under the Produce Dealers Act, the Processor's Law and Milk Control Laws resulted in a net remittance of $183,072.77 to growers of this county.

Whenever controversies arise between growers and dealers or processors, the County Agricultural Commissioner's Office extends every possible effort to aid the Bureau of Market Enforcement by collecting necessary evidence concerning these cases. With this evidence it is possible to offer a thorough presentation of facts on both sides which will result in a fair readjustment to all concerned. Many of these complaints are first received at this office and then all details concerning the complaint are transmitted to the Bureau.

All buyers of farm commodities must be licensed by the Bureau of Market Enforcement. This applies to cash buyers as well as others. The County Department assists the Bureau in seeing that all these buyers are properly licensed.

The following amounts were recovered:

	Number of Participants	Amount Received
Produce Dealers	94	$ 42,421.28
Processors	119	$125,784.02
Milk Recoveries	39	$ 14,867.47
Total	252	$183,072.77

The County also maintains a special office in the Agricultural Building for State Officials for the purpose of holding hearings or any other activity which requires office space.

MISCELLANEOUS DEPARTMENTAL DUTIES

In order to extend better service to the farmers in this county and to more effectively carry out the duties of this department, members of this department have engaged in a number of miscellaneous activities. Some of the more important functions are as follows:

Entomology Class Paramount among pests that cause damage to agricultural crops are certain insects. In order that the inspector personnel of this department may become better acquainted in the identification of insects and recognize detrimental species, night classes on a voluntary basis were held once a week for a period of 3 months this year.

Identification of Insects, Diseases, and Plants Among the more important duties of this department is the proper identification of insects, diseases, and plants. In many cases it is obvious that such information be available before problems dealing with these insects, diseases, or plants can be solved. In case verification in the identification of these insects, diseases, or plants is necessary, specimens are prepared and sent to the taxonomist at the State Department of Agriculture.

Farm Bureau and Grange Meetings One of the best opportunities to contact farmers and pass on information pertinent to the work of this department is through the Farm Bureau and Grange meetings. Here, specific problems of that district can be discussed or educational methods employed. By having a member of the Department present, questions related to the work of the Department can be readily answered.

Photographic Work Each year, numerous pictures are taken and developed by this department. This year, 63 black and white films and 300 colored slides were prepared in our laboratory. This has provided a very convenient method of securing a record of agricultural facts found in this county. By developing the pictures in our own laboratory, time is saved and costs reduced. Employing the use of photographs as court evidence on several occasions this year has been most helpful. Most important of all has been the value of these pictures for visual education. At farm meetings, talks supplemented with slides portraying conditions in the county have been very helpful.

Salinity Test In many places in the delta area the salinity of water tends to become concentrated. Since this area relies on this water for irrigation of crops, it is of vital importance that farmers keep a close tab upon the salinity of the water. Consequently, a number of farmers brought in samples of water to have it tested for salt concentration. Whenever samples were submitted for examination, tests were run in our laboratory.

Soil Tests In answering calls from persons in rural and urban areas having plants growing improperly, it is often necessary to make a laboratory analysis of the soil in which such plants are growing. Frequently, alkali soil is found responsible for the adverse conditions; other tests revealed the deficiency of some vital food material. During this year, 51 samples of soil were submitted for examination.

Special Agricultural Reports Throughout the year, numerous requests are received by this department for statistical information on various crops grown in this county. These requests may include one crop or a number of different crops. This, in turn, may be for only a given section of the county. Since farmers and a host of agencies connected with the handling and processing of farm commodities are vitally interested in the production fluctuations of various crops, statistical information is of prime importance in planning for the future.

Spraying of County Shade Trees During the past year, it was necessary to spray certain sycamore and ash trees in the county. These trees were seriously attacked by the sycamore scale and the ash plant bug on their respective hosts. A total of 592 sycamore trees were sprayed, using 14,000 gallons of dormant oil spray mixture which was applied during January. The trees were observed to be greatly improved during the past summer. The ash trees were sprayed to kill the ash plant bug which kills off new foliage as it appears in the spring. Good control of this insect was obtained.

Shop Work Paramount among the activities of this department is the work carried out in the Department's shop. This year, with the extensive weed control program, it became necessary to secure adequate equipment to carry out this program. This, in turn, called for spray-rigs to meet special requirements of roadside spraying and private property work. This problem was solved by constructing this weed control equipment in our shop. In the case of rigs for roadside work, seats were mounted in locations that offered the workman the best position for locating and spraying weed infestations. Safety devices, such as red blinker lights and chain guards, were installed on the rigs in the shop. Throughout the season, repair and maintenance of this equipment was carried out in the shop.

Also in the shop, fair exhibits are designed and constructed. All of the mechanical and electrical devices required in running the moving objects are assembled in the shop. Since most of the parts that make up the construction of many of the exhibits are not available through commercial channels, it becomes the responsibility of the shop personnel to plan and build the necessary parts.

Spray Residue Along with the regular standardization work at ranches, markets, and shipping centers, inspector personnel are instructed to maintain a close look-out for crop commodities with spray residue present. Any fruits or vegetables with such residue or which are suspicioned to be contaminated with spray residue are sent to the Bureau of Chemistry of the State Department of Agriculture for analysis. This is an important duty of the inspectors, for many of the chemicals used in the control of fruit and vegetable pests are highly poisonous.

Staff Meetings Periodically throughout the year, meetings are held by members of the department. These meetings are convened to discuss current problems of the department with reference to standardized methods of inspection and changes in the laws. Also, reports are given by inspectors of activities in their respective districts. These meetings have been of vital importance in dissemination of information of departmental policies and county activities.

Sugar and Sugar-Acid Tests In order to aid grape growers at the beginning of the harvest season, Tokay grapes were given the sugar (degree Balling) or sugar-acid (Balling-acid ratio) test free of charge by this department. Since the acidity of the grapes is correlated with their eating quality as well as the sugar content, tests were sometimes run on both. This eliminated the guessing as to the proper time to pick the Tokay grapes; thus, premature pickings were held to a minimum. This season 222 sugar-acid tests were run.

Weather Reports During the year, weather reports on crop growing conditions in the county are filed with the United States Weather Bureau. These reports are submitted each week in the summer and once each month during the winter.

FINANCIAL REPORT SUMMARY
FOR FISCAL YEAR ENDING JUNE 30, 1949

CLASSIFICATION

Administrative	$ 23,458.83	
Plant Quarantine	15,235.21	
Fruit, Nut, Vegetable, Honey, and Egg Standardization	12,174.25	
Field, Orchard, and Nursery Inspection	12,116.66	
Rodent Control	10,421.62	
Weed Control	8,226.10	
Crop Statistics	7,158.54	
Office Personnel	4,815.24	
Fairs and Exhibits	7,112.98	
Maintenance and Operation	27,860.00	
Capital Outlay	820.00	
General	4,171.19	
GRAND TOTAL EXPENSES		$133,570.62

COLLECTIONS REMITTED TO COUNTY TREASURER

Special Agricultural Inspection	$ 3,518.25	
Wine Grape Inspection	11,137.08	
Fairs and Exhibits	5,478.50	
GRAND TOTAL CREDITS		$ 20,133.83

CROP SUMMARY
SAN JOAQUIN COUNTY
YEAR - 1949

Since success and failure in the production of many crops is directly effected by the fluctuations of weather conditions throughout the year, no crop report would be complete without a concise statement of the year's weather development.

Subnormally cold weather greeted the new year, 1949. The mercury sank to a new all-time record of 16.8 degrees. Truck crops suffered some freezing damage. The cold weather, combined with the lack of sufficient precipitation, retarded all growth in winter grains, vegetables, and grasses. Frozen ground delayed some plowing and planting operations. The sparsity of range and pasture feed necessitated supplemental feeding of livestock throughout the month of January. This condition continued until mid-February, then moderate to warm temperatures prevailed for the remainder of the month. The favorable temperature, coupled with lighb rains, stimulated the growth of such crops as spinach, peas, onions, grain, alfalfa, ladino clover, and pasture land. Cherry, apricot, plum, and early variety of peach trees had broken dormancy and buds began to swell.

March represented a month of unsettled weather. The near drought was sharply broken by heavy rains of nearly 6 inches during the month. Some farm operations were curtailed, especially the spraying of fruit trees. Temperatures were relatively mild and crops in general began to make more rapid advances in growth.

Warm dry weather prevailed in April, benefiting generally all crops except grain and pasture in non-irrigated areas which still needed additional rain. As a result of the dry weather, farmers found it necessary to irrigate fields and orchards. Irrigation was continued throughout the remainder of the season, for new rains never materialized, except very light rains in May.

Although the drought during the winter gave crops a slow start, the early spring of mild warm weather advanced the crops approximately a week ahead of normal. A minimum development of plant diseases along with a heavy set of fruit gave farmers crops of superior quality and quantity.

Throughout the summer and late into the fall, excellent weather prevailed for growing and harvesting of crops in San Joaquin County. Not until November 7 did the first light rain occur. However, this had no effect on harvest operations, and by the time the first precipitation of any appreciable amount occured a month later, all crops susceptible to damp weather had been harvested, especially grapes and tomatoes. Abundance and excellent quality marked the theme for most crops during 1949 in San Joaquin County.

Fruits and Nuts

Almonds The almond crop this season was of good quality. Although the crop was spotted in some areas, a heavier crop was produced. Harvesting problems were held to a minimum, since there were few almond stick-tight hulls. The almond mite prevalent in many orchards still represented a problem to growers.

Apricots The quality of the fruit was fair and production was spotted. There was an increase in fresh shipments, and tonnage to processors showed a decided drop. There was about a 50-ton increase in dried apricots over the previous year.

Cherries Most spectacular was the unusually high production tonnage this season. Although quality was good since splits and brown rot were at a minimum, the row size was increases sharply with the small fruit. In a number of cases, growers did not harvest their fruit since prices were appreciably reduced on small fruit in eastern markets and at canneries. Large-sized cherries, however, in eastern markets brought a good price.

Chestnuts Crop yield was about average or same as the previous year. The price was lower; also, the acreage decreased slightly. Shippers had some trouble with mold, which can probably be attributed to methods of harvest and packing.

Figs Due to the favorable weather, crop production was good, showing a decided increase over the year before. The price and acreage remained approximately the same this year.

Grapes This year the quality of both table and juice grapes was good. The excellent weather conditions during the harvest season permitted growers to pick their entire crop without any losses. Tokay growers thinned approximately 11,000 acres to produce better quality. Although the color of the Tokays was only fair, the sugar content was higher than the previous year. There was a sharp increase of nearly 1 1/2 million packages over last year to eastern markets. As might be expected, shipments to wineries were cut nearly in half.

Olives Crop production compared with last year decreased 50 percent. Only a small portion of the olives went to canneries; the bulk of the olives were crushed for oil.

Peaches, Cling There was a sharp increase in the cling peach tonnage, which comprised of an increase of 10,000 tons. The heavy yield resulted in a ring size change from 2 3/8 inches to 2 1/2 inches to lower the tonnage of acceptable fruit to the canneries and keep the price from dropping excessively. However, prices still declined $25 per ton.

Peaches, Free Quality was good; however, the tonnage to processors decreased slightly. Prices were lower. This year some trouble was experienced with mildew and a small amount of brown rot. Shipments of fresh peaches decreased this year, mainly due to poor marketing conditions.

Pears Most notable about the pear crop was the drastic price reduction. The price per ton decreased from the $125.00 level of the previous year to $33.94, or a reduction of $91.06. Most of the pears went to the canneries.

Plums Due to small size, production was lower this year. Along with the sharp price decline of about 45% under the previous year, many growers did not pick all of their crop.

Walnuts Tonnage bounced up 1,000 tons over the year before. However, the price fell from $480 per ton to $360 per ton this year. The size of walnuts stayed about the same and quality was good. There was also a smaller percentage of worm damage this year.

Field Crops

Alfalfa In general, yield and quality were both good for the year. However, the 3rd and 4th cutting did suffer some worm damage. Prices declined some. Cold weather at the beginning of the season held back the crop temporarily; however, the number of cuttings averaged from 5 to 5 1/2 in the county.

Beans The bean acreage declined about 2,000 acres; however, yields improved some. Although there were acreage increases in a number of varieties, the over-all total acreage dropped with the drastic reduction in Black Eye Beans of nearly 4,500 acres. Varieties topping the list in acreage are Red Kidneys, 7,710 acres; Baby Limas, 6,375 acres; Pintos, 1,841 acres; Pinks, 1,832 acres; Black Eyes, 1,679 acres; and Dark Red Kidney, 1,101 acres.

Field Corn The acreage of field corn stayed about the same. Yield was good and harvest conditions were favorable; however, the price slumped to $10 per ton.

Grain Sorghum This crop decreased 1,423 acres, bringing the county acreage down to 3,867. Yield per acre remained about the same, but price dropped 15¢ per hundred pounds.

Grain At the beginning of the season, grain crops suffered throughout the county due to insufficient rainfall. Conditions were finally improved; however, some stands on the Westside were sheeped-off. Grain in the Delta area and other areas where irrigation was carried out gave very good yields.

Hay The yield and price remained about the same. However, the acreage decreased 1,600 acres under last year's of 10,335 acres.

Sugar Beets The acreage increased 2,600 acres. Also, yields were slightly higher and the price rose some. The sugar beets had a higher sugar content this year.

Sunflower The quality of this crop was impaired by insect damage this year. Acreage increased 400 acres, but the price declined $2 per 100 pound weight.

Sweet Potatoes The quality of this crop was good, but the size in general was smaller. This year, demands were good and prices firm. Most of the crops were sold in the field. Both yield and acreage showed an increase.

Vegetable Crops

Asparagus This year, growers experienced a very good season. With the increased acreage of 6,706 acres and higher production there was nearly an 11,000 ton increase to canneries.

Carrots The acreage dwindled over 200 acres, decreasing the county acreage to 406 acres. This is below the ten-year average. Yield was normal.

Celery There was a slight increase in celery acreage in the county. Growers increased the yield considerably by planting more double rows, closer planting, and applying generous quantities of fertilizer. Market prices declined from $2.30 to $1.75 per crate. Near the end of the season a freeze caught about 200 acres still in the field, which required heavy trimming of the stalks.

Melons Acreage stayed about the same; however, the average yield declined some. Growers enjoyed a firm price and a steady demand.

Onions County acreage rose 400 acres to 2,876 acres. This year, the crop was lighter and quality only fair. Neck-rot was not as bad as in previous years, although some was evident in some fields. Premature harvesting caused some break-down in storage onions.

Peas There was a slight increase in shipping peas acreage, but processed pea acreage declined. Most noticeable was the large increase in yield, especially in shipping peas. The yield rose from 68 hampers of the previous year to 160 hampers. Processed peas also increased half a ton per acre.

Spinach Favorable growing conditions brought the yield up; also, the price increased some. There was an increase of 120 acres. Most of the spinach was irrigated. Aphis was no problem this year.

Strawberries The 63-acre increase of new strawberry plantings caused the average yield to decrease by approximately 300 crates per acre. Hot weather may have also contributed to this decrease in yield, for many blossoms were dropped.

Tomatoes This year, tomato growers enjoyed an excellent season. Consequently, the average yield rose sharply. Shipping tomatoes showed an increased yield of 400,000 packages. The tonnage of round tomatoes to the processors set a county record of 15.31 tons per acre. Sun scald was responsible for most of the damage to tomatoes. Damage by worms and mold were at a minimum.

FRUIT AND NUT CROP
SAN JOAQUIN COUNTY - 1949

CROP		BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	PRODUCTION UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Almonds		8,014	.68	5,450	Ton	$ 309.63	$1,687,484.
					25-lb.		
	(Shipping)		7.82	13,865	pkge.	1.00	13,865
Apricots	(Processed)	1,773	1.17	2,074	Ton	42.50	88,145
	(Dried)		.17	301	Ton	420.00	126,420
Cherries	(Royal Ann)	1,084	6.24	6,764	Ton	140.00	946,960
Other Cherries	(Shipping)	3,027	2.40	7,265	Ton	346.92	2,520,374
	(Processed)		1.41	4,268	Ton	140.00	597,520
				18 297			406485 4
Chestnuts		132	1.52	201	Ton	300.00	60,300
	(Shipping)		.03	15	Ton	142.00	2,130
Figs	(Processed)	500	1.10	550	Ton	80.00	44,000
	(Dried)		.19	95	Ton	160.00	15,200
Juice Grapes	(Shipping)	33,398	.74	24,715	Ton	75.00	1,853,625
	(Wine)		2.41	80,489	Ton	23.50	1,891,492
					28-lb.		
Tokay Grapes	(Shipping)	20,104	250.52	5,036,454	pkge.	1.28	6,446,661
	(Wine)		3.97	79,813	Ton	22.50	1,795,793
					28-lb.		
All Other Grapes	(Shipping)	2,124	23.34	49,574	pkge.	1.25	61,968
	(Wine)		5.34	11,342	Ton	22.50	255,195
Mis'l. Orchards		679			Acre	200.00	135,800
					28-lb.		
Nectarines		195	310.00	60,450	pkge.	1.10	66,495
Olives		348	.64	223	Ton	118.58	26,443
					20-lb.		
Peaches	(Shipping)		148.96	465,202	crate	.90	418,682
Free	(Processed)	3,123	2.59	8,089	Ton	35.00	283,115
	(Dried)		.31	968	Ton	240.00	232,320
Peaches	(Processed)	5,403	10.07	54,408	Ton	40.00	2,176,320
Cling	(Dried)			8	Ton	140.00	1,120
Pears	(Shipping)	142	.58	82	Ton	69.00	5,658
	(Processed)		4.60	653	Ton	33.95	22,169
					28-lb.		
Plums	(Shipping)	1,174	130.00	152,620	crate	1.38	210,616
	(Processed)		.12	141	Ton	30.00	4,230
					28-lb.		
Prunes	(Shipping)	673	63.25	42,567	crate	1.38	58,742
	(Dried)		.27	182	Ton	180.00	32,760
Walnuts		9,720	.86	8,359	Ton	360.00	3,009,240
					TOTAL		$25,090,842

FIELD CROPS
SAN JOAQUIN COUNTY - 1949

CROP	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	PRODUCTION UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Alfalfa Hay	58,925	6.00	353,550	Ton	$ 23.50	8,308,425.
Barley	90,966	16.50	1,500,939	Cwt.	2.30	3,452,160.
Beans, Dry	19,279	16.75	322,923	Cwt.	7.71	2,489,736.
Bean Straw	900	1.00	900	Ton	16.50	14,850.
Corn, Grain	10,735	1.25	13,419	Ton	50.00	670,950.
Corn Husks			230	Ton	600.00	138,000.
Flax Seed	96	5.85	562	Cwt.	7.42	4,170.
Grain Sorghum	3,867	17.00	65,739	Cwt.	2.45	161,061.
Hay, Grain	9,308	1.30	12,100	Ton	22.00	266,200.
Hay, Wild	8,699	1.00	8,699	Ton	20.00	173,980.
Mint	650	48.00	31,200	lbs.	5.00	156,000.
Oats	8,496	8.00	67,968	Cwt.	2.25	152,928.
Pasture: Range	226,151			Acre	2.00	452,302.
Pasture: Clover	57,104			Acre	45.00	2,569,680.
Pasture: Sudan Grass	1,350			Acre	35.00	47,250.
Pasture: Stubble	123,228			Acre	1.25	154,035.
Potatoes: Market	5,285	300.00	1,585,500	Cwt.	2.05	3,250,275.
Pumpkins (Canning)	471	5.00	2,355	Ton	6.00	14,130.
Pumpkins (Stock)		20.00	9,420	Ton	3.00	28,260.
Rice	8,091	35.00	283,185	Cwt.	3.40	962,829.
Silage, Corn	874	14.00	12,236	Ton	5.00	61,180.
Sugar Beets*	10,655	16.50	175,808	Ton	12.67	2,227,487.
Sunflowers	1,464	12.40	18,154	Cwt.	7.00	127,078.
Sweet Potatoes	1,705	157.00	267,685	50 lb. crate	2.50	669,213.
Wheat	12,854	9.00	115,686	Cwt.	3.30	381,764
					TOTAL	26,933,943

*Includes Federal Subsidy

VEGETABLE CROPS
SAN JOAQUIN COUNTY - 1949

CROP	ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	PRODUCTION UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Asparagus (Shipping)	51,836	15.46	801,384	30-lb. crate	3.60	$ 2,884,982.
(Processed)		.80	41,544	Ton	178.40	7,411,450.
Beets, Table	14	8.90	125	Ton	60.00	7,500.
Broccoli	10	135.00	1,350	Crate	1.35	1,823.
Cabbage	48	275.00	13,200	Crate	1.15	15,180.
Cauliflower	22	250.00	5,500	Crate	1.15	6,325.
Carrots	406	12.40	5,034	Ton	60.00	302,040.
Celery	4,188	310.00	1,298,280	Crate	1.75	2,271,990.
Corn, Sweet	541	165.00	89,265	Crate	1.60	142,824.
Cucumbers	480	4.50	2,160	Ton	52.00	112,320.
Garlic	14	90.00	1,260	Cwt.	15.00	18,900.
Lettuce	197	150.00	29,550	Crate	1.50	44,325.
Melons Cranshaws	138	271.00	37,398	Crate	1.40	52,357.
Cantaloupes	395	215.00	84,925	Crate	1.96	166,453.
Casabas	321	7.25	2,327	Ton	26.25	61,084.
Honeydews	212	6.50	1,378	Ton	32.80	45,198.
Persians	82	6.50	533	Ton	32.80	17,482.
Watermelons	1,426	12.50	17,825	Ton	18.65	332,436.
Onions (Early)	2,018	450.00	908,100	50 lb. sack	.75	681,075.
(Late)	858	475.00	407,550		.90	366,795.
Peas (Shipping)	162	160.00	25,920	30 lb. tub	1.87	48,470.
(Processed)	695	1.75	1,216	Ton	57.00	69,312.
Peppers	89	11.00	979	Ton	40.00	39,160.
Spinach	680	4.07	2,768	Ton	26.36	72,964.
Squash	348	8.00	2,784	Ton	15.68	43,653.
Strawberries	275	885.00	243,375	12 basket crate	1.75	425,906.
Tomatoes (Shipping)		49.65	981,283	32 lb. lug	2.10	2,060,694.
(Round)	19,764	15.31	302,587	Ton	22.50	6,808,208.
(Pear)	2,953	13.74	40,574	Ton	28.00	1,136,072.
Truck Garden	1,045			Acre	200.00	209,000.
				TOTAL		$ 25,855,978.

SEED CROPS
SAN JOAQUIN COUNTY - 1949

CROP	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Alfalfa Seed	152	350.00	53,200	lb.	$ .25	$ 13,300.
Asparagus Roots	191			Acre	400.00	76,400.
Beans (Black Eyes) (Certified)	18	8.00	144	Cwt.	15.00	2,160.
Beans (Cranberry) (Certified)	69	16.90	1,166	Cwt.	8.85	10,319.
Beans (Dark Red Kidney) (Certified)	38	16.00	608	Cwt.	9.25	5,624.
Beans (*Red Kidney) (Certified)	3,195	18.00	57,510	Cwt.	9.25	531,967.
Carrot Seed	20	340.00	6,800	lb.	.40	2,720.
Ladino Clover Seed	1,658	90.00	149,220	lb.	1.10	164,142.
Milo Seed	40	19.00	760	Cwt.	3.00	2,280.
Nursery (Grape Vines)						16,650.
Nursery (Others)						111,800.
Nursery (Trees)						84,000.
Onion Seed	6	310.00	1,860	lb.	1.00	1,860.
Potato (Certified)	880	235.00	206,800	Cwt.	3.00	620,400.
Sudan Grass Seed	128	9.00	1,152	Cwt.	5.25	6,048.
Squash Seed	6	300.00	1,800	lb.	.35	630.
Watermelon Seed	28	222.00	6,216	lb.	.40	2,486.
				Total		$ 1,652,786.

*Average selling price as of January 20, 1950

THE TREND OF PERMANENT CROPS IN SAN JOAQUIN COUNTY
YEAR - 1949

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
ALMONDS		
Drake	5	562
I X L		210
Eureka		2
Jordanolo	140	509
Ne Plus	48	427
Nonpareil	643	3,199
Peerless	65	216
Mission (Texas)	541	2,743
Other	2	146
Total	1,444	8,014
APPLES (All)		36
APRICOTS		
Blenheim & Royal	50	913
Tilton	33	850
Other		10
Total	83	1,773
CHERRIES		
Bing	331	1,614
Black Republican	2	99
Chapman	11	147
Lambert	15	290
Royal Ann	147	1,084
Tartarian	45	767
Other	28	110
Total	579	4,111
CHESTNUTS (All)	2	132
FIGS (All)	6	500
FILBERTS (All)		6
GRAPES (Raisin)		
Muscat	6	85
Thompson Seedless		788
Zante Currants		14
Total	6	887

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
GRAPES (Table)		
Concord		10
Emperor		255
Malaga		91
Ribier		172
Tokay	306	20,104
Other	2	709
Total	308	21,341
GRAPES (Wine)		
Alicante	75	6,627
Burger	8	698
Carignane	71	7,312
Golden Chasselas	10	695
Grenache	25	436
Mission	82	1,720
Petit Sirah		578
Zinfandel	211	14,649
Other White	97	347
Other Dark	27	336
Total	606	33,398
NECTARINES (All)	12	195
OLIVES (All)	12	348
PEACHES (Cling)		
Gaume	67	986
Halford	54	1,142
Paloro	102	1,393
Peak	12	214
Phillips	10	667
Tuscan		57
Walton		89
Other	324	855
Total	569	5,403
PEACHES (Free)		
Elberta	114	713
J. H. Hale	23	333
Lovell	1	526
Muir		372
Salway		46
Other	110	1,133
Total	248	3,123

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
PEARS (All)		142
PERSIMMONS (All)		14
PLUMS		
Burbank		51
Climax		7
Duarte	47	64
Grand Duke		34
Kelsey		87
President	2	185
Santa Rosa	52	214
Tragedy	8	309
Wickson		25
Other	57	198
Total	166	1,174
PRUNES		
French		209
Imperial		53
Robe de Sargent		56
Sugar		348
Other		7
Total		673

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
QUINCES (All)		8
WALNUTS		
Concord		16
Eureka	40	2,239
Franquette	151	1,934
Mayette	15	687
Payne	138	4,602
Other	407	242
Total	751	9,720
WALNUTS (Black) (Including roadside trees)	464 + 215	623
ASPARAGUS	2,163	51,836

THE TREND OF FRUIT & NUT CROPS IN SAN JOAQUIN COUNTY
AT FIVE YEAR INTERVALS

BEARING ACREAGE

CROP	YEAR 1930	YEAR 1935	YEAR 1940	YEAR 1945	YEAR 1949
Almonds	2,697	3,613	4,221	6,502	8,014
Apples	36	28	32	36	36
Apricots	1,422	1,732	1,621	1,876	1,773
Cherries	1,942	4,417	4,352	4,102	4,111
Chestnuts	60	193	245	182	132
Figs	2,088	547	458	510	500
Grapes, Juice	32,600	33,932	33,893	32,400	33,398
Grapes, Raisin	852	702	979	1,003	887
Grapes, Table	2,064	1,707	1,499	1,276	1,237
Grapes, Tokay	17,041	17,255	17,925	18,110	20,104
Nectarines	52	115	126	195	195
Olives	286	318	364	351	348
Peaches, Cling	3,102	3,413	3,273	4,124	5,403
Peaches, Free	2,640	2,802	2,781	3,181	3,123
Pears	837	672	285	141	142
Persimmons	2	7	5	13	14
Plums	2,077	2,426	1,572	1,280	1,174
Prunes	543	655	1,244	822	673
Walnuts	5,284	8,818	9,084	9,229	9,720

THE TREND OF FIELD CROPS IN SAN JOAQUIN COUNTY
AT FIVE YEAR INTERVALS

CROP	YEAR 1935	YEAR 1940	YEAR 1945	YEAR 1949
Alfalfa Hay	38,633	47,822	50,505	58,925
Barley	137,725	92,483	91,199	90,966
Beans	36,316	25,090	11,469	19,279
Corn (Grain)	27,650	16,583	14,564	10,735
Flax Seed	416	1,276	520	96
Grain Sorghum	11,832	14,057	4,187	3,867
Hay (Grain)	25,493	22,966	22,101	9,308
Hay (Wild)	2,817	10,839	24,573	8,699
Oats	16,611	10,043	7,480	8,496
Pasture (Range)	242,916	238,381	219,625	226,151
Pasture (Ladino Clover)	6,016	17,898	30,313	57,104
Potatoes	12,657	9,404	7,491	5,285
Pumpkins	425	540	617	471
Rice	1,640	2,507	3,168	8,091
Silage Corn	1,933	1,698	1,463	874
Sugar Beets	10,245	20,485	4,597	10,655
Sunflowers	3,523	3,182	3,175	1,464
Sweet Potatoes	818	2,186	1,330	1,705
Wheat	47,353	38,392	21,661	12,854

THE TREND OF VEGETABLE CROPS IN SAN JOAQUIN COUNTY
AT FIVE YEAR INTERVALS

CROP	YEAR 1935	YEAR 1940	YEAR 1945	YEAR 1949
Asparagus	15,931	31,499	43,681	51,836
Beets (Table)	30	22	63	14
Broccoli	12	125	10	10
Cabbage	30	11	26	48
Cauliflower	10	15	20	22
Carrots	308	786	1,386	406
Celery	6,401	5,885	5,482	4,188
Corn (Sweet)	541	345	432	541
Garlic	11	5	27	14
Lettuce	415	308	63	197
Melons (All)	2,900	3,161	1,907	2,574
Onions	1,968	1,280	2,464	2,876
Peas	1,958	2,310	5,365	857
Pepper	80	43	29	89
Spinach	1,656	534	1,365	680
Squash	461	320	351	348
Strawberries	120	156	15	275
Tomatoes (Round)	11,580	5,036	18,595	19,764
Tomatoes (Pear)		10,557	7,507	1,045

SAN JOAQUIN COUNTY

YEAR - 1949

APIARY PRODUCTS

Honey	579,700 lbs.	@	.07	$ 40,579.00
Bees Wax	8,290 lbs.	@	.34	2,819.00
Queen Bees	10,617 queens	@	.90	9,555.00
Pollenization	5,100 colonies	@	1.00	5,100.00
Package Bees	850 one pound	@	1.20	1,020.00
			Total	$ 59,072.00

DAIRY PRODUCTS

Milk and Milk Products	$ 11,201,520.00

LIVESTOCK

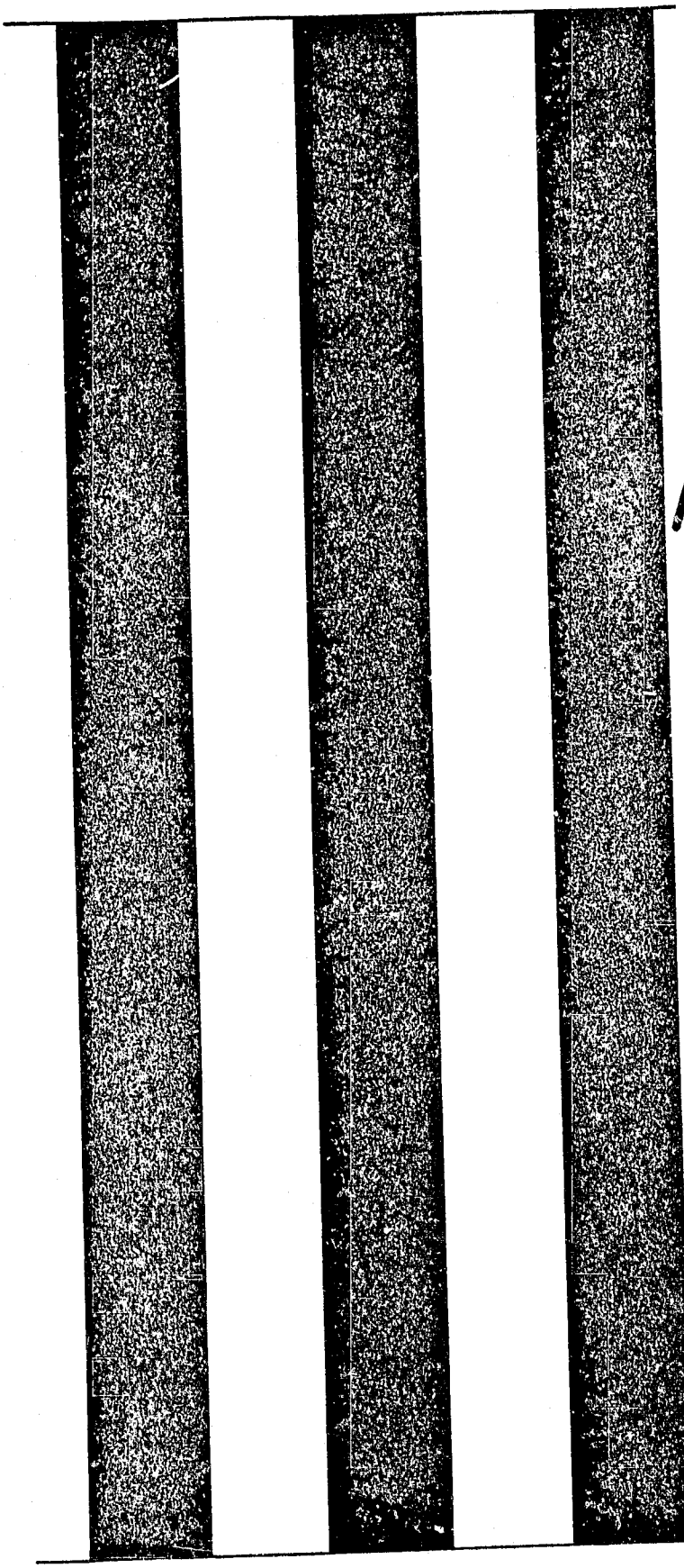
Beef Cattle and Calves	$ 10,074,475.00
Hogs	1,553,567.00
Sheep and Wool	2,114,598.00
Total	$ 13,742,640.00

POULTRY

Chickens	2,444,652 lbs.	$ 605,040.00
Eggs	3,950,539 doz.	1,856,753.00
Turkeys	3,014,455 lbs.	907,373.00
	Total	$ 3,369,166.00

SUMMARY

Fruit and Nut Crops	$ 25,090,842.00
Field Crops	26,933,943.00
Vegetable Crops	25,855,978.00
Seed Crops	1,652,786.00
Apiary Products	59,072.00
Dairy Products	11,201,520.00
Livestock	13,742,640.00
Poultry Products	3,369,166.00
Grand Total	$ 107,905,947.00



1950

AGRICULTURAL CROP REPORT

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COUNTY OF SAN JOAQUIN

☆

1950

SAN JOAQUIN COUNTY
DEPARTMENT OF AGRICULTURE

HANSEN-CARTER CO., STOCKTON

SAN JOAQUIN COUNTY

Department of Agriculture

AUSTIN E. MAHONEY
AGRICULTURAL COMMISSIONER

1868 EAST HAZELTON AVENUE

STOCKTON, CALIFORNIA

POST OFFICE BOX 1809
TELEPHONE 6-6806

TO THE STATE DIRECTOR OF AGRICULTURE AND

THE HONORABLE BOARD OF SUPERVISORS

Section 65.5 of the California Agricultural Code requires that the Agricultural Commissioner compile a report covering conditions, acreage, production, and value of the agricultural products of his county, and Section 65 requires that the Agricultural Commissioner keep a record of his official acts and make an annual report to the Director of Agriculture on the conditions of the agricultural interests in his county as to what is being done to control pests and also as to quarantines against pests. This is the seventeenth annual report published by this Department.

Approximately one hundred commercial crops are covered in this report, and for your easy reference they are segregated as to their commercial use wherever possible.

Acreages of permanent crops are reported in actual bearing acreage only, and other crops are reported in actual planted acreage. Production is reported in units commonly used in the marketing of crops commercially in this county. Prices are reported on an F.O.B. basis. Cost of production, harvesting, packing, and other handling costs should be deducted to arrive at a true farm value.

A copies of this report are sent to a number of persons in other states, to federal, state, and county agencies throughout the United States, and to an increasing number of organizations and individuals within the state, the members of this Department have made every effort to make this report as accurate as possible by checking our figures with every known source of reliable information.

I wish to express my sincere appreciation to all who have assisted my inspectors and deputies by furnishing necessary information to them which has made the compilation of this report possible.

Respectfully submitted,

Austin E. Mahoney

AGRICULTURAL COMMISSIONER

1/1/51

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ADMINISTRATIVE AND STAFF PERSONNEL

Stockton Office	Hazelton & B Streets	Stockton 6-6806
Austin E. Mahoney	Agricultural Commissioner	
Lester R. Brumbaugh	Chief Deputy Commissioner	
Lloyd V. Braghetta	Deputy Commissioner	
Mary A. Huberty	Deputy Commissioner	
Elna Benjamin	Bookkeeper & Stenographer	
Ralph A. Burlington	Linden District & Standardization	
Thomas E. Cheatham	Weed Control	
Forrest H. Darby	Quarantine & Standardization	
Floyd W. Hutchings	Entomology and Plant Pathology	
Kenneth W. Jones	Quarantine Certification & Stockton Office	
Ray Mahoney	Seed Cert. & Seed Inspection	
Elmer T. Pahl	Eggs, Fair Exhibit and Seed Inspection	
John R. Solari	Farmington District	
Jay Stewart	Robert Island District	
D. V. Widney	Warehouse	

Lodi Office	Lodi City Hall	Lodi 261
George J. Stipe	Deputy Commissioner	
L. F. Ashley	Victor District	
Marvin Switzenberg	Terminous & Thornton Districts	
C. W. Thompson	Elliott District	

Manteca Office	Manteca City Hall	Manteca 44
Nick J. Wolter	Supervising Inspector & Ripon District	
Walton Bauer	French Camp District	
Allen L. Bugbee	Escalon District	
Jess Grisham	Manteca District	

Tracy Office	Tracy City Hall	Tracy 1264
Aage R. Tugel	Deputy Commissioner	
Wilfred McDaniel	South Tracy District	

SPECIAL WEED CONTROL PROJECT

Clyde Beutler	Inspector
Richard Devol	Inspector
Richard R. Raney	Inspector
Walter Beck	Mechanic

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Elmer Henson	Truck Driver
Charles Posey	Truck Driver

PLANT QUARANTINE

Paramount in the duties of this department are the plant quarantine activities. The protection of our agricultural industry through the prevention of the introduction of detrimental insects, plant diseases, noxious weeds and animal pests existing outside of this county is indispensible. The efficiency of natural geographical barriers have been reduced extensively by the greatly expanded interchange of plant material by modern methods of transportation. Consequently, the first line of defense against the introduction and dissemination of injurious agricultural pests must be sustained by methodic quarantine inspection of all plant materials or public conveyances entering this county capable of carrying these pests.

This involves the inspection at all post offices, vessels, freight, express, and truck line offices of all incoming and outgoing shipments of plant material and conveyances which may carry injurious plant disease, insect pests, or noxious weeds or animal pests. All such shipments are held for inspection by the common carrier. Most of these places are visited daily by inspectors, and containers of all shipments subject to quarantine are opened and examined for the presence of pests or prohibited material. Whenever shipments are found in violation, disposition of such plant material is either by treatment, destruction under the supervision of the inspector, or return to place of origin.

Since San Joaquin County has a great diversification of agricultural crops it is correspondingly vulnerable to a large array of plant diseases and plant pests. Under these circumstances a greater responsibility and demand has been placed upon this department to carry out the required quarantine duties.

The following table shows the amount of quarantine work completed for this year:

State Interior Quarantine Inspections

	By Truck	By Mail	By Boat or Rail	Total
No. of shipments passed	855	2,107	85	3,047
No. of items passed	6,397,860	322,463	88,776	6,809,099
No. of shipments rejected	55	4	1	60
No. of items rejected	5,275	8	1	5,284

State Exterior Quarantine Inspections

	By Truck	By Mail	By Boat or Rail	Total
No. of shipments passed	376	3,764	205	4,345
No. of items passed	297,954	360,096	74,673	732,723
No. of shipments rejected	7	106	71	184
No. of items rejected	57,059	3,120	319	60,498

Quarantine Violations

State Quarantines	Number of Violations	Federal Quarantines	Number of Violations
Quarantine Proc. # 1	20	Federal Quar. # 3	6
Quarantine Proc. # 4	2	Federal Quar. #13	2
Quarantine Proc. # 6	1	Federal Quar. #28	1
Quarantine Proc. # 8	1	Federal Quar. #37	5
Quarantine Proc. # 9	12	Federal Quar. #48	1
Quarantine Proc. #10	8	Federal Quar. #56	4
Quarantine Proc. #11	1	Federal Quar. #58	1
Quarantine Proc. #12	3	Federal Quar. #60	1
Quarantine Proc. #13	2	B. A. I. Order #371	17
Quarantine Proc. #15	21		
Quarantine Proc. #16	4		
Quarantine Proc. #20	8		
Quarantine Proc. #21	1		
Agri. Code Sec. #114	2		
Agri. Code Sec. #115	76		
Agri. Code Sec. #124	60		
Agri. Code Sec. #125	7		
TOTAL	229	TOTAL	38

Ship Inspections

This year 111 ships were inspected, an increase of 76 percent over last year. An examination was made of each ship's cargo, food stores, baggage, officer's and crew's quarters, and garbage for injurious pests or quarantine law violations. Of the 111 ships checked, 43 were found having contraband material aboard. Most of these quarantined materials consisted of plant foods, plants, and foreign meats. The plant food, such as fruit and vegetables usually constituted part of the ship's stores, which were then sealed in lockers or refrigeration rooms while the ship was in port. Most of the cargoes quarantined consisted of equipment having dirt adhering to the sides. Each piece of equipment was thoroughly washed before being released. In addition, 17 ships which had foreign meat in storage lockers were sealed to prevent the possible introduction of the dreaded Hoof and Mouth Disease.

Certification

Another function of plant quarantine is that of certification as to pest conditions or pest treatments when such is officially required on out-going shipments. In addition to certification of shipments, shipping permits and certificates of inspection of nursery stock after thorough inspection were placed on interstate shipments.

The following certificates were issued and fees received:

Sanitary Inspection reports - - - - - - -	49
Potato Fumigation Certificates - - - - -	259
Oriental Fruit Moth Certificates - - - -	18
Fees Received - - - - - - - - - - - - - - -	$692.50

PLANT DISEASE AND INSECT SURVEY

The purpose of this program is to locate any new agricultural pests which may have been introduced into this county. In the event a potentially serious pest is found, appropriate eradication or control measures are immediately taken. To determine the extent of spread of these insects or plant diseases, survey work by trapping and visual inspection is carried out. The following is a summary of the most important pest surveys conducted by members of this department.

PLANT DISEASES

Grape Mosaic (Virus) The introduction of contaminated experimental nursery stock made necessary the inspection of properties where this rootstock had been planted. Three diseased vines found this year in two locations were destroyed by burning. Forty-six vines, the entire experimental block, were destroyed at one other property where a high percentage of infected vines were found.

Onion Yellow Dwarf (Virus) Spot surveys were conducted in all onion-growing sections of the county, disclosing no diseased plants. A mottling of the leaves characterizes this disease.

Peach Wart (Virus) This is the third year inspection has been made to determine the presence of this disease. A tree to tree inspection was made at pre-harvest time of all Candoka and Rio Oso Gem peach trees. No diseased trees were found this year.

Chestnut Blight Endothia parasitica This is the sixteenth year eradication work has been carried on since the discovery of this pest. This year three contaminated trees were found in two orchards and were destroyed by burning to prevent further spread.

Onion Smut Urocystis cepulae It was considered that the seriousness of this disease was not great enough to warrant legal measures during the past year in cases where onion smut was present.

Golden Nematode Heterodera rostochiensis
and
Potato Rot Nematode Ditylenchus destructor In cooperation with Federal and State Plant Pathologists a survey was conducted to determine the presence or absence of these pests. Examination was made of storage sheds and refuse from potato grading machines. Samples were taken and submitted for laboratory analysis. All results were negative.

Bulb Namatode Ditylenchus dipsaci During the course of pest control calls, two properties were found to be infested with this nematode. Onions planted on these two small areas were a complete loss. Spot surveys in other onion plantings failed to reveal further infestations.

Strawberry Spring Dwarf Nematode Aphelenchoides fragariae Only one property was found to be infested with this pest. A hold notice was placed on this property, under authority of Section 128 of the Agricultural Code, to prohibit movement of plants from this field.

Western X disease (Virus)
and
Yellow Curl of Peaches (unknown) A survey was made of one-half of all peach tree plantings in the county in cooperation with State Department of Agriculture. Several suspicious Western X diseased trees were found. These trees were marked and will be under observation. No Yellow Curl was found.

INSECT PESTS

Colorado Potato Beetle Leptinotarsa decemlineata Randomized checks were made throughout the count in both residential and large scale potato producing areas to determine whether or not this pest could be found. Negative results were obtained.

Crape Myrtle Aphid Myzocallis kahawaluokalani No new infestations of this insect were found. Inspections were made of numerous private plantings of Crape Myrtle throughout this county. This pest was introduced into another section of California from Hawaii, and since this popular shrub is relatively pest free, the extent of its spread was checked in cooperation with the State Department of Agriculture.

Hall Scale Nilotaspis halli No official survey was made for this pest during the year since surveys conducted during the two preceeding years failed to disclose the presence of the scale.

Japanese Beetle Popillia japonica As in the two previous years survey work was carried on between May 15 and October 1, for this insect. Twelve scouting traps were used at strategic points around Stockton Field airport, the U. S. Naval Annex, and at Lodi. No Japanese beetles were taken. Adults of the Desert June Beetle, honey bees and various other insects were collected.

Mexican Bean Beetle Epilachna varivestis Muls. Representative checks of bean plantings throughout the county were made to ascertain whether or not this serious pest of beans had been introduced from infested areas. No beetles or characteristic damage was discovered.

Naval Orangeworm Myelois venipars A county-wide survey was made in 1949, to determine the extent of spread of this pest in San Joaquin County. This insect was introduced into the southern part of California several years ago from Arizona, where it was found to be a scavanger on fallen citrus. Since its introduction into this state, it has caused considerable apprehension due to it's feeding in walnuts and almonds. This

pest was found to be present in the Tracy area at one residential property and three almond orchards. Due to the spread of this insect beyond natural boundaries, a quarantine regulation prohibiting the shipment of untreated nuts from infested areas was revoked in October, 1949. No appreciable spread of the Naval orangeworm has been observed for the 1950 season.

Oriental Fruit Fly Dacus dorsalis This is one of the most important survey programs that is being carried on by this department in cooperation with the State Department of Agriculture. Fifty glass traps were used during the 1950 season. Weekly collections of the contents were sent to Sacramento for determination. In addition to the survey program host plant materials were collected here and shipped to Hawaii for evaluating the stage at which the fly attacks.

Sweet Potato Weevil Cylas formicarius elegantulus During the past season no sweet potato weevils were found nor was damage to tubers characteristic of this insect noted in sweet potato fields or packing houses.

NURSERY INSPECTION

Inspections are made of all nurseries in San Joaquin County in order to ascertain that legal standards are being met regarding insects, plant diseases and noxious weeds. Since shipments are made to all parts of the county and to points outside of the county, the ideal place to destroy the plant pests is at the nurseries.

Nurseries (Ornamental) The inspection of nursery stock and premises in thirty-six nurseries was completed the latter part of the year and did not reveal the presence of any new pests. Pests found were controlled to meet the requirements outlined in regulations governing the issuance and use of inter-county nursery stock certificates under authority of Section 123.56 of the Agricultural Code of California. All pests found are of common occurrence throughout the state, with the exception of a soft scale, Asterolecanium arabidis, Holly scale Aspidiotus brittannicus, California red scale Aonidiella aurantii (Mask.) and yellow scale A. citrinia (Cosq.). As requested by the State Department of Agriculture, Nursery Service, these infested plants were destroyed by burning or fumigation in an approved fumigation chamber using Methyl bromide.

Nurseries (Trees) During the winter months when the planting of fruit and nut trees is in progress, extensive inspection work is necessary. The young trees are closely inspected for injurious plant pests such as oak root fungus, nematode, and crown gall. Under our county ordinance, the roots of fruit trees are examined for split roots, crooked roots, dead roots, and freezing damage. Any plants that do not come up to specification or are infested with pests are rejected. One large nursery that specialized in deciduous fruit and nut trees required the full-time services of an inspector for a period of three months.

Nurseries (Tomatoes) During the months of April, May and June extensive inspection work was conducted on all tomato beds in the county. This year it was necessary for this department to reject 2,284,640 nematode-infested plants to prevent spread to soil which is free of nematode. Once the nematode becomes established, it is impossible to rid the land of this highly undesirable pest. The number of plants rejected during the past year for nematode was substantially lower than the preceding year.

TOMATO INSPECTION FOR 1950
(County Tomato plants only)

Plants free from nematode - - - - -	18,450,000
Plants infested and rejected - - -	2,284,640
Total number plants inspected - - -	20,734,640

ORCHARD AND FIELD INSPECTION

Inspections are made of orchard and field crops for the purpose of determining the extent of damage by established insects and plant diseases. Pest control methods are noted as are materials in current use and the advantages which such materials may have over those formerly used. Infestations are inspected periodically to observe control and if control measures in use are not adequate, more stringent measures may be enacted, especially when there is immediate danger of the pest spreading to adjoining properties.

Periodic inspections of orchards and field crops are also necessary to guard against any new pest that may have been introduced into the county, and if present, immediate steps for the eradication or control may be undertaken. In order that such measures will meet the highest degree of success, field observations of current pest control operations must be observed. Records are kept on a monthly basis of the various pests causing damage.

Following is a brief summary of some of the important pests to crops found in this county.

INSECTS AND MITES ON FRUIT AND NUT CROPS

Codling Moth Carpocapsa pomonella Growers who followed the recognized spray program this year had excellent control of this major pest of walnuts. Where control measures were not used worm damage ran quite high.

Walnut Aphis Chromaphis juglandicola Population was normal. Many growers were compelled to dust to combat this insect. Nicotine sulphate added to the codling moth spray was of value in reducing aphid populations.

Two spotted Spider Mite Tetranychus bimaculatus Severe damage was caused to walnut and peach tree leaves causing them to dry up and fall in large numbers. The entire county was affected by this pest. This was considered one of the years of heaviest damage due to the two spotted mite.

San Jose Scale Aspidiotus perniciosus Was the same as the preceding year causing some injury to fruit trees, particularly cherries and peaches. Most growers are becoming aware of this scale insect and are holding it in check through the application of oil or lime sulfur sprays in the dormant season.

Peach Twig Borer Anarsia lineatella Although conditions were similar to those of previous years, infestations were lighter this year than last in most orchards.

Almond Mite Bryobia praetiosa Was present in many orchards; however, heavy damage did not materialize. Moderate losses occurred in non-irrigated orchards. These mites are developing into a major pest of almonds.

Grape Erinose Mite Eriophyes vitis Were numerous during the spring in many vineyards, but only in a few instances did damage result to buds and leaves from this mite.

Grape Bud Mite Eriophyes vitis A physiological strain of the above, was scattered throughout the main grape districts. Damage was very spotted. A few vineyards were observed to have suffered loss from this pest.

Grape Phylloxera Dactylosphaere vitifoliae As was the case in 1949, this insect continues to be a problem in many vineyards. Growers are becoming more conscious of this insect each year due to its devastating effect on grapevine roots. Several new infestations were discovered during the year.

Grape Leafhopper Erythroneura comes The number of broods was lighter this year. Many growers held damage to a minimum by using DDT in an early dusting program.

Pacific Mite Tetranychus pacificus Wine grape areas were hit late in the season this year causing severe leaf damage. There were some new materials used against this pest with promising results. Foliage damage by this pest was not severe until after grapes had reached maturity. Cherry trees were also heavily infested by this mite in many areas.

Beet Leafhopper Circulifer tenellus (Baker) In cooperation with the State Department of Agriculture during their emergency fall spray program, weekly records were made by our entomologist to assist in determining the correct time for making the spray application.

PLANT DISEASES OF FRUIT AND NUT CROPS

Brown Rot Sclerotinia fructicola & S. laxa Infestations of this fungus were light. The mild, dry weather which prevailed during the past season inhibited the development of this destructive disease.

Peach Blight Coryneum beijerinckii Light damage was experienced this year except in a few

apricot, peach, and almond orchards where no control measures were taken or where improper spray materials were applied.

Root Lesion Nematode Pratylenchus spp. Another common name for this is meadow nematode. Since the importance of this pest was recognized a few years ago, considerable work has been done to develop resistant root stock for English walnut trees. Growers, suspecting that their trees have a dying condition caused by root lesion nematode, have contacted this department to determine it's presence or absence. Observations are being made of the different locations where this pest is found.

Peach Leaf Curl Taphrina deformans Most varieties of peach trees showed a decreased amount of infection of this disease largely due to dry weather.

Crown Rot Phytophthora cactorum This fungus continues to be a problem in walnut orchards and individual trees in town. Most noticeable is the prevalence of this disease on trees located in poorly drained soil or where excessive surface moisture is maintained, as on and around lawns.

Oak-root Fungus Armillaria mellea A number of new infections were discovered through inspection of suspicious trees and grapevines and by specimens brought in by farmers for identification. Many growers have been duly alarmed by this destructive fungus and have taken strong measures to stop the spread of this serious disease.

Powdery Mildew Spaerotheca pannosa var. persicae This particular variety of powdery mildew which attacks peaches did a light amount of damage this year in some districts.

Powdery Mildew Uncinula necator On grapevines was not so prevalent as in some previous years. Four dustings this year held damage to a minimum.

Walnut Blight Phytomonas juglandis The most destructive disease of Payne variety walnuts was very light this year, due to weather conditions.

Cherry Diseases (virus) Numerous virus diseases have been seriously affecting cherry production in this and other cherry-producing counties. A program of selecting clean budwood has been inaugurated by the State Department of Agriculture as a long-range improvement program. This department assisted in field work in San Joaquin County.

INSECTS AND MITES OF VEGETABLE AND FIELD CROPS

Tomato Mite Phyllocoptes destructor This pest is sometimes referred to as the silver mite due to its characteristic damage to tomato foliage. Growers are well aware of this pest and applied sulfur as a precautionary measure with good results. Mites were observed in late July.

Corn Earworm Heliothis armigera No trouble of importance was experienced this year with this insect in tomato crops, for the timely application of the insecticide DDD (Dichloro-diphenl-dichloroethane) gave splendid results; however, sweet corn fields were hit as hard as ever where control was not practiced. DDD & DDT in combination gave good control of this insect.

Tomato Hornworm Protoparce quinquemaculata
and
Tobacco Hornworm P. sexta Were heavier this year. Those that did appear were effectively controlled with applications of DDD in commercial plantings.

Darkling Ground Beetle (various species) Were quickly controlled by DDT, DDD and poisoned bran. In some cases where large numbers of these beetles were found, control measures were undertaken before the planting of the crop.

Flea Beetles (various species) Had a general distribution. In a few cases control measures were necessary.

Grasshoppers (various species) Control measures were not necessary on a community basis this year as they were during last year. The extensive spray program of last year, cultural practice and weather were felt to be responsible for the reduction.

Wireworms (various species) Farmers in the county found it advisable to treat more land than in previous years for this pest. In most cases the soil fumigant D-D (Dichloropropene dichloropropane) was used; however, some farmers used EDB (Ethylene dibromide). Some new materials appear promising for the control of soil infesting insects.

Celery Leaftier Phylyctaenia rubigalis Damage to celery by this insect was negligible.

Celery Looper Autographa falcifera Infestations of this insect were light and practically no damage occurred in any of the celery fields.

Cutworms (various varities) These pests were prevalent in many localities this year. They caused light damage to plantings of tomatoes and other miscellaneous truck crops.

Western Yellow-striped Armyworm Prodenia praefica Grote Heavy infestations were present this year but not as heavy as last year. (Also see paragraph on the Beet Webworm).

Sunflower Moth Homoeosoma electellum This pest was found to be present in damaging numbers in sunflower plantings this year. Seeds in the perimeter of mature heads were attacked by the larvae of this insect. Control of this pest is difficult. Materials used were DDT and TEPP with some results.

VEGETABLE AND FIELD CROP DISEASES

Green Peach Aphid Myzus persicae A high percentage of direct seeded tomato fields were heavily infested with this aphid, in many cases nearly covering the lower side of plants. Beneficial insects aided in checking this pest but insecticides were of little value due to the constant influx from various plants bordering these fields.

Root Knot Nematode Heterodera marioni It would be difficult to place too much emphasis on the importance of preventing the spread of this pest to uninfested areas. Great care should be taken not to move in soil or plants from areas unless known to be free of nematode. Soil infested with nematode should not be planted with susceptible host plants unless one of the namatocides is first applied. The value of the crop must also be considered since such treatments only permit economic control.

Bacterial Canker Phytomonas michiganensis This bacterial organism was found infesting tomato plants in a few fields this year. Growers have been cautioned not to replant old tomato beds this coming year that have been contaminated by this destructive disease.

Western Yellow Blight (virus) This tomato disease, which is spread by the beet leafhopper Circulifer tenellus (Baker) caused heavy loss this year. However, it is fortunate that surrounding plants often filled in the area where plants had been killed by this disease and thus, yield was not too seriously affected. Extensive spraying is being done to reduce populations of this leafhopper in California.

Tomato Mosaic Disease (virus) The effects of this disease were evident in numerous fields in the county, but infected tomato plants outgrew its damage in most cases, causing very little damage. In general, tomato mosaic was lighter this year.

Spotted Wilt (virus) This disease was found spotted throughout tomato fields in the county. Several fields suffered some loss from this virus. Three fields in the northern part of this county were noted in particular. Control measures should be directed against the thrips that carry this virus to plants in the seed bed and field.

Fusarium Wilt&Verticillium Wilt These two fungus diseases were evident to a certain extent in some tomato fields with some damage occurring. Where tomatoes are grown on the same land several years in succession this disease increases in severity.

Western Celery Mosaic (virus) No serious losses were experienced from this disease this year. Infections were light throughout celery-growing areas of the county.

Aster Yellows (virus) This virus disease, carried by the six-spotted leafhopper, Macrosteles divisus, stunted a small percentage of celery grown. The Golden varieties of celery suffered greater losses than other varieties.

Potato Diseases (various) Since growers are now using certified seed potatoes, losses from the various diseases of potatoes are negligible.

PEST CONTROL OPERATORS

Farmers of San Joaquin County each year carry out extensive pest control work of plant diseases and insect pests to protect their crops. The gradual introduction of numerous plant diseases, insect pests, and noxious weeds now require energetic measures of suppression or eradication to keep these pests from interfering with profitable crop production. To facilitate these controls, farmers many times call upon commercial pest operators to make the application of the chemical used.

This year a number of changes were made in the Agricultural Code pertaining to and effecting the activities of commercial pest control operators. Operators were required to obtain their license from the state and register in the counties of intended operations. Furthermore, restrictions were placed upon the use of certain insecticides and herbicides. The restrictions upon some of the insecticides and herbicides were enacted to protect crops, livestock and persons in the vicinity of the application of poisonous materials.

Most notable among the new regulations for this year was the restriction on the use of 2-4-D and related compounds. In recent years it has been the contention of many growers with susceptible crops that more restrictions be placed upon this herbicide. Although very beneficial as a selective spray in killing weeds in some crops, it has caused damage to other crops either through drift or careless methods of application. Therefore, regulations adopted at the beginning of this year required both the farmer and commercial pest control operator to obtain a permit before using 2-4-D from this department and observe certain rules in the methods of application.

Between March 15 and October 1 the use of 2-4-D was prohibited in the so called hazardous area located in the Northern portion of San Joaquin County. In order to adequately enforce this law, an air patrol was inaugurated. This was particularly effective in observing the activities of aircraft operated by commercial pest control operators.

Prior to any 2-4-D treatment over one pound on property in the hazardous area or five pounds on property not in the hazardous area, a permit was obtained by the farmer from this office. Permits on 2-4-D were issued only after it was determined that such material could be applied without injury to crops other than the vegetation it is intended to destroy.

In the case of commercial aircraft operators who applied 2-4-D, an inspection of all equipment used in this county was made by this department. It was required of all operators that equipment by altered to minimize the dangers of drift or repair equipment wherever leakage was present

New regulations on the application of a number of insecticides have become law the latter part of this year. This law was designed to control the application of specified chemical material that could be injurious to persons, animals or crops other than to the pest or vegetation which it is intended to destroy. Since this law became effective late in the year after the spray programs for the use of these materials had been completed, commercial operators will not be effected by this law until this spring (1951).

Throughout the year, operators were required to send in monthly reports giving information of all work done. In the use of certain insecticides, a 48 hour notice was required to be filed with this office in advance of application. During the year 166 of these notices were filed with this department. In connection with the new regulations on 2-4-D, 183 permits were filed with this office. These permits were issued only after it was deemed that no crops or other domesticated plants were in the vicinity that were susceptable to the 2-4-D chemical or its derivatives.

This year 62 operators were registered for commercial pest control work in San Joaquin County. Of this number 28 were qualified in aircraft operations. The number of operators qualified in the fourteen basic catagories as set up by the state department of Agriculture varied; however, a predominance were found qualified in the spraying and dusting of orchards, vineyards, field crops and vegetables and in weed control.

Acres Treated in San Joaquin County by Commercial Operators:

Plant Diseases and Insect Pests		
Fruit Tree Crops	3,072	
Field Crops	17,403	
Vegetable Crops	47,288	
Vineyards	67,168	
Nut Tree Crops	5,119	
		140,050
Weed Control		
2-4-D	17,288	
Contact Material	5,096	
		22,384
Soil Fumigation		
D-D	383	
EDB	376	
BHC	236	
		995
Total Acres Treated		163,429

HOUSEHOLD AND GARDEN PESTS

Scarcely a day passes without this office receiving calls requesting information for the control of insect pests either inside their houses or in their gardens. Many times the identification of the insect is not known by the person calling or only a general description of the condition of the plant can be given by the person. Under these circumstances it is necessary to call on the party in question, and only after a positive identification can proper control measures be recommended. These calls are necessary not only to assist the party involved, but it is never known when a new pest to this county will be found that is of a serious nature to agricultural crops. By discovering such a pest before it has a chance to become established and spread to neighboring properties, methods of suppression or eradication may be effectively employed.

STANDARDIZATION

Fruit, Nut, Vegetable, Egg and Honey

This activity of Standardization work is authorized under Chapter 2, Division 5 of Agricultural Code. It has to do with the inspection of eggs, honey, walnuts, and thirty-two of the important fruits and vegetables, to see that they comply with the specific standards specified in the Code. It also includes all other fresh fruits and vegetables, as they are also regulated as to serious decay and insect damage, and all dried fruits regulated as to deception and mislabeling.

This year the enforcement of the Standardization Laws was carried out by all members of the department in addition to performing their other duties. During the shipping season, a number of crops demanded a large number of inspectors to be on the job. Since commodities were delivered throughout the day and into the late evening to re-distribution centers, where it is more practical to maintain inspections, many hours of overtime were necessary to properly inspect this produce to maintain higher standards of quality and pack, and further to protect the consumer from fraud, mislabeling, and deception of commodities. This procedure also assisted the truckers and shippers in getting their produce into the markets without unnecessary delay by further inspections at State operated highway inspection stations.

Stockton's Marketing Center Located in Stockton is a marketing center, the hub for the distribution of agricultural produce grown in San Joaquin County. Not only does this center provide an outlet for local commodities, but it also serves as a distribution center for fruits and vegetables that are shipped in from outside of San Joaquin County. As might be expected, here much of the standardization work for this department is carried out.

Operating the year around the morning wholesale market opens at 5:00 A.M. and farmers from all over the county bring in their produce to be sold to retailers. To maintain fruits and

vegetables of high quality, one inspector is assigned to the morning market to enforce standardization requirements. Maximum activity at the morning market is reached during the summer months at the height of the fresh fruit harvest.

The afternoon market starts operation at the beginning of the cherry season and continues on through the fruit producing months until fall. The bulk of these fruits and vegetables are transported to Los Angeles and San Francisco morning markets. An inspector is assigned to tour periodically all of the loading docks to see that fruit and vegetable standards are maintained. The majority of loads of produce are certified before leaving for their final destination.

Marketing Orders For the first time marketing orders on fresh peaches and plums were enacted this year. These marketing orders stipulating stricter regulations upon these two commodities increased the work load for standardization inspectors considerably. Since these marketing orders were new, many of the growers were not familiar with them. Consequently, it was necessary to reject a number of lots found in violation of the marketing order.

Wholesale Markets and Retail Stores It is our policy to make daily inspections at all wholesale establishments since a number of commodities are imported into the county from other parts of the state. Furthermore, in order to assure the consumer produce of the highest quality, fruit and vegetables are periodically inspected at retail stores.

Fruit, Nut and Vegetable Although there were a number of weather fluctuations during the year, crops maintained relatively high quality. The small amount of rots, mold and decay minimized the problems arising under the enforcement of the Standardization Law pertaining to these factors.

San Joaquin County with its diversified agriculture finds crops being harvested the year around; thus standardization problems with local crops confront this office throughout the year. However, certain crops demand greater attention from this office than others.

Outstanding is the 55,000 acres of asparagus spread throughout the Delta region. At harvest time this asparagus goes to approximately 150 packing sheds in this area with the bulk being trucked to one of our 19 centrally located shipping points. Here personnel of this department carry out inspections and whenever a situation demands special attention, inspectors are detailed to packing sheds to correct mal-practices. This year with the new size designations, violations of the asparagus standards were appreciably reduced for deceptive packs. Some lots were rejected due to excessive seeding and spreading.

Another prominent crop requiring a large number of our force to inspect properly is cherries. Daily inspections were made at seven loading docks for interstate and intrastate shipments. This year the cherry crop was a very good quality. However, there were quite a few violations on immaturity and improper row size.

The peach crop with its many varieties maturing at various times throughout the summer required constant attention. The bulk of the freestone peaches are packed and sent to the wholesale markets within the state. A number of other lots were rejected for deceptive pack, over-ripe and bruising.

At the beginning of the grape season a few rejections were made because of the maturity requirements. Then late in the season a number of lots held in storage were rejected because of mold and decay.

Infractions of the standardization law for other produce was less pronounced. There was a miscellaneous number of violations on markings, deceptive pack and defects in excess of tolerance; however, the bulk of the standardization work centered on the crops specified in the preceeding paragraphs.

Eggs During this year 145 premises were inspected which included grocery stores, egg markets and any other place where eggs were offered for sale. A representative sample of 284 lots representing 30,159 dozen eggs were candled for grade, checked for size, or other defects. Of the eggs inspected 1,221 dozen were found in violation of the Standardization Egg Law.

Honey Throughout the year, a number of calls have been received by this office for general information concerning honey grades and marking requirements. There have been several rejection notices given this year on containers of honey not being properly marked as to grade.

Grapes for By-Products The Agricultural Code under section 771 provides that wineries purchasing grapes on the sugar content shall have an official test made on each load delivered. This year eight wineries required the services of 12 authorized inspectors from this department. There were 37,330 soluble solids tests made and 18,636 certificates of inspection issued at these wineries. The total cost of this type of work was $6,186.14 which was paid by the different wineries requiring this service.

Certification The certification of agricultural produce represents one of the major activities of this department in standardization work. This is exemplified by the fact that 3,716 certificates were issued during the year. The certificate is of considerable importance not only to facilitate movement of produce past inspection stations, but it insures the recipient at destination produce that meets minimum standards of the California Standardization Law. This service is of special importance in this county since there is a heavy export of fruits and vegetables grown in San Joaquin County.

Standardization Statistics

Number of Containers Inspected - - -	7,034,462
Certificates Issued - - - - - - - -	3,716
Fees Received - - - - - - - - - - -	$2,193.70
Violation Notices Issued - - - - - -	411
Number of Containers Rejected - - -	24,760
Court Cases - - - - - - - - - - - -	1
Amount of Fines - - - - - - - - - -	$25.00

RODENT AND BIRD CONTROL

Ground Squirrels This year through the coordinated efforts of farmers, irrigation districts, reclamation districts and railroad companies, excellent results have been obtained in controlling ground squirrels. There has been a greater understanding among these groups on the principles underlying a successful program. Realization that the best control possible could be accomplished by working together, more organized groups than ever before worked for mutual interests and dealt a devastating blow to the squirrel population in a large portion of the county. Although the initial cost for some groups was somewhat higher than usual, the success of the program this year is expected to substantially reduce the expense of next year's program. Ground squirrel work constitutes one of the important activities of this department.

During the year, 3,207 calls were made on squirrel control work by members of this department. In many cases not only were properties inspected and information given on the control of squirrels, but inspectors demonstrated the use of equipment and precautions warranted in the handling of poisonous or inflammable rodenticides. The campaign against the ground squirrel is continuous throughout the year. Inclement weather is the only factor in any suspension of field work. During the months of March, April, and May the most effective period for ground squirrel control in this area, operations reach their peak. On large projects the Sheriff's Department supplies county prisoners as low-cost laborers who work under our supervision.

Rats Rural areas in San Joaquin County have not been troubled to any great extent by rats. However, a few farmers have called upon this department to help rid their property of this pest. Most of their trouble has occurred where exposed food stuff was present and rats were causing damage. Zinc phosphide and "1080" were the principle baits used under the supervision of this department. Since most red squill available lately has proven unreliable due to loss of strength, the use of this material as a poison bait was discontinued.

Mice No serious outbreaks of mice occurred in the county this year. Apparently poisoning and sanitation practices in areas previously infested with mice has virtually eliminated this rodent as a factor in damaging agricultural crops.

Bird Control A number of complaints have been received by this department concerning damage to crops by birds. Trouble with the hornlark was rather extensive in southwestern portions of the county. Young pinto bean plants, tomato plants, and onion seedlings were attacked by these migrating birds. Bird poison used was not successful; thus farmers kept them out by shooting with various degrees of success. A number of complaints were filed against the wary English sparrow as a general nuisance around barns, garages, and in gardens. Blackbirds were reported in some fields and almond orchards. In the Delta area, geese caused considerable damage to 80 acres of newly sprouted barley. In some cases control measures with poisoned baits were used for hornlarks, sparrows and blackbirds. Results varied and in many cases methods to scare the offending birds were employed.

WEED CONTROL

The control of weeds injurious to the welfare of agriculture in San Joaquin County has developed into unpresented proportions. The realization that successful farming may depend in a large measure upon an effective control of these weeds has stimulated a wider interest among residents of this county than ever before. This weed conscious public has apparently developed over the past few years as a result of a special Weed Control Program inaugurated by this county.

Special Weed Control Program Although emphasis on the control of noxious weeds has been a policy of this department for many years, a special program of greater proportions has been in effect since 1947. With farmers taking a greater interest in the control of noxious weeds infesting their property, the suppression and eradication work for this year has culminated in an all time high.

Through this program, county spray rigs have been made available to farmers who do not have their own equipment free of charge. County spray rigs have patrolled county and state roads throughout the growing season for weed pests. To supplement this special weed control program, farmers in a number of cases are able to secure partial financial help through the Production Marketing Administration on cost of material and labor.

Education Work The first step to develop this interest in the weed control program by farmers has been a continuous educational program. By preparing articles on the subject and disseminating this information through the radio, newspapers, and local journals a county weed program was publicized. Lectures at farm meets were given by members of our department and farmers were

contacted in the field. Through these channels the county's program on the control of noxious weeds existing in this county was well advertised.

County Equipment The recognition of the fact that many farmers do not have the necessary equipment to treat infestations of noxious weeds on their property, the county through this department has made available powered spray rigs to apply the herbicidal materials.

The spray rigs mounted on four wheel power trucks are able to move over adverse terrain with a minimum of difficulty. These spray rigs have been constructed and maintained by this department's shop.

Annual Weeds

Puncture Vine Tribulus terrestris Is without a doubt the most offending of annual noxious weeds within the San Joaquin County. This pest has infested a large part of the southern portion of this county. In contrast the northern portion of the county is relatively free of this pest. Unfortunately, this weed has obtained a toe-hold on some of the roadsides and on some private property in this area. Special effort has been expended to control the Puncture Vine and prevent further spread in areas of relative light infestations.

Yellow Star Thistle Centaurea solstitialis On the converse side is more prevalent in the north and less evident in the southern portion of the county. This weed has proven to be of special nuisance in pasture lands. Farmers have also found it to have the provoking habit of establishing itself in difficult to get at locations such as fence lines and ditch banks. Fortunately, control of this weed is much easier as compared with Puncture Vine since it does not produce viable seed in such a short time and its presence is more evident by its tall growth.

Milk Thistle Silybum marianum Has proven to be disagreeable in some localities within the county especially when it acquires its mature growth. A number of farmers have requested that this weed be controlled on roadside infestations.

These annual weeds are controlled effectively with contact sprays. Control work starts in the early spring for Milk Thistle and Yellow Star Thistle. As the season advances to early summer, Puncture Vine makes its appearance. In each case, control work is started as soon as it is possible to detect their presence. At this point maximum kill is obtained with minimum cost.

Perennial Weeds

Johnson Grass Sorghum halepense Has proven to be the most widespread and most troublesome to farmers. Throughout the year, 1098 infestations were treated with borax-chlorate spray material. Of this number, 347 infestations were eradicated. Follow-up work is continuing on remaining infestations. Almost with-

out exceptions, more than one treatment was required to obtain the desired results.

Russian Knapweed Centaurea repens Infestations number 49. Of this number, 9 were eliminated, with work continuing on the rest.

Canada Thistle Cirsium arvense Is found in only three infestations. By the use of 2,4-D and soil sterilants, one infestation was eliminated. Fortunately these plants do not form viable seed, thus spread depends upon natural root expansion or by cultivation.

Horsenettle Solanum species Is not prevalent in this county. Of the 9 infestations treated, 5 were eradicated. 2,4-D gives good results; however, several applications were sometimes needed.

Hoary Cress Cardaria species Has proven to be one of the most difficult of the perennials to control. With persistant effort, 10 infestations out of an original 38 were eliminated.

Pepper Cress Perennial Lepidium latifolium Is not widely spread in this county. During the year, 6 infestations were treated. One was eradicated with soil sterilants, several large infestations show good results with 2,4-D.

Klamath Weed Hypericum perforatum Was found in 14 small infestations in the county. Of this number, 12 have been eliminated and further observance will be necessary to determine the results on the other two infestations.

Wild Heliotrope Heliotropium curassauicum Has been found to be a nuisance, especially in vineyards. Carbon bisulphide has been used on 5 small infestations in vineyards without regards to the vines. Results have been very good.

Bermuda Grass Cynodon dactyton Infestations, found in locations that would be adverse to agricultural interest, have been treated. Of the 29 infestations treated with Borax-Chlorate sprays, 7 have been eliminated.

County Roads It is an established fact that roadways are notorious for spreading weeds onto adjoining property. To suppress such infestations before they have the opportunity to spread, it has been the duty of this department to patrol all county roads at intervals with power spray rigs and treat these infestations.

To prevent such weeds as Yellow Star Thistle and especially Puncture Vine from going to seed, spray rigs patrolled each road at 2 to 3 week intervals. In order to cover the 168¼ miles of roadside, two 8 hour shifts were maintained during the summer months.

This enabled the spray rigs to operate on a sixteen hour per day basis. The first shift started at day-break and continued

until noon. The second shift operated until dark. This system was necessary to patrol all county roads at the desired interval of 2 to 3 weeks to prevent especially the Puncture Vine from going to seed.

During the winter months perennial noxious weeds were treated with soil sterilants. Result from this work has been very encouraging. A number of infestations have been eradicated.

State Highways In order that all roadsides may be included in the county weed program, an agreement has been made between the State Highway Department and this Department that this Department patrol the 207 miles of state highways in San Joaquin County for noxious weeds. The program on State highways has been carried out in the same manner as for county roads.

Railroads Five of the six railroads within San Joaquin County have agreed to control noxious weeds on railroad right of ways. This control work will be carried out with our equipment and our crews. The costs of the material and the labor will be paid to the County Department by the railroad. However, negotiations are still pending with the one railroad. It is possible that they, also, will request us to do the work on their right of ways. In the past, railroads have been chiefly interested only in vegetation growing between the tracks and a narrow strip on each side, but very little work has been done on noxious weeds found growing between the railroad track area and their right of way fence line. The work that will be done by our equipment will be on the entire railroad right of way and will include such weeds as Johnson Grass, Russian Knapweed, Hoary Cress, Perennial Pepper Cress, White Horsenettle and any other weed of a serious nature.

Materials Used in Weed Control Program The treatment of the annuals, Puncture Vine and Yellow Star Thistle were sprayed with oil emulsion composed of 10-30 gallons of oil, one quart of dinitro general, detergent and water to make a 100 gallon mix. Larger proportions of oil were used during the cooler weather conditions and was decreased to a minimum during the warm summer days.

Since the mixture described destroys only as it contacts the plant when sprayed, regrowth may take place or new plants appear. This year experimental work was conducted using material normally considered as soil sterilants as contact sprays. Such materials would tend to retard future annual weed growth within the treated area.

The treatment of perennial noxious weeds was with sodium-chlorate and borax-chlorate combinations. These have proven to be the most effective in eradicating deep rooted perennials. To avoid the fire hazard of sodium-chlorate, the borax-chlorate was used exclusively by our spray crews. Most of this work was carried out during the fall and winter months. Satisfactory results are obtained by applying this material at 10 pounds per square rod.

Selective and General Weed Spraying Selective weed spraying steadily is gaining popularity in eliminating weeds from such crops as grain, rice, celery, carrots, and alfalfa. Commercial pest control operators and individual farmers owning their own spray equipment have sprayed thousands of acres of crop land in this county this year. Many of these selective weed spraying practices have eliminated cultivation for weed growth entirely. General weed spraying has been steadily increasing in popularity because weeds growing in areas where cultivation was difficult or impossible could be eliminated through chemical treatment. Weeds growing along fence lines, ditch banks and on cultivated areas were found to harbor insects as well as a means to dissiminate weed seeds into crop lands. Controlling weeds of this nature has proven to be profitable to the farmer. In a number of cases, unsightly weeds growing in yards around packing sheds and other buildings in farming districts have been treated with soil sterilants, reducing fire hazards and the cost of hoeing. The economy of properly controlling weeds whether they be of noxious nature or just general vegetation, has been proven time and again and the farmers, land owners and other agencies are becoming more interested in this type of work.

Weed Program Summary It is evident, by the success of this year's special weed control program for San Joaquin County, that greater cooperation has been obtained from all private and public groups. Greater numbers of farmers than ever before have carried on control measures on noxious weeds infesting their property. This is especially true in regard to work on deep-rooted perennials.

To further the program, Reclamation Districts and Irrigation Districts have entered the program in a very cooperative manner. Also, most of the Railroad Companies have promised a program of full cooperation.

The financial help offered to farmers for noxious weed control by the Production Marketing Administration, being greater than ever before, has created greater interest among farmers in taking care of their infestations.

Through all of these factors there is the expectation of this Department that even greater strides will be forthcoming for the succeeding year.

SEED INSPECTION

One of the important duties of this office is to prevent the introduction of noxious weed seeds into this county. This is accomplished by inspection of all seed brought into this county for planting purposes or for any other purpose which may disseminate weed seeds. Shortly after notification by common carriers of the arrival of seed lots into the county, inspection is conducted for the presence of noxious weed seed or insect pests.

Grain Inspection During the year, numerous shipments of grain, both bulk and sacked, is brought into the county for stock feeding or seeding purposes. Quarantine samples are drawn for noxious weed seed content, and the general condition of the lot is inspected for foreign material such as cotton, corn cobs, or any other debris that may be capable of harboring insect pests. Grain lots found infested with pests are disposed of by appropriate methods of cleaning, grinding, burning, or fumigating.

	Lots Passed	Lots Rejected	Total Lots Inspected
Interstate Lots Inspected	569	307	876
Intrastate Lots Inspected	20	2	22

Lots Rejected in Tonnage:

Tonnage	Reason for Rejection	Disposition
60 tons	Quackgrass	Recleaned
120 tons	Canada Thistle	Recleaned
120 tons	Yellow Star Thistle	Cleaned and Ground
6,660 tons	European Corn Borer	Fumigated, diverted, shipped out of state, cleaned and ground and debris burned.
11,580 tons	Johnson Grass and White Horse Nettle	Cleaned and ground or burned.

Agricultural and Vegetable Seed Inspection Under Chapter 5, Section 125 of the State Agricultural Law and under the California Seed Law, lots of agricultural and vegetable seed are inspected to see that they meet the provisions of these laws. Quarantine samples are drawn and inspected for noxious weed seed. Labels are scrutinized for correct information. Periodic inspection of seed houses is maintained throughout the year, especially to check the germination date since it is effective only for a given length of time. This year, 323 lots of agricultural and vegetable seed were inspected in this county. Of this number, only four lots were rejected due to the presence of noxious weed seed.

Screenings Throughout the year, screenings at the 4 warehouses were inspected for noxious weed seeds. Those lots found infested were rejected and the required sixty days was given to the owner to dispose of the lot by recleaning, grinding, or burning. Out of the 14,493 sacks of screenings inspected, 8,615 sacks were rejected for noxious weed seeds. These rejected sacks of screenings were disposed of by recleaning and grinding or dehydration.

The following weed seeds were present in lots rejected:

Number of Lots	Number of Sacks	Kind of Seed	Disposition
2	2,200	Yellow Star Johnson Grass	Ground
1	415	Morning Glory	Ground
Mixed	6,000	Morning Glory Yellow Star Johnson Grass Bermuda Grass Russian Knapweed	Dehydrated and Ground

Seed Certification The purpose of seed certification is to maintain and make available to the public, high quality seed and propagate materials of superior crop plant varieties so grown and distributed as to insure genetic identity and purity. Only those varieties that contain superior germ plasm are eligible for certification.

This office has complete authority to safeguard by suitable measures, the identity of seed intended for certification.

To insure proper identity, this office inspected harvesters wherever necessary for the presence of any foreign seed; also all processing equipment must be cleaned thoroughly, to avoid contamination of the certified seed, and approved by this office before cleaning operations on certified seed starts.

Wherever a request is made to move seed, subject to certification prior to final tagging, this office issues an intercounty permit with the necessary information to the commissioner at destination. This county also requires a permit whenever seed, subject to certification, arrives into this county.

After a lot has met all preliminary requirements, a sample is drawn in the same manner as an official sample is drawn, with one sealed portion going to the California Crop Improvement Association and one sample is retained by this office. Upon notification from the California Crop Improvement Association that the lot has met the requirements of certified seed, the lot is tagged and sealed under the supervision of this office.

These tags and seals are furnished by the Crop Improvement Association.

Many lots of certified seed grown last summer have not been processed, therefore, the 152 samples drawn during the season are less than the previous year. However, the 124,261 sacks of clover, sedan grass, barley and wheat represent the largest turnover this county has recorded.

APIARY INSPECTION

The purpose of bee inspection is to prevent the introduction and spread, within the county, of diseases injurious to bees, maintain a registration list of apiaries, issue certificates of inspection, and properly dispose of all American Foulbrood colonies. This year, through the cooperation of the State Department of Agriculture, a Deputy State Bee Inspector was assigned to this area for two months. This Deputy worked with all District Inspectors checking colonies in the various districts. Below shows a report disclosing the amount of work done in this field:

Type of Work	Number of Apiaries	Number of Colonies
Registered	16	695
Entering California	2	340
Leaving California	1	210
Entering County	29	2,046
Leaving County	17	709
Moving within County	22	1,537
Inspected	92	2,542
Infected with American Foulbrood	4	12
Infected with European Foulbrood	9	59
Burned for American Foulbrood	4	12

FAIRS AND EXHIBITS

One of the most agreeable and pleasant duties of this department is connected with the preparation of fairs and exhibits. There, the agricultural diversification of San Joaquin County is readily exemplified with many types and varities of crops entered for display. Through the 100 golden years of Statehood, San Joaquin County has indeed become the bread basket of California.

At the California State Fair The theme of the State's admission to the Union was portrayed by Uncle Sam congratulating the California Bear sewing the 31st star on the Flag of the Union. As a background to the display of rich, bountiful agricultural products, stood a large open book of California history. The high standards of quality were reflected by the numerous ribbons, trophies and sweepstakes won. San Joaquin County was awarded first prize for the best and most complete exhibit of agricultural and horticultural products of any one county artistically arranged. Other awards to San Joaquin County for products shown were as follows: 104 first prize ribbons, 82 second prize ribbons and 46 third prize ribbons. San Joaquin County wines were awarded the following prizes: 3 first awards, 6 second awards, 2 third awards and 2 gold medals, and 6 silver medals and 5 bronze medals as well as 8 honorable mentions. This gave a grand total of 229 ribbons, 12 first sweepstakes, 3 second sweepstake ribbons and 1 third sweepstake ribbon. This is a record for winnings not equalled by any other county at the State Fair.

At the San Joaquin County Fair Competition at the County Fair between twelve district entries was greater than ever. Each displayed a theme based upon California's admission to the Union or honoring the 100 years of statehood. Competition was particularly keen between districts on their entries of crop produce. Awards at the County Fair were as follows: In the Community Display, Section I, the Linden exhibit was awarded first prize. Escalon followed in second place; Tracy, in third place; Thornton, fourth place, and Lodi, fifth. In the Community Display, Section II, Farmington was awarded first prize, followed by Stockton in second place and Lockeford in third place. In the Feature Display, French Camp took first prize; Ripon, second; Delta, third; and Manteca, fourth.

COOPERATION WITH BUREAU OF MARKET ENFORCEMENT AND BUREAU OF MILK CONTROL

Unveiling the statistics on money recoveries and money adjustments shows that many farmers in this county took advantage of the services extended by these State Bureaus. Through investigations, hearings, and procedures set forth under the Produce Dealers Act, the Processor's Law and Milk Control Laws resulted in a net remittance of $182,385.16 to growers of this county.

Whenever controversies arise between growers and dealers or processors, the County Agricultural Commissioner's Office extends every possible effort to aid the Bureau of Market Enforcement by collecting necessary evidence concerning these cases. With this evidence it is possible to offer a thorough presentation of facts on both sides, which will result in a fair readjustment to all concerned. Many of these complaints are first received at this office and then all details concerning the complaint are transmitted to the Bureau.

All buyers of farm commodities must be licensed by the Bureau of Market Enforcement. This applies to cash buyers as well as others. The County Department assists the Bureau in seeing that all these buyers are properly licensed, and also maintains a special office in the Agricultural Building for State Officials for the purpose of holding hearings or any other activity which requires office space.

The following amounts were recovered:

	Number of Participants	Amount Received
Produce Dealers	93	$ 21,067.60
Processors	116	137,474.89
Milk Recoveries	19	23,842.67
Total	228	$182,385.16

MISCELLANEOUS DEPARTMENTAL DUTIES

There are a number of activities carried out by members of this Department as supplemental to our regular duties. These activities are designed to facilitate the operations of this department and extend to the farmer a more complete service.

Identification of Insects, Diseases, and Plants The proper identification of insects, plant diseases or plants is often vital in the performance of many duties. Quarantine and Nursery Inspection, Field and Orchard Inspection, Plant Pest Control, and Weed Control are all directly concerned. In case positive identification cannot be made, or it is desirable to obtain verification, then specimens are submitted to either State Department of Agriculture Insect Taxonomists, Plant Pathologists or Plant Taxonomists respectively.

Farm Meetings A closer observance of farmers' needs has been carried out in the various districts in the County by personnel of this Department who attend farm meetings. In this manner, any matters pertaining to this Department may be discussed on the spot by a representative of this Department. This also gives our Department an opportunity to carry out an educational program in any pest control work sponsered by this office.

Photographic Work A convenient method of recording agricultural information concerning this county has been through the use of photographs. These pictures are taken by members of this Department and developed in our own dark room, which has proven to keep costs to a minimum. This year, 576 black and white and 480 color slides were produced by this Department. One of the most important values of these pictures is in their use for visual education at farm group meetings.

Salinity Test In many places in the Delta area, the salinity of water tends to become concentrated. Since this area relies on this water for irrigation of crops, it is of vital importance that farmers keep a close tab upon the salinity of the water. Consequently, a number of farmers brought in samples of water to have it tested for salt concentration. Whenever samples were submitted for examination, tests were run in our laboratory.

Soil Tests The causation of subnormal plant growth or the death of a plant is not always apparent. When insect or plant diseases are not evident, the trouble may be found in the soil. Inspectors, confronted with such problems, often resort to a laboratory analysis of the soil, performed at this office, for a satisfactory answer. Many time alkali soil has been found responsible for the adverse plant growing conditions, or a surplus salt concentration is the offending material. At other times, a deficiency in a vital food material is responsible. This information is of vital help to inspectors in making recommendations for correcting the trouble.

Special Agricultural Reports Throughout the year, numerous requests are received by this Department for statistical information on various crops grown in this County. These requests may include one crop or a number of different crops. This, in turn, may be for only a given section of the County. Since farmers and a host of agencies connected with the handling and processing of farm commodities are vitally interested in the production fluctuations of various crops, statistical information is of prime importance in planning for the future.

Spraying of County Shade Trees This year a number of county sycamore trees were sprayed by this department for sycamore scale. A total of 124 sycamore trees were treated, using 800 gallons of spray mix.

Shop Work Throughout the year there has been continuous activity in the department's shop. Here the repair and maintenance of spray rigs used in connection with the county's special weed control program is carried out. Also new equipment is assembled for this specialized type of work in the shop. Also in the shop, fair exhibits are designed and constructed. All of the mechanical and electrical devices required in running the moving objects are assembled in the shop. Since most of the parts that make up the construction of many of the exhibits are not available through commercial channels, it becomes the responsibility of the shop personnel to plan and build the necessary parts.

Staff Meetings Periodically throughout the year, meetings are held by members of the department. These meetings are convened to discuss problems of the department with reference to standardized methods of inspection and changes in the laws. Also, reports are given by inspectors of activities in their respective districts. These meetings have been of vital importance in dissemination of information of departmental policies and county activities.

Weather Reports During the year, weather reports on crop growing conditions in the county are filed with the United States Weather Bureau. These reports are submitted each week in the summer and once each month during the winter.

FINANCIAL REPORT SUMMARY
FOR FISCAL YEAR ENDING JUNE 30, 1950
AGRICULTURAL DEPARTMENT & SPECIAL WEED CONTROL

CLASSIFICATION		
Administrative	$ 16,897.90	
Plant Quarantine, Seed and Nursery Inspection	13,602.61	
Fruit, Nut, Vegetable, Honey, and Egg Standardization	14,730.38	
Field and Orchard Inspection	14,997.52	
Apiary Inspection	656.03	
Rodent Control	11,401.84	
Weed Control	12,783.19	
Crop Statistics	9,167.66	
Office Personnel	5,364.41	
Fairs and Exhibits	5,833.70	
Maintenance and Operation	5,920.64	
General	3,447.00	
		$ 114,802.88
SPECIAL WEED CONTROL		
Salaries and Wages	$ 31,105.04	
Maintenance and Operation	17,213.88	
Capital Outlay	647.85	
		$ 48,966.77
GRAND TOTAL EXPENSES		$ 163,769.65
COLLECTIONS REMITTED TO COUNTY TREASURER		$ 13,365.91

CROP SUMMARY
SAN JOAQUIN COUNTY
YEAR - 1950

Since climatic conditions are one of the all important factors in the growth progress of agricultural crops, a more comprehensive understanding of crop developments may be obtained by a review of the weather conditions of the year. As there are decided fluctuations in temperature, humidity and rain fall in various sections of the state at a given time, the same is true within the bounderies of San Joaquin County. Thus, only general trends in the growth progress of any given crop may be stated within the scope of this report.

Reviewing briefly the year's weather fluctuations and results on crops in a chronological order, the first month of 1950 represented a month of numerous showers, which tended to stimulate the growth of winter grains, vegetables and grasses. However, the continuous low temperature did not permit these crops to develop at a normal rate. Although cold weather predominated throughout the winter and spring, there were intermittent warm periods that extensively aided in a close to normal development of all crops.

An interesting phenomenon occurred in February with prolonged warm weather the latter half of the month. The unusually high temperatures not only stimulated the growth of grains and range grasses, but caused early varieties of almonds and apricots to come into full bloom.

During the first half of March, the mercury dropped, which resulted in spotted frost damage, particularly to cherries, peaches, plums, almonds, and apricots. Some tomatoes in hot beds were lost and had to be replanted. There was some damage to young grain, sugar beets and asparagus.

The month of April represented a month of favorable growing conditions for crops in general.

The first week of May, a reversal in weather conditions occurred with low temperatures climaxed by a light frost, located for the most part in the Delta area. In addition, strong winds prevailed this first week. During this period asparagus production was curtailed extensively.

Cool weather again prevailed the first two weeks of June. The last two weeks were favorable for the development of most crops except on the last three days on which abnormally high temperatures of 100° to 109° occurred; however, a complete survey of the county's crops showed very little loss.

The exceptionally warm weather extended through the first week of July, resulting in some sunburn in tomatoes, walnuts and grapes.

August weather was cool the first week and retarded plant growth. However, the weather turned very warm the last two weeks and extended into September. Strong winds on August 4th caused dropping of some peaches and scarring of other fruit. Sunburn was showing more on grapes, walnuts and tomatoes resulting from the exceptionally high temperature.

On September 11th and 12th the first fall rains occurred with some damage to crops. Mold appeared in tomatoes and the quality of alfalfa lowered. However, weather improved for the remainder of the month and the majority of the tomato growers were able to harvest their crop. The rains near the end of October concluded the harvest season. Some farm land suffered from floods at this time.

The continuation of heavy rains the first part of December resulted in serious flood damage. The area covered by the floods was 67 square miles. At this time, it was physically impossible to make a correct estimate of the amount of damage to agriculture caused by the flood; however, preliminary survey on December 31, 1950 disclosed approximately a $2,000,000.00 loss. By the end of the year, those crops that were not completely harvested were sugar beets, rice, potatoes and corn.

The following is a report covering a general summary of the important crops in San Joaquin County:

Fruit and Nut Crops

Almonds The size and quality of the almond crop was good this year. The color of meats and shells was also good with the exceptions of those that were not harvested when it rained in September. The crop was very spotted where no frost control was used. Production dropped 50% in some areas; however, the total production dropped was 926 tons, or approximately 20% overall production decrease.

Apricots Although the size of fruit was normal, the quality was slightly lower than last year. Pit burn resulted from the heat spell early in the year, causing some decrease in quality. Shot hole fungus and brown rot was at a minimum.

Cherries Most notable on the cherry crop was the sharp drop in production of 50% as compared with the previous years. However, size and quality of fruit was good. Growers also enjoyed better prices this year. The shipping season started on April 25th and ended June 16th. During this time, 466 cars were shipped to eastern markets.

Chestnuts The yield for chestnuts was about average, or the same as last year. However, mostly due to the importation of foreign chestnuts to eastern markets, local growers experienced a decided drop of $50.00 per ton under the previous season.

Figs This year there was a smaller tonnage harvested. This reduction in tonnage was due to unduly warm weather during the growing season.

Grapes (Table) The quality of table grapes was fair this season. Due to rain, there was an increase of approximately 37,000 tons to the wineries, with a corresponding drop in shipping grapes. Upon the completion of a new survey by vine to vine count of permanent county crops, tokay grapes showed an acreage increase of 2,500.

Grapes (Juice) This year, due to rains, the quality of juice grapes declined from the previous year, and sugar content was only fair. Rains came before growers had the opportunity to complete their harvest; consequently, undesirable qualities developed in market grapes. Growers, as a whole, experienced a good year.

Olives The yield was double over the previous year. About 80% of the crop went to canneries and the other 20% was used for oil.

Peaches (Freestone) Growers enjoyed good quality and higher prices over the previous year. A larger tonnage went to processors and less went as fresh shipments.

Peaches (Cling) Cling peaches, in a like manner, were of good quality and brown rot and mildew were at a minimum. This year 15% of the green fruit was dropped, as required under the Tree Fruit Agreement. Growers enjoyed higher prices this year; however, the tonnage to processors was lower.

Pears Most of the pear crop went to canners this year. The price was somewhat better than the previous year.

Plums Growers of this crop had a good year both in yield and price. The price was more than double over the year before.

Walnuts Quality and size as a whole were good. Virtually no blight appeared and worm damage was at a minimum. Early varieties were better in quality than late varieties. Tonnage was down slightly under the previous year, but the price was up slightly. Through the completion of a new survey of permanent crops by tree to tree count, walnut acreage increased by 2,000 acres.

Field Crops

Alfalfa The yield was good this year with an average of five cuttings for the season. The quality of the 3rd cutting was below par and the last cutting suffered some from rain. Worm damage was spotted. The acreage for the county increased by 6,730 acres; however, prices lowered to $18.00 per ton.

Beans The acreage allotment program was the main factor in reducing the bean crop in 1950, accounting for reduced plantings in all varieties except blackeyes and seed beans which were not under acreage allotments. This year, yields were slightly lower. Heavy rains and continued wet weather in November reduced the quality of late thrashed beans. Some acreage was lost entirely.

Field Corn The yield per acre decreased and the quality lowered due to fall rains. Growers experienced some difficulties in harvesting. At the end of the season, the price was on the upward trend. The acreage decreased 689 acres under the previous year.

Grain Growers had a good season in all respects. The ideal weather for grain helped to produce a splendid crop. Barley acreage increased by 6,416 acres. In wheat, there was a slight increase in acreage and yield.

Hay This crop continues to drop in acreage. Prices also were lower this year. The yield was better than the year before.

Ladino Pasture The rapid development and interest in ladino pasture has been exptraordinary in this county. This year alone, there was an increase of 10,727 acres, which boosted the county's total acreage up to 67,831 acres.

Potatoes The harvested acreage of market potatoes is 4,465 acres or 820 acres under last year; however, 592 acres are still to be harvested. There is also about 100 acres of seed potatoes in the ground. The average was up 16 sacks over the 300 average of last year. Prices were down and the market weak for the season.

Sugar Beets Most notable for this crop were the difficulties experienced by growers in harvesting. The abundant rainfall of November and December, in a number of cases, stopped the harvest completely. Up to January 1, 1951 there were still 4,000 acres not harvested. This acreage will be accredited to the 1951 season. The harvested acreage is 13,128 acres. This gives a 1950 acreage grown in the county of 17,128 acres or 6,473 acres over 1949.

Sugar beet leafhoppers were more numerous than usual; thus, the virus disease curley top was more prevalent. The sugar content is about the same to slightly lower this season.

Sunflowers There was an increase of 200 acres in the county; however, the yield per acre was lower. Rains and worm damage were factors in lower yields. The recleaning was more difficult, due to the worm damage.

Sweet Potatoes The quality was fair this year; however, it was not as good as the previous year. Yields varied from place to place. The average yield was better than the year before. Market conditions, weak to poor, except near the end of harvest season.

Vegetable Crops

Asparagus Once again growers experienced a very good season. Production was up, with a very strong demand for fresh "Grass". The price was greater than last year. Quality for the season was good; however, intermediate cold periods did slow up production at times. Asparagus acreage increased by 3,186 acres over the 51,836 of last year.

Carrots The acreage stayed the same; however, yield increased some. About two-thirds of this good carrot crop went to canneries.

Celery Most notable was the new low in celery acreage for the last 20 years. Celery acreage fell 809 acres under the 1949 acreage of 4,188 acres.

Melons The most unusual fact was the very long season, which resulted in a very high tonnage per acre. The county melon acreage was greater this year. Growers also enjoyed a good market. Prices varied with the varieties of melons. More mosaic (rind rot) showed up this year.

Onions The acreage increased 479 acres over the previous year of 2,876 acres. Yield was up and quality was good. The crop graded to about 35% jumbos and 65% mediums. Unfortunately, the market was very poor all season.

Peas The acreage increased 408 acres over the 857 acres of last year; however, the yield per acre decreased. Prices remained about the same. Growers were not troubled with aphids this year.

Spinach The yield decreased some this year, with most of the crop going to processors. There was an acreage increase of 125 acres.

Strawberries The county acreage dropped 80 acres under the 275 acres of 1949. However, there was an increased yield per acre and better prices. Heavy shipments went to the freezers.

Tomatoes The round tomato acreage increased by 1,618 acres; however, the pear tomato acreage decreased by 1,080 acres. There was more shipping of tomatoes this year and the average price per box increased 30 cents over last year. The yield for canning round tomatoes harvested, dropped 1½ tons under the previous year. The rains of October 23rd to October 26th together with the late ripening of fruit in many fields, coupled with the labor strike and lack of pickers was the main factor for the reduction in yield.

FRUIT AND NUT CROPS
SAN JOAQUIN COUNTY
YEAR 1950

CROP	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Almonds	8,225	.55	4,524	Ton	$520.00	$2,352,480
Apricots (Shipping)	1,081	12.90	13,945	28-lb pkge.	1.35	18,826
Apricots (Processed)		3.49	3,773	Ton	60.00	266,380
Apricots (Dried)		.15	162	Ton	440.00	71,280
Cherries (Royal Ann)	1,019	2.72	2,772	Ton	220.00	609,940
Other Cherries (Shipping)	2,508	2.08	5,217	Ton	485.45	2,532,593
Other Cherries (Processed)		.39	978	Ton	220.00	215,160
			8967			3357693
Chestnuts	130	1.50	195	Ton	250.00	48,750
Figs (Shipping)	406	.04	16	Ton	145.00	2,320
Figs (Processed)		1.16	471	Ton	130.00	61,230
Figs (Dried)			32	Ton	340.00	10,880
Juice Grapes (Shipping)	32,878	.76	24,987	Ton	116.00	2,898,492
Juice Grapes (Wine)		2.56	84,168	Ton	61.00	5,134,248
Tokay Grapes (Shipping)	22,530	151.97	3,423,884	28-lb Pkge.	1.95	6,676,574
Tokay Grapes (Wine)		4.76	107,243	Ton	50.50	5,415,771
All Other Grapes (Shipping)	1,812	33.38	60,485	28-lb Pkge.	1.87	113,107
All Other Grapes (Wine)		4.43	8,027	Ton	56.00	449,512
Mis'l. Orchards	106			Acre	200.00	21,200
Nectarines	83	301.00	24,983	28-lb Pkge.	2.05	51,215
Olives	353	1.50	529	Ton	200.00	105,800
Peaches Free (Shipping)	2,111	193.10	407,634	20-lb Crate	1.10	448,397
Peaches Free (Processed)		3.94	8,317	Ton	60.00	499,020
Peaches Free (Dried)		.25	528	Ton	440.00	232,320
Peaches Cling (Processed)	5,519	8.87	48,953	Ton	60.00	2,937,180
Peaches Cling (Dried)			17	Ton	300.00	5,100
Pears (Shipping)	90	.59	53	Ton	75.00	3,975
Pears (Processed)		6.54	588	Ton	75.00	44,100
Plums (Shipping)	1,091	191.44	208,861	28-lb Crate	3.00	626,583
Plums (Processed)		.07	76	Ton	35.00	2,660
Prunes (Shipping)	101	385.74	38,960	28-lb Crate	3.00	116,880
Prunes (Dried)		.95	96	Ton	245.00	23,520
Walnuts	11,707	.68	7,961	Ton	410.00	3,264,010
				TOTAL		$35,250,403

FIELD CROPS
SAN JOAQUIN COUNTY
YEAR - 1950

CROPS	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	PRODUCTION UNIT	F.O.B.VALUE PER UNIT	F.O.B.VALUE TOTAL
Alfalfa Hay	65,655	6.30	413,626	Ton	$ 18.00	$7,445,268
Barley	97,382	19.50	1,898,949	Cwt.	2.25	4,272,635
Beans, Dry	12,685	15.02	190,529	Cwt.	8.41	1,602,349
Corn, Grain	9,046	1.10	9,951	Ton	60.00	597,060
Corn, Husks			110	Ton	600.00	66,000
Grain, Sorghum	3,144	17.00	53,448	Cwt.	2.40	128,275
Hay, Grain	8,159	1.60	13,054	Ton	17.50	288,445
Hay, Wild	7,093	1.25	8,866	Ton	16.00	141,856
Oats	12,469	10.00	124,690	Cwt.	2.35	293,022
Pasture (Range)	212,805			Acre	2.00	425,610
Pasture (Clover)	67,831			Acre	45.00	3,052,395
Pasture (Sudan Grass)	938			Acre	35.00	32,830
Pasture (Stubble)	126,264			Acre	1.25	157,830
Potatoes **	4,465	316.73	1,414,199	Cwt.	1.85	2,616,268
Pumpkins (Canning)	301	7.00	2,107	Ton	7.00	14,749
Pumpkins (Stock)		16.00	4,816	Ton	3.00	14,448
Rice **	6,240	35.00	218,400	Cwt.	4.40	960,960
Safflower	416	1,018.00	423,488	Lb.	.035	14,822
Silage, Corn	640	15.00	9,600	Ton	5.00	48,000
Sugar Beets * **	13,128	17.40	228,427	Ton	12.00	2,741,124
Sunflowers	1,654	8.00	13,232	Cwt.	7.00	92,624
Sweet Potatoes	1,852	189.00	350,028	Basket	1.60	560,045
Wheat	13,319	9.50	126,530	Cwt.	3.30	417,549
				TOTAL		$25,924,164

* Includes Federal Subsidy
** Harvested Acreage only

VEGETABLE CROPS
SAN JOAQUIN COUNTY
YEAR - 1950

CROPS	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F. O. B. VALUE PER UNIT	F. O. B. VALUE TOTAL
Asparagus (Shipping)	55,022	24.35	1,339,786	30 lb. Crate	$ 3.70	$4,957,208
Asparagus (Processed)		.79	43,467	Ton	206.00	8,953,802
Beets, Table	38	15.00	570	Ton	30.00	17,100
Cabbage	60	285.00	17,100	Crate	1.50	25,650
Cauliflower	27	300.00	8,100	Crate	1.25	10,125
Carrots	442	13.00	5,746	Ton	45.00	258,570
Celery	3,379	324.00	1,094,796	Crate	2.80	3,065,429
Corn, Sweet	442	185.00	81,770	Crate	1.65	134,920
Cucumbers	116	5.20	603	Ton	42.90	25,869
Garlic	17	75.00	1,275	Cwt.	9.00	11,475
Lettuce	220	200.00	44,000	Crate	1.25	55,000
Melons Cranshaws	257	5.89	1,514	Ton	38.20	57,835
Melons Cantaloupes	490	178.00	87,220	Crate	1.85	161,357
Melons Casabas	437	5.85	2,556	Ton	23.50	60,066
Melons Honeydews	220	7.25	1,595	Ton	22.50	35,887
Melons Persians	40	7.25	290	Ton	26.00	7,540
Melons Watermelons	1,915	16.25	31,119	Ton	19.60	609,932
Onions (Early)	2,247	510.00	1,145,970	50 lb Sack	.75	859,477
Onions (Late)	1,106	560.00	619,360	Sack	.65	402,584
Peas (Shipping)	210	74.00	15,540	Tub	1.45	22,533
Peas (Processed)	1,055	1.80	1,899	Ton	60.00	113,940
Peppers	133	12.00	1,596	Ton	40.00	63,840
Spinach	805	3.80	3,059	Ton	22.50	68,827
Squash	305	10.00	3,050	Ton	18.00	54,900
Strawberries	197	1155.00	227,535	12 Basket Crate	2.65	602,968
Tomatoes (Shipping)		63.08	1,348,777	32lb lug	2.40	3,237,065
Tomatoes (Round)	21,382	13.82	295,499	Ton	22.50	6,648,727
Tomatoes (Pear)	1,873	11.30	21,165	Ton	27.50	582,037
Truck Garden	1,032			Acre	200.00	206,400
				TOTAL		$31,311,063

SEED CROPS
SAN JOAQUIN COUNTY
YEAR - 1950

CROP	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Alfalfa Seed	563	425.00	239,275 Lb.	$ .19	$ 45,462
Asparagus Roots	105		Acre	400.00	42,000
Beans (Black Eyes) (Certified)	63	5.00	315 Cwt.	15.00	4,725
Beans (Cranberry) (Certified)	35	6.00	210 Cwt.	10.50	2,205
Beans (Dark Red Kidney) (Certified)	102	15.00	1,530 Cwt.	15.00	22,950
Beans (Red Kidney) (Certified)	3,944	16.45	64,879 Cwt.	15.50	1,005,624
Ladino Clover Seed	2,619	160.00	419,040 Lb.	1.20	502,848
Lettuce Seed	10	94.00	940 Lb.	1.00	940
Nursery (Grape Vines)					7,000
Nursery (Others)					137,800
Nursery (Trees)					103,000
Onion Seed	18	335.00	6,030 Lb.	1.00	6,030
Potatoes (Certified)	806	209.00	168,454 Cwt.	2.60	437,980
Sudan Grass Seed	170	8.00	1,360 Cwt.	5.25	7,140
Turnip Seed	20	800.00	16,000 Lb.	.11	1,760
			TOTAL		$2,327,464

PERMANENT CROPS IN SAN JOAQUIN COUNTY
YEAR - 1950

CROP VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
ALMONDS		
Drake	8	355
Eureka	0	1
I X L	0	117
Jordanolo	300	455
Mission	585	2,992
Ne Plus Ultra	61	526
Non Pareil *	812	3,456
Peerless	106	282
Other	6	41
Total	1,878	8,225
APPLES		
White Astracaan	0	10
Golden Delicious	0	1
Other	0	1
Total	0	12
APRICOTS		
Blenhein & Royal *	68	582
Moor Park & Hemskirk	0	8
Tiltons *	27	490
Other	0	1
Total	95	1,081
CHERRIES		
Bing	308	1,418
Black Republican	1	26
Chapman	19	147
Lambert	21	259
Royal Ann	221	1,019
Tartarian	52	583
Other	12	75
Total	634	3,527
CHESTNUTS (All)	6	130
FIGS		
Black	0	31
Kadota	4	375
Total	4	406
FILBERTS (All)	0	1

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
GRAPES (Raisin)		
Muscat	12	189
Thompson Seedless	18	649
Zante Currants	0	8
Total	30	846
GRAPES (Table)		
Cardinal	26	0
Concord	0	6
Emperor	0	213
Malaga	0	109
Ribier	0	150
Tokay *	224	22,530
Other	1	488
Total	251	23,496
GRAPES (Wine)		
Alicantes *	11	5,304
Burger	13	924
Carignane	128	7,778
Colombar	0	30
G. Reisling	0	10
Golden Chasselas	0	80
Grenache	46	937
Matero	0	19
Mission	80	1,774
Palomino	15	1,143
Petite Sirah	0	397
Sauvignon Blanc	0	23
Zinfandel *	76	13,690
Other white	0	153
Other dark	74	616
Total	443	32,878
NECTARINES (All) *	25	83
OLIVES		
Ascolano	5	69
Manzanillo	54	76
Mission	26	192
Others	0	16
Total	85	353

* Large acreage changes due to complete new survey

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
PEACHES (Cling)		
Andora	25	101
Carolyn	33	38
Cortez	64	15
Fortuna	52	118
Gaume	52	1,061
Gomes (Stuart)	107	386
Halford	76	1,307
Johnson	0	126
Libbee	0	50
Paloro	114	1,067
Peak	4	216
Phillips	13	486
Sims	0	68
Tuscan	0	14
Walton	0	65
Other	79	401
Total	619	5,519
PEACHES (Free)		
Babcock	1	4
Crawford	0	3
Early Elberta	7	21
Elberta	153	855
J. H. Hale	40	145
Lovell *	3	298
Muir	0	170
Salway	1	23
Other *	119	592
Total	324	2,111
PEARS		
Bartlett	1	85
Beurre Hardy	0	5
Total	1	90
PERSIMMONS (All)	0	8

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
PLUMS		
Beauty	0	3
Burbank	0	10
Climax	0	8
Duarte	17	95
Grand Duke	0	9
Kelsey	0	11
President	2	118
Santa Rosa	20	258
Tragedy	7	231
Wickson	0	4
Others	59	344
Total	105	1,091
PRUNES		
French *	0	41
Imperial	0	2
Robe De Sergeant	0	9
Sugar *	1	49
Total	1	101
QUINCES (All)	0	11
WALNUTS		
Concord	3	47
Eureka *	201	2,843
Franquette *	365	3,064
Hartley	468	148
Mayette	26	722
Payne	206	4,583
Placentia	0	87
Other	69	157
Seedling	98	56
Total	1,436	11,707
BLACK WALNUTS *	584	74
ASPARAGUS	2,502	55,022

* Large acreage changes due to complete new survey.

THE TREND OF FRUIT & NUT CROPS IN SAN JOAQUIN COUNTY
AT FIVE YEAR INTERVALS

BEARING ACREAGE

CROP	YEAR 1930	YEAR 1935	YEAR 1940	YEAR 1945	YEAR 1950
Almonds	2,697	3,613	4,221	6,502	8,225
Apples	36	28	32	36	12
Apricots	1,422	1,732	1,621	1,876	1,081
Cherries	1,942	4,417	4,352	4,102	3,527
Chestnuts	60	193	245	182	130
Figs	2,088	547	458	510	406
Grapes, Juice	32,600	33,932	33,893	32,400	32,878
Grapes, Raisin	852	702	979	1,003	846
Grapes, Table	2,064	1,707	1,499	1,276	966
Grapes, Tokay	17,041	17,255	17,925	18,110	22,530
Nectarines	52	115	126	195	83
Olives	286	318	364	351	353
Peaches, Cling	3,102	3,413	3,273	4,124	5,519
Peaches, Free	2,640	2,802	2,781	3,181	2,111
Pears	837	672	285	141	90
Persimmons	2	7	5	13	1
Plums	2,077	2,426	1,572	1,280	1,091
Prunes	543	655	1,244	822	101
Walnuts	5,284	8,818	9,084	9,229	11,707

THE TREND OF FIELD CROPS IN SAN JOAQUIN COUNTY
AT FIVE YEAR INTERVALS

CROP	YEAR 1935	YEAR 1940	YEAR 1945	YEAR 1950
Alfalfa Hay	38,633	47,822	50,505	65,655
Barley	137,725	92,483	91,199	97,382
Beans (All)	36,316	25,090	11,469	16,729
Corn (Grain)	27,650	16,583	14,564	9,046
Flax Seed	416	1,276	520	0
Grain Sorghum	11,832	14,057	4,187	3,144
Hay (Grain)	25,493	22,966	22,101	8,159
Hay (Wild)	2,817	10,839	24,573	7,093
Oats	16,611	10,043	7,480	12,469
Pasture (Range)	242,916	238,381	219,625	212,805
Pasture (Ladino Clover)	6,016	17,898	30,313	67,831
Potatoes	12,657	9,404	7,491	4,465
Pumpkins	425	540	617	301
Rice	1,640	2,507	3,168	6,240
Silage Corn	1,933	1,698	1,463	640
Sugar Beets	10,245	20,485	4,597	13,128
Sunflowers	3,523	3,182	3,175	1,654
Sweet Potatoes	818	2,186	1,330	1,852
Wheat	47,353	38,392	21,661	13,319

THE TREND OF VEGETABLE CROPS IN SAN JOAQUIN COUNTY
AT FIVE YEAR INTERVALS

CROP	YEAR 1935	YEAR 1940	YEAR 1945	YEAR 1950
Asparagus	15,931	31,499	43,681	55,022
Beets (Table)	30	22	63	38
Broccoli	12	125	10	50
Cabbage	30	11	26	60
Cauliflower	10	15	20	27
Carrots	308	786	1,386	442
Celery	6,401	5,885	5,482	3,379
Corn (Sweet)	541	345	432	442
Garlic	11	5	27	17
Lettuce	415	308	63	220
Melons (All)	2,900	3,161	1,907	3,359
Onions	1,968	1,280	2,464	3,353
Peas	1,958	2,310	5,365	1,265
Pepper	80	43	29	133
Spinach	1,656	534	1,365	805
Squash	461	320	351	305
Strawberries	120	156	15	197
Tomatoes (Round)	11,580	5,036	18,595	21,382
Tomatoes (Pear)		10,557	7,507	1,873

SAN JOAQUIN COUNTY
YEAR - 1950

APIARY PRODUCTS

Honey	867,700 lbs.	@	.09	$ 77,793.00
Bees Wax	4,460 lbs.	@	.47	2,096.00
Queen Bees	4,475 Queens	@	.88	3,938.00
Pollenization	4,062 Colonies	@	1.27	5,159.00
			Total	$ 88,986.00

DAIRY PRODUCTS

Milk and Milk Products	$ 11,100,160.00

LIVESTOCK

Beef Cattle and Calves	$ 12,810,677.00
Hogs	2,397,926.00
Sheep and Wool	2,677,375.00
Total	$ 17,885,978.00

POULTRY

Chickens	$ 952,404.00
Eggs	1,784,802.00
Turkeys	1,124,481.00
Total	$ 3,861,687.00

SUMMARY

Fruit and Nut Crops	$ 35,259,403.00
Field Crops	25,924,164.00
Vegetable Crops	31,311,063.00
Seed Crops	2,327,464.00
Apiary Products	88,986.00
Dairy Products	11,100,160.00
Livestock	17,885,978.00
Poultry Products	3,861,687.00
Grand Total	$127,758,905.00