1952
AGRICULTURAL REPORT

COUNTY OF SAN JOAQUIN

DEPARTMENT OF AGRICULTURE

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 nineteenth 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 a F.O.B. basis. Cost of production, harvesting, packing, and other handling costs should be deducted to arrive at a true farm value.

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

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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	
Mark A. Huberty	Deputy Commissioner	
Kenneth W. Jones	Linden District	
Thomas H. Ladd	Quarantine & Standardization	
Elmer T. Pahl	Seed Certification & Inspection	
Deane R. Pratt	Farmington District	
John R. Solari	Roberts Island District	
Don Zuckswert	Entomologist	
D. V. Widney	Warehouse	
Elna Benjamin	Bookkeeper & Stenographer	
Laura Bumpus	Clerk Typist	

Lodi Office	Lodi City Hall	Lodi 8-1432
George Stipe	Deputy Commissioner	
L. F. Ashley	Victor District	
Richard DeVol	Terminous District	
Marvin Switzenberg	Thornton District	
Doris Storz	Clerk Typist	

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

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

SPECIAL WEED CONTROL PROJECT

Richard R. Raney	Inspector
Walter Beck	Mechanic

PLANT QUARANTINE

The administration and enforcement of state and federal plant quarantine laws and regulations is an important function of the Agricultural Commissioner's office. The purpose of these laws is to prevent the introduction or spread of insects, plant diseases, animal or weed pests dangerous or detrimental to the agricultural industry of California. In order to prevent the introduction and dissemination of detrimental agricultural pests through any kind of carrier, there is continual inspection of all plant materials or public conveyances coming into this county which might harbor 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, 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.

The following table shows the amount of quarantine work completed for the year of 1952:

State Interior Quarantine Inspections

	By Truck	By Mail	By Boat or Rail	Total
No. of shipments passed	1,144	830	49	2,023
No. of items passed	28,039,231	95,674	44,963	28,179,868
No. of shipments rejected	132		4	136
No. of items rejected	3,153		24	3,177

State Exterior Quarantine Inspections

	By Truck	By Mail	By Boat or Rail	Total
No. of shipments passed	55	5,127	794	5,976
No. of items passed	100,603	188,117	145,505	434,225
No. of shipments rejected	9	37	412	458
No. of items rejected	833	952	474	2,259

Total Quarantine Inspections

	Year 1951	Year 1952
No. of shipments passed	6,992	7,999
No. of items passed	13,836,814	28,614,093
No. of shipments rejected	764	594
No. of items rejected	341,414	5,436

QUARANTINE VIOLATIONS

State Quarantines	Number of Violations	Federal Quarantines	Number of Violations
Quarantine Proc. # 1	9	Federal Quar. # 3	12
Quarantine Proc. # 2	1	Federal Quar. #28	5
Quarantine Proc. # 9	6	Federal Quar. #29	1
Quarantine Proc. #10	2	Federal Quar. #37	14
Quarantine Proc. #13	1	Federal Quar. #55	6
Quarantine Proc. #15	3	Federal Quar. #56	14
Quarantine Proc. #16	6	Federal Quar. #63	1
Quarantine Proc. #20	4	Federal Quar. #69	1
Agri. Code Sec. #115	41		
Agri. Code Sec. #124	137		
Agri. Code Sec. #125	375	B.A.I. Order #371	8
TOTAL	585	TOTAL	62

Ship Inspections

This office collaborates with the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture in the enforcement of federal plant quarantines. The federal regulations require that all vessels, on arrival at the first United States port, be placed in quarantine and inspected for the presence of pests or contraband materials.

This year, 96 ships were inspected, an increase of 20 per cent over last year. Each ship's cargo, food stores, baggage, officer's and crew's quarters, and garbage were examined for injurious pests and quarantine law violations. 32 of the 96 ships inspected were found to have contraband material aboard. Most of the quarantine material was plant food, plants, and foreign meat. The plant food, such as fruit and vegetables were usually found in the ship's stores. While the ship was in port, this food was placed under seal in lockers or refrigeration rooms.

After July 6, 1952 the inspection of foreign meat was discontinued by this department and turned back to the Bureau of Livestock Disease Control, State Department of Agriculture. Before this date, however, 18 ships were found to have foreign meat aboard (an increase of 6 ships over last year's total). In order to prevent introduction of any livestock disease, the storage lockers which contained foreign meat were sealed.

Postentry Inspections

The Federal Nursery Stock, Plant and Seed Quarantine Number 37 provides that certain foreign plant materials are permitted entry into the United States under certain restrictions including an approved growing ground for postentry inspection. During 1952 there were 16 lots of plant material imported into this county, and we assisted the state pathologists in the inspection of this nursery stock. No unusual diseases were found.

Certification

When certification as to pest conditions or pest treatments is required by another state or country, it is the duty of this office to inspect and to issue the required certificate free of charge (except where a treatment is required). Eighteen sanitary inspection reports and 270 potato fumigation certificates were issued. There was $675.00 received in fees for potato fumigation certificates during 1952.

PLANT DISEASE AND INSECT SURVEY

The purpose of this survey work is to detect pests new to our county, or not widely distributed here so that they may be suppressed or eradicated before they become well established or widespread. To determine if any new pests have been introduced into this area, survey work by trapping and visual inspection of various growing crops and plant materials was carried out throughout the year. The following is a summary of the most important pest surveys conducted by members of this department.

PLANT DISEASES

Grape Mosaic (Virus)

Accidental introduction of contaminated experimental stock made necessary the inspection of the properties where the stock had been planted. Four properties were inspected in September; no positive identifications were made.

Chestnut Blight Endothia parasitica

This is the eighteenth year eradication work has been carried out since the discovery of the pest in our county. Only one infested tree was found on the three properties inspected. The tree was destroyed by burning to prevent spread of the fungus.

Potato Rot Nematode Ditylenchus destructor

A survey was made of cull potatoes in the packing sheds on one of the major potato producing islands. No evidence of the nematode was found.

Bulb Nematode Ditylenchus dipsaci

Since there are about ten known properties in this locality infested with the pest, survey work for it was discontinued. However, we will continue to keep this nematode under observation.

Strawberry Spring Dwarf Nematode Aphelenchoides fragariae

Seven properties were surveyed for this strawberry nematode. It has not been found in the county since 1947 when one property was infested. The plants on the property were destroyed. No nematode or characteristic damage was found this season.

Western X Disease and Yellow Leaf Curl of Peaches (Virus)

In cooperation with the State Bureau of Plant Pathology, 480 peach and nectarine orchards in San Joaquin County were inspected for yellow leaf curl and western X. The entire county was surveyed and no yellow leaf curl was found in any of the orchards. Out of the 852,704 trees inspected, new cases of western X were found on 386 trees this year, which brought the total of infected trees in San Joaquin County to 657. All infected trees were marked by inspectors from this department and later confirmed by two state pathologists who worked with our office throughout the peach survey.

Fifteen San Joaquin County inspectors comprised the survey crew and a total of 1,526 man hours were spent during the two and one-half month inspection tour. The 480 orchards contained approximately 7,899 acres. Almost two weeks were spent in making maps of each property in the county having peach and nectarine orchards in order to facilitate the work of the inspectors. The locations of trees infested with western X were marked on these maps so that they could be easily located at a later time and also so that there would be a record of them. A complete record of the number of properties, trees, acres and man hours spent was kept throughout the survey. Reports were made each week on all diseased trees and sent to the State Bureau of Plant Pathology for permanent record.

INSECT PESTS

Colordao Potato Beetle *Leptinotarsa decemlineata*

A spot check was made of approximately 1,200 acres to determine if this insect was present. None was found.

European Corn Borer *Pyrausta nubilalis*

A survey was made of seven properties in the Stockton district to determine if this serious midwestern corn pest was present. Negative results were obtained.

Japanese Beetle *Popillia japonica*

Fifteen regulation U.S.D.A. scouting traps were set at four strategic locations such as the airfield, etc. These traps were inspected and serviced weekly from March 27th to September 29th. No Japanese beetles were taken. This insect is destructive to over 275 species of plants and is distributed from the Atlantic coast to the midwest.

Cherry Fruit Flies *Rhagoletis cingulata* and *Rhagoletis fausta*

The State Department of Agriculture furnished fifty cardboard traps for this survey. They were baited with ammonium carbonate and hung about eight feet off the ground in cherry trees in the major cherry producing areas of the county. These traps were in the trees from May 16th to June 18th. They were collected and sent to Sacramento for identification of all insects captured. No cherry fruit flies were found. These insects are under eradication in northern California.

Oriental Fruit Fly Dacus dorsalis

In order to detect any incipient infestation of this insect, fourteen traps were set at strategic locations such as the airfield, harbor, etc. Traps were baited with methyl eugenol. These were inspected and serviced weekly from March 27th to September 28th. No fruit flies were taken. This insect is a very serious pest of fruit in the Hawaiian Islands.

Sweet Potato Weevil Cylas Formicarius elegantulus

In October, two packing sheds and five fields consisting of 100 acres in the Manteca district were surveyed for this weevil. No weevils nor characteristic damage was found. This insect is a very serious pest of sweet potatoes in the southeastern states.

Dusky-veined Walnut Aphid Callaphis juglandis

This year there appeared infestations of this aphid on walnut trees in Alameda and Santa Clara counties. To determine the presence here, a survey was made of 240 walnut trees at twenty-four different locations. Negative results were obtained.

Citrus White Fly Dialeurodes citri

A survey for this insect was made on 194 properties in San Joaquin County. Negative results were obtained. This pest is presently under eradication in Fresno and Madera Counties.

Olive Parlatoria Scale Parlatoria oleae

A survey was made in Stockton and Tracy for this insect. The conclusion drawn was that the species is of general distribution in the two cities.

NURSERY INSPECTION

Under authority of Section 123.56 and 128 of the Agricultural Code of California, inspections are made of all San Joaquin County nurseries to see that they are meeting the legal standards regarding insects, plant diseases, and noxious weeds. Since nursery shipments are made to many different points both in and out of the county, this inspection is an important protection to the agricultural industry against the spread of detrimental pests.

Nurseries (Ornamental)

The inspection of nursery stock and premises in thirty nurseries was completed this year. Two important scale insects were found; the olive parlatoria scale Parlatoria oleae, and the pit-making pittosporum scale Asterolecanium arabidis. In each case, the hosts and insects were eradicated from the nursery. Olive parlatoria scale was found in a San Joaquin County nursery for the first time since these inspections were started. Other pests found were common diseases, weeds, and insects such as aphids, scales, red spiders, white flies, and mealy bugs. As part of our pest control program, one nursery was sprayed by the county to rid it of plant pests.

The pests that were found through nursery inspections were controlled to meet the requirements of Section 123.56 of the Agricultural Code of California which governs the issuance and use of inter-county nursery stock certificates.

Nurseries (Tree)

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 specifications or are infested with pests are rejected.

Nurseries (Virus Survey)

In order that orchard men may be assured of receiving virus free trees, a program of bud wood selection was started in 1949 by the State Department of Agriculture. Trees that are going to be used by nurseries for their bud wood propagation are inspected for viruses. Any trees which show an unusual disorder or disease are marked and the nurserymen are informed not to use these trees for their propagation stock. Some of the field work was done by this department to assist the state pathologists in the survey.

Nurseries (Tomato)

San Joaquin County tomato bed inspection started this spring in April and continued through May and into June. This inspection is primarily to prevent the spread of nematode into clean soil, but is also to prevent the spread of any other insect or disease. 10,000,000 plants were rejected throughout the extensive inspections made, approximately 13 per cent of the total number of plants inspected. Last year, 17 per cent of the total number of plants inspected were rejected. Since it is impossible to rid soil of nematode, this yearly inspection work is extremely important to all farmers in San Joaquin County. One rejection for nematode resulted in a court case when the growers moved plants which were under a "hold notice". A $100.00 fine was collected and a suspended sentence of 30 days and a probation period of one year was given.

In order to facilitate the shipping of tomato plants from Indio into San Joaquin County, two inspectors from this department went there in April to inspect the plants at their place of origin. This service was paid by the growers there, thus incurring no expense to this county. Each truck was issued a certificate showing that the plants had been inspected and certified before being loaded for shipment. Over 19,000,000 plants were inspected at Indio.

TOMATO BED INSPECTION IN SAN JOAQUIN COUNTY FOR 1952

Plants free from nematode - - - -	65,000,000
Plants infested and rejected - -	10,000,000
Total number of plants inspected-	75,000,000

ORCHARD AND FIELD INSPECTION

It is the duty of this office to enforce the provisions of the Agricultural Code relating to the control of insects and plant diseases which are pests to agriculture. Throughout the year, many inspections are made of various orchards, vegetable, and field crops for the purpose of determining the extent of damage by these established pests, and control recommendations are made to the growers. These pest control methods are noted, as are materials in current use and the advantages which such materials may have over those formerly used. Infestations and treated areas are inspected periodically to observe the degree of control, and records are kept on a monthly basis of the various operations in the county.

The 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

This major pest of walnuts continues to be a problem to walnut growers. Unfavorable weather conditions during the spraying period caused a slight increase in worm damage. However, worm counts were still low compared with a few previous years.

Walnut Aphis Chromaphis juglandicola

Heavy aphis population occurred throughout the growing season and orchardists were compelled to control this pest several times. Malathon, a new insecticide, when applied as a spray gave excellent control of this insect.

Two Spotted Spider Mite Tetranychus bimaculatus

Unfavorable weather conditions for the proper development of this mite, plus numerous beneficial insects were responsible for the low population of adult mites in orchards. Practically no leaf damage was observed in any of the commercial orchards.

Black Scale Saissetia oleae

A large percentage of the commercial olive orchards were sprayed to combat this pest; consequently there was a lower infestation. In unsprayed orchards, roadside trees, and neglected yard trees we observed a heavy build-up of the scale.

San Jose Scale Aspidiotus perniciosus

Last winter the majority of cherry orchards were sprayed and in most cases, excellent control was obtained. Only spotted infestations were found in various nectarine and peach orchards with only negligible damage.

Almond Mite Bryobia praetiosa

The majority of the almond growers were able to apply dormant spray, which gave excellent results in controlling this pest. However, due to the cool spring, peach growers found heavy populations of these mites in their orchards. The degree of damage was spotted, and varied from orchard to orchard.

Grape Phylloxera Phylloxera vitifoliae

As was the case in 1951, this insect continues to be a problem in many vineyards. Growers are becoming more conscious of this insect each year because of its devastating effect on grapevine roots. Several new infestations were discovered during the year.

Grape Leafhopper Erythroneura comes

This insect was evident in vineyards, as usual; however, late frost, coupled with a cool spring, reduced the population to a very low degree.

Grape Erinose Mite Eriophyes vitis

Early in the spring these mites were scattered throughout the main grape districts, and there were an average number present. However, the over-all damage was very small; in most cases only a few grapevines in the various vineyards showed any loss.

Pacific Mite Tetranychus pacificus

Climatic conditions during the growing season were properly responsible for the light to moderate leaf injury from these mites. Foliage damage was not noticeable until late September, and by that time, grapes had reached maturity.

Peach Twig Borer Anarsia lineatella

Infestations were quite heavy, and young unsprayed orchards showed considerable injury in the new growth. In older orchards fruit injury was higher than the previous year.

Thrips (Various Species)

Heavy populations were noticed in grapes early in the season; however, damage to the berries was not as great as expected from this high population.

Cutworms (Various Species)

Cutworms were not a serious problem in vineyards in 1952. The problem is generally aggravated each year when cover crops are disked in, and the worms have nothing to feed on but the grape buds. When control is necessary, most growers use 5% DDT dust applied directly to the trunk. Very little poison bait is now used because of the excellent results with DDT.

PLANT DISEASES OF FRUIT AND NUT CROPS

Brown Rot Sclerotinia fructicola

The heavy dews which prevailed during the growing season favored the development of brown rot. Heavy damage occurred in the early varieties of peaches in many orchards, and the degree of losses varied in each orchard. However, mid-season and late varieties of peaches were less effected by this fungus, mainly due to the change in weather conditions.

Peach Blight Coryneum beijerinckii

Since the majority of apricot and peach growers spray to combat this disease, this season, very light infestations were observed on trees in various orchards in the county.

Peach Leaf Curl Taphrina deformans

As was the case in 1951, there was very little evidence of this disease during the year.

Oak Root Fungus Armillaria mellea

This fungus continues to be a problem in many vineyards and orchards throughout the county. Many growers are becoming more conscious of this destructive fungus and are taking strong measures toward control. This year approximately 5,500 gallons of carbon bisulphide were used by growers in control work.

Crown Rot Phytophthora cactorum

This fungus continues to be a problem in walnut orchards and individual trees in town. This condition is most noticeable in locations where soils are poorly drained or where excessive surface moisture is maintained.

Powdery Mildew Sphaerotheca pannosa var persicae

Mildew was very heavy in the majority of the peach orchards throughout the county. Damage varied in different orchards ranging in degree from light to severe losses. The repeated applications of sulphur dust did not stop the devastating attack of mildew, largely because of weather conditions.

Walnut Blight Phytomonas juglandis

Increased infestations were observed in many of the Payne walnut orchards. This increase can probably be attributed to the damp weather in the spring. Because this blight varies so much from year to year, there is usually no spraying done to combat it.

Cherry Diseases (Various Viruses)

Field observation showed a spread in the infested orchards of the numerous virus diseases such as rasp leaf, crinkle leaf, deep suture, and mottle leaf.

INSECTS AND MITES OF VEGETABLE AND FIELD CROPS

Tomato Mite *Phyllocoptes destructor*

In contrast to the previous season, when this tomato pest appeared in large numbers, relatively light infestations occurred this year. Apparently, greater precautionary measures with adequate applications of dusting sulfur kept this serious pest under control; thus, only a few fields suffered damage.

Beet Leafhopper *Circulifer tenellus*

The beet leafhopper population was noticeably lower compared to previous years. These insects did not present any major problem during the 1952 season.

Corn Earworm *Heliothis armigera*

This lepidopterous insect which readily attacks tomato and corn crops made its usual appearance. Most tomato growers followed a strict dusting program including the insecticide DDD (Dichloro-diphenyl dichloroethane) which kept this pest under good control. However, in corn fields control of the corn earworm with dusting DDT or DDD gave mediocre results. In some fields, hand applications of oil and DDT applied directly to the corn ears proved very effective.

Tomato Hornworms *Protoparce quinquemaculata* and *Protoparce sexta*

This destructive insect caused little damage in San Joaquin County. Growers virtually eliminated this pest by following a scheduled dusting program using DDD.

Red Spider *Tetranychus* Species

By September, a large number of bean fields showed varying degrees of the attack of mites. Many growers found the miticide aramite highly effective in the control of this pest. Red spider also showed up in some of the melon fields causing some damage.

Armyworms (Various Species)

No serious outbreaks occurred this year. Chemical control by growers kept these insects from causing any extensive damage to alfalfa, tomato, and bean crops.

Lygus Bugs *Lygus* Species

Growers of ladino clover seed took special precautions against this insect by treating their fields with DDT. Also, many fields of black-eyed beans were treated. There was notable damage in the safflower crop from this pest.

Darkling Ground Beetles (Various Species)

These insects made their usual appearance in tomato fields in the early spring. This was particularly true in the direct-seeded fields. DDT, DDD, and cryolite were highly effective in keeping losses to a minimum.

Thrips (Various Species)

Such crops as onions, beans, cucumbers, melons, potatoes, and tomatoes were infested with these insects in general. DDT and parathion were used to control the thrip population; thus, damage was light.

Vegetable Weevil Listroderes costirostris obliquus

This weevil made a nuisance of itself particularly in tomato beds. Several tomato fields in the spring were damaged; however, DDT was very effective as a control measure.

Flea Beetles (Various Species)

Activity of these insects was most noticeable in direct-seeded tomato fields. Applications of DDT kept them from causing any extensive damage. Also, some damage was observed in cucumber fields; however, the insecticide cryolite kept the beetles under control.

Grasshoppers (Various Species)

Survey work on areas most prone to grasshopper outbreaks did not reveal any serious infestations. The grasshopper population was relatively low this year. However, commercial pest control operators treated approximately 1,460 acres of alfalfa, peppers, and tomatoes for this insect using a variety of insecticides.

Bean Pod Borer Etiella zinckenella

Infestations of this insect were evident in a number of bean fields. Unfortunately, by the time the damage was observed, it was too late for control.

Serpentine Leaf Miner Liriomyza species

Very heavy infestations were observed especially on tomatoes in the latter part of the summer. A few growers thought their losses from sunburn had been substantially increased by this insect due to the loss of protective leaves. The university conducted experiments using Dieldrin. Reports on the results of these experiments have not yet been published. Other crops attacked were beans and celery. Insecticides used were toxaphene and parathion with questionable results.

Aphids (Various Species)

In general, aphis were not bad this year, but a heavy infestation was reported on banana squash. It was checked with nicotine dust #10. Potatoes and broccoli had rather high populations. Parathion, TEPP, and EPN were used; parathion appeared to give the best results. TEPP proved very effective on aphids infesting strawberries.

Sunflower Phycitid Homoeosoma electellum

There was heavy damage by this caterpillar. Parathion was used on 150 acres, and DDT on 900 acres of sunflowers with fair results.

Seed Corn Maggot Hylemya cilicrura

This seed damaging insect was observed doing considerable damage to one newly planted field of beans. It was necessary to replant approximately 35 acres with lindane treated seed. In general, through the practice of growers of treating the seed with lindane, this pest damage has been virtually eliminated.

Cutworms (Various Species)

These caterpillars caused some damage to asparagus, milo, lettuce, sugar beets, and tomatoes. The degree of damage varied in each field. Good control was attained where fields were treated with poison baits, or dusted with DDT or DDD.

Wireworms Limonius Species

Damage to sweet potatoes by this soil inhabiting insect was moderate. One corn field had a high population. Slight damage was reported on tomatoes.

VEGETABLE AND FIELD CROP DISEASES

Root Knot Nematode Heterodera marioni

As was the case in 1951 this pest continues to spread each year. Many plants in various fields showed moderate to severe stunting from the effects of nematodes feeding on the root system. The range of loss differed in the various infected fields. Where land is known to be contaminated, farmers are compelled to plant resistant crops, or treat their soil with a fumigant in order to grow a profitable crop.

Bacterial Canker Phytomonas michiganensis

This bacterial disease was found to be showing up in only a few tomato fields. Since diseased plants were spotted in the infested fields, no serious losses occurred to any growers.

Western Yellow Blight, Curly Top (Virus)

There were no losses in tomato fields from western yellow blight during the year. In fact, it was almost impossible to find a single diseased plant in the thousands of acres surveyed.

Tomato Mosaic Disease (Virus)

Very little damage resulted from the presence of this virus disease during the year. Diseased plants were observed in many fields; however, in almost all cases, infected plants outgrew this condition and produced good crops. Apparently, only a mild strain of this type of virus appears in this locality.

Spotted Wilt (Virus)

This is another disease of tomatoes with no known control. This disease is spread by thrips, and seems to be spreading more each year. A few fields suffered production losses, but this disease was about the same as in 1951.

Tomato Wilt Fusarium and Verticillium Species

These two fungus diseases, which are major diseases of tomatoes, reduced the production in many fields. It was widespread throughout the county, and caused considerable sunburn late in the growing season. This was due to the spreading of the vine which resulted from this disease. Round tomatoes seem to be more resistant to tomato wilt than pear tomatoes, and less damage was seen in fields of round tomatoes.

Western Celery Mosaic (Virus)

This disease, which is spread by aphids, is considered a major disease of celery. Since the majority of celery grown in San Joaquin County is of the Pascal type, which is somewhat resistant to the western mosaic, there was only about a 1% infestation of western celery mosaic in the area.

Aster Yellow (Virus)

With a slight increase over the previous year, this celery disease was still light and spotted, and caused little damage. This virus is carried by the six-spotted leafhopper, Macrosteles divisus, and does the most damage to the golden varieties of celery.

Barley Yellow-dwarf (Virus)

This virus, spread by aphids, was much lighter this year than last. Apparently weather conditions were adverse to the development of the aphid population, thus cutting down the spread of the disease. A number of fields in various locations showed characteristic yellow and stunt caused by this virus. In most cases, the grain was well enough along in growth so that the virus did not do too much damage.

HOUSEHOLD AND GARDEN PESTS

Our office receives many calls from home owners requesting information on the identification and control of common home and garden pests. The owner wants to know what is damaging his plants or property and how he can control the pests. Usually, the household pests encountered are of the common types such as termites, powder post beetles, storage insects, ants, and carpet beetles. In the gardens we find various species of caterpillars, beetles, earwigs, aphids, true bugs, nematodes, bacterial, and fungal diseases.

Biological Control

Biological control of insects has been carried on by the University of California, which has collected numerous species of insect parasites and predators from foreign countries such as Spain, Iraq and India for distribution in this country. This year the University and the Agricultural Department released approximately 403,900 parasites and predators of the olive parlatoria scale in Tracy and Stockton for the control of this scale. Many parasitised scales have been found since the experiments began.

PEST CONTROL OPERATIONS

The farmers of San Joaquin County are becoming more and more conscious of the need for pest control operations. This increasing need has brought to the market many new insecticides and herbicides which are injurious to crops, livestock, bees, and, in some cases, to humans. The dangers involved in these materials made it necessary for the State Department of Agriculture to enact rules and regulations to protect the agricultural industry against misuse of hazardous chemicals. It became necessary for each county to issue permits for the use of these injurious insecticides and herbicides. At the time of the issuance of the permit, the applicant is informed of the specific hazards of the material he is using, and of the proper safety precautions. In most cases, a field inspection is made before application of the material to make sure there will be no danger to neighboring crops or livestock.

This year, there was a 24 per cent increase in the number of acres treated with chemicals by commercial pest control operators. These operators are required to register with the San Joaquin County Agricultural Commissioner's office each year and to submit a report each month giving information on all work done in this county. In this way, and through field inspections, this department keeps informed of commercial pest control operations throughout the year. During 1952, 20 aircraft operators, and 38 ground rig operators registered in San Joaquin County with intentions of carrying out commercial pest control work.

There were no formal complaints registered against any commercial pest control operator or against any individual farmer because of damage to crops or livestock through misapplication of any chemical material. Acres treated in San Joaquin County by Commercial Operators:

	Acres Treated by Ground Rig	Acres Treated by Aircraft
Plant Diseases and Insect Pests		
Fruit Tree Crops	463	6,125
Field Crops	0	31,035
Vegetable Crops	115	94,250
Vineyards	3,720	94,752
Nut Tree Crops	1,211	1,975
Total	5,509	228,137
Weed Control		
2,4-D	5,508	22,148
Contact Material	711	2,318
Total	6,219	24,466
Soil Fumigation		
DD	904	
EDB	1,063	
BHC	236	
Carbon Bisulphide	14	
Total	2,217	
Grand Total Acres Treated	13,945	252,603

Injurious Insecticides

"Injurious insecticides" include arsenic, TEPP, parathion, EPN, OMPA, and 0-0-diethyl 0-2(ethylmercapto)-ethyl thiophosphate. The last two organic phosphate materials listed were added to the injurious insecticide list in July, 1952. A permit must be obtained before application of any of these materials is made. If there are serious hazards involved either to neighboring crops, livestock, bees, and humans, or to the operator himself, the permit may not be granted. At the time the application for a permit is made, the regulations and safety precautions are discussed with the farmer. Protection to the applicant and his neighbors is provided by these methods since, in many instances, the applicant had no knowledge of the hazards involved in the use of injurious insecticides.

The following is a list of the injurious materials with the number of acres treated and the number of permits issued in 1952:

Material	Acres Treated	Permits Issued
Arsenic Materials	0	0
Tetraethyl pyrophosphate (TEPP)	2,894	66
Parathion	4,654	81
Ethyl-para-nitrophenyl thionobenzene-phosphonate (EPN)	614	11
Octamethyl-pyrophosphoramide (OMPA)	0	0
0-0-diethyl 0-2(ethylmercapto)-ethyl thiophosphate	0	0

Injurious Herbicides

The use of 2,4-D and related injurious herbicides increases every year, despite the rigid rules and regulations set forth by the State Department of Agriculture. This year, there were 262 permits issued, which was an increase of 86 over last year. These 262 permits represented 43,975 acres sprayed with 2,4-D.

According to the rules and regulations for injurious herbicides, the equipment to be used for spraying is checked by our inspectors to make sure it meets the requirements of this county and the State Department of Agriculture. The regulations on wind velocity plus governing the nozzle size, pressure, and gallons per acre minimizes the possibility of damaging drift. The person applying for a permit must list the crops adjoining the field to be sprayed. If the adjoining crop is susceptible to the injurious herbicide the permit may be refused or additional restrictions imposed.

The northern part of the county has been declared the "hazardous" area by the State Department of Agriculture because of the numerous commercial vineyards, which are highly susceptible to this material.

Within this area, no injurious herbicides were applied by aircraft between March 15th and October 15th, nor were any of these materials applied by ground rig within two miles of a commercial vineyard. For the purpose of protecting these vineyards, inspectors were constantly checking the spraying operations, and keeping a close watch for illegal spraying.

STANDARDIZATION

Fruit, Nut, Vegetable, Egg, and Honey

Standardization deals wholly with the inspection and certification of eggs, walnuts, honey, twenty important fruits, and sixteen major vegetables. All of these commodities are governed by separate and specific rules and regulations prescribed by the Agricultural Code. Falling under a general classification are all other fresh fruits, nuts, and vegetables being inspected for insect injury which has damaged the edible portion, worms, mold, and decay. Dried fruits, in addition to dates, are regulated as to deception, insect injury, and mislabelling.

Again, as in previous years, the enforcement of the Standardization laws was carried out by all members of the department in addition to their regular duties with this office. From the beginning of asparagus season to the end of the freestone peach harvest, conditions demanded numerous inspectors to be stationed throughout the county at shipping points. Since shipments were constantly flowing to re-distribution centers from early morning until far into the night, where it was practical and beneficial to continue inspections our inspectors worked. This inspection required morning and night shifts; thus, many hours of overtime were spent inspecting the asparagus, cherries, plums, peaches, and grapes to maintain higher quality and pack, and to further insure the consumer from any fraud, mislabelling or deception of these commodities. In this manner, not only the consumer was benefitted, but the shippers were assisted by receiving clearances on inspected produce, which enabled them to proceed directly to terminal markets without further delay and inspection at the State operated highway inspection stations. Nominal fees were charged to the grower and shipper for this service.

Marketing Orders

This is the third year this office was requested by the Fresh Peach and Plum Advisory Board Officers to undertake inspection of their commodities during the 1952 season. The Marketing Order was in effect from April 25th to October 31st.

Stockton's Marketing Center

The morning wholesale market, an association open to San Joaquin County farmers, opens at 4:00 AM each morning, and closes at 12 noon, operating the year around. Farmers bring their produce from all over the county to the market for shipping to other terminal

markets, or to be sold to local retailers. The market contains eleven produce houses, truck stalls, and unloading platforms; one new building was erected this year. In the summer months an average of 50 farmers' trucks are in the morning market during fruit harvest, decreasing in the winter to an average of 20 trucks a day. To maintain fruits and vegetables of high quality, one inspector spends most of his time in continuous inspection to enforce standardization requirements.

The afternoon market opens at 1:00 PM and continues, many times, until 9:00 or 10:00 PM. The afternoon market spans the months from the middle of asparagus harvest to the end of peach season. Four main trucking concerns ship fruits and vegetables to San Francisco, Oakland, and Los Angeles morning wholesale markets almost every night. With at least one inspector always checking produce on the loading docks, the vast majority of fruit leaving the county is inspected for conformity to standardization laws and compliance with various marketing orders. Nearly every truck is certified to eliminate delay at the State Highway Inspection Stations.

Wholesale Markets and Retail Stores

All wholesale establishments are inspected daily, since much of the produce is shipped here from other counties and other states. It is our policy, also, to inspect fruits, vegetables, eggs, and honey at retail stores, in order to assure the consumer produce of the highest quality. Some produce is brought directly from the fields to the store, evading previous inspection.

Fruit, Nut, and Vegetable

The asparagus crop is of major importance in this county with a bearing acreage of 53,798, and a total yield of 1,011,302 crates. Inspections were made at approximately 150 packing sheds starting the first part of March, and continuing through June. In March, there were some lots rejected for frost injury; however, the majority of rejections for the season were for deceptive pack and mislabelling.

Cherry harvest followed asparagus harvest from May until the first part of July. There were 141 lots rejected for such things as overtolerance of mold and decay, doubles, small sizes, brown rot, immaturity and deceptive pack, cracks, and splits. The main problem in cherry inspection was mislabelling due to the small size of the fruit.

Throughout June, July, August, September, and early October, freestone peaches for the market were inspected for standardization requirements, and also for compliance to the fresh peach marketing order. Rejections were made for numerous defects such as no markings, deceptive pack, split pits, bruises, worms, decay, mold, and brown rot. In September, due to the hot weather, several lots were rejected for over-ripeness.

Due to the unusual hot spell in September, there was considerable sunscald on tomatoes. An overtolerance of such things as overripeness, mold and decay was found in tomatoes for market this year.

Our department maintains an inspection station for watermelons in the southern part of the county. When an inspection was required, it was taken care of by the Manteca branch Agricultural Inspectors. Immaturity, overripeness, and rind rot were the reasons for rejections of watermelons this year.

The grape harvest required some standardization inspection also, which resulted in very few rejections. Immaturity was the only cause for rejections this year.

There is a continual inspection of potatoes throughout the year. Among the reasons for rejections were wet and dry rot, greening, mold, and decay.

This year, only 2 lots of sweet potatoes were rejected. The reason for the rejection was worms and insect injury.

Most of the celery grown in San Joaquin County is shipped east, so is Federal State inspected, and has caused no trouble under standardization law.

Egg Inspection

This year, with one and sometimes two inspectors working at crucial periods, 361 premises were visited and inspected. Egg wholesale establishments, grocery stores, and other places where eggs were offered for sale were routinely inspected for compliance with the standardization egg law. White and black lights (fluorescent) were used in candling a representative sample of 1,504 individual lots of eggs. Eggs were inspected for labelling, checking, spots, and all of the internal defects. A total of 55,889 dozen eggs were candeled with 1,180 dozen eggs found to be in violation of the egg law. Main defects found were blood spots, mislabelling, and adherent yolks, the latter being most prevalent during the hot summer months. No underweight eggs were found, and eggs this year, in general, were excellent in quality.

Honey Inspection

Throughout the year, a number of calls have been received by this office for general information concerning honey grades and marketing requirements.

Grapes for By-Products

Section 771 of the Agricultural Code provides that wineries purchasing grapes on a sugar content basis shall have an official test made on each load delivered. This year 6 wineries required the services of 18 authorized inspectors from this department. There were 31,849 soluble solid tests made, and 15,925 certificates of inspection issued at these wineries. There were 31% less soluble solid tests made and 29% fewer certificates issued than last year. The total cost to the different wineries requiring this service was $5,441.14.

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 2,582 certificates were issued during the year. The certificate is of considerable importance, not only to facilitate movement of produce past state inspection stations, but to insure the recipient at destination produce that meets minimum standards of the California Standardization Law. This service is of special importance to growers and shippers alike in this county since there is a heavy export of fruits and vegetables grown in San Joaquin County.

Standardization Statistics

	1951	1952
Number of Containers Inspected	8,220,458	3,251,772
Certificates Issued	2,665	2,582
Fees Received	$5,612.92	$6,514.50
Violation Notices Issued	487	482
Number of Containers Rejected	19,387	24,952
Court Cases	3	2
Amount of Fines	$265.00	$50.00

RODENT CONTROL

Ground Squirrels Citallus species

By the end of this year, field inspections showed the ground squirrel population in this county to be relatively low. This low population can be attributed to the constant efforts of this department to encourage farmers to destroy these pests at every opportunity. Although work of this nature is continuous throughout the year, maximum control is obtained in the late fall and early springtime. In order to provide properly prepared bait at a minimum expense to the farmer, all poison baits are prepared in the Agricultural Department's warehouse, and sold virtually at cost. During the year, 10,619 gallons of carbon bisulphide, and 10,553 pounds of poison bait were used to kill ground squirrels. Approximately 180,736 acres were poisoned with these materials.

Gophers Thomomys species

The gopher continues to be a nuisance to both residential and rural areas. The widespread trouble with this rodent has been evident by a number of requests for information on the control of this pest. The main type of service performed by this office throughout the year was educational, whereby instructions on placing traps, baits, and various other methods used were given.

Rats Rattus species

One of the most disagreeable rodents to both city and county dwellings is the rat. Since they not only destroy food stuff but are carriers of serious diseases also, it has been our policy to encourage and assist in their control whenever possible. A boon to their

control has been the poison bait, warfarin. Since rats do not build up a tolerance or develop an aversion to this material, warfarin, properly applied, has brought havoc to the rat population. Throughout the year, numerous people, both from city and rural areas, have purchased quantities of this poison bait to control rat infestations on their property. During the year, 3,760 pounds of warfarin bait, prepared by this department, was sold. This year, a program of rat control was undertaken at the city dumps under the County Agricultural Department's supervision. Results have been highly successful.

Field Mice Microtus species

The voles that appeared in such large numbers last year have virtually disappeared this year. Apparently, through the heavy use of poison bait and natural enemies, the vole population in this county has been eliminated.

Coypu Myocastor coypus

An extensive aerial survey of the southeastern portion of the county was made this year to locate probable habitats of this large aquatic rodent. This work was carried out in conjunction with the State Department Bureau of Rodent Control. There have been a few reports given this office describing an animal which could have been a coypu. However, to date no concrete evidence has confirmed that this rodent has established itself within this county.

Rabbits Sylvilagus species & Lepus species

There has been nothing of an unusual nature as to problems with rabbits. No serious outbreaks have occurred. A few requests for information regarding the protection of crops have been received by our office.

WEED CONTROL

It is the policy of the San Joaquin County Department of Agriculture to help in every way possible the seemingly never ending fight against noxious weeds. Each year, farmers are becoming more interested in the control or eradication of weeds, especially deep rooted perennial weeds such as Johnson grass hoary cress, morning glory, Canada thistle, and Russian knapweed. Through more extensive control measures, many farmers are utilizing their land to a greater extent.

Special Weed Control Program

In 1947, a special weed control program was started in order to help eradicate or control the spread of noxious weeds. A major portion of this work is being done on the perennial weeds. County spray rigs patrol county and state roads throughout the growing season controlling the more serious noxious weeds, constantly on the alert for new or serious infestations. Most of the soil sterilization work is done during the winter months with

sodium chlorate and borax compounds. Further aid is extended to the farmer, in some cases, by the Production Marketing Administration, who give partial reimbursement on the cost of material and labor.

County Equipment

Since many farmers do not have their own equipment to control noxious weeds on their property, the county, through this department, has made powered spray rigs available. The farmer pays the operator's wage and material costs, and in this way saves the high cost of hiring the work done commercially or renting the equipment.

Education Work

To spread interest in the weed control program, informative talks have been given at farm meetings, on the radio, and through the newspapers and local journals.

ANNUAL WEEDS

Puncture Vine Tribulus terrestris

This is the most offending of the annual noxious weeds in our county. Unfortunately, puncture vine has gained a toe-hold in parts of the southern section of San Joaquin County on roadsides and some private property. The northern section of the county is relatively free of this pest, and special effort is being made toward control where light infestations appear. By steady vigilance and constant control measures, we hope to prevent further spread of this annual weed.

Yellow Star Thistle Centaurea solstitialis

Farmers find this weed to be a nuisance in pasture land, for the most part. Heaviest infestations are in the northern section of the county, and not too evident in the southern section. Sometimes it is difficult to obtain good control of this thistle, since it seems to prefer fence lines and ditch banks for growing grounds. However, control is much easier than in the case of puncture vine since it is more evident by its tall growth, and viable seed is not produced in as short a time.

Milk Thistle Silybum marianum

In some localities, milk thistle is disagreeable when it is allowed to mature. There have been a number of requests for us to control roadside infestations. Contact sprays are used to control this annual weed along with puncture vine, and yellow star thistle.

In the control of annual weeds, soil sterilants are used, as well as contact materials. Control work is started in the early spring for milk thistle and yellow star thistle. In early summer, puncture vine begins to appear. In each case, control work is started as soon as the weeds appear in order to obtain maximum kill.

PERENNIAL WEEDS

Johnson Grass *Sorghum halepense*

This weed is the most widespread, and causes the most trouble to farmers of this county. During 1952, 783 infestations were treated with borax-chlorate spray material. 247 of these infestations were eradicated. The most important factor in the control of this weed is the follow-up work. Eradication is virtually impossible with only one treatment.

Russian Knapweed *Centaurea repens*

This year there were 38 infestations in the county. One infestation has been eradicated, and control work continues on the remaining 37.

Canada Thistle *Cirsium arvense*

Canada Thistle has been proclaimed one of the most serious weed pests known to agriculture, but fortunately is found in only one location in San Joaquin County. This perennial weed is usually spread either by root expansion or by cultivation. The one infestation is still being treated with 2,4-D.

Horsenettle *Solanum* Species

Only a few small infestations are to be found in this county. Work is continuing on these infestations.

Hoary Cress *Cardaria* Species

This has proved to be a very difficult perennial weed to control probably due to the fact that during the growing season it stores food in its rootstocks so that the next year it is able to produce new plants from shoots sent out from the joints. There were 29 infestations this year of which one was eliminated.

Pepper Cress, Perennial *Lepidium latifolium*

This deep rooted perennial weed is not of wide distribution in this county. During the year, one out of four infestations has been eliminated. Both soil sterilants and contact materials were used.

Klamath Weed *Hypericum perforatum*

There were three new outbreaks this year. The largest of last year's infestations was eliminated by the Klamath Weed Beetle. The remaining roadside infestations are being treated with soil sterilants.

Wild Heliotrope *Heliotropium curassavicum*

There were 3 infestations found to be of nuisance, especially in vineyards. Carbon bisulphide was used with good results.

Bermuda Grass Cynodon dactylon

Infestations in agricultural areas were treated with soil sterilant material throughout the year. Eradication was accomplished on 12 out of 61 infestations.

County Roads and State Highways

Since roadside weeds spread onto adjoining property so readily, this department patrols all county roads with spray rigs at intervals to treat infestations, and also to keep weeds from going to seed; especially puncture vine and yellow star thistle.

The peak of the county road work was reached in June, July, and the first part of August. In the early part of the year, the burning method was used to kill weeds along a total of approximately 1,485 miles of roadside weed infestations. During the winter months, perennial noxious weeds were treated with soil sterilants. Results from the soil sterilant work have been very encouraging, since a number of infestations have been eradicated in this manner.

In addition to the county road work, state highways are patrolled. An agreement was made between the State Highway Department and this department to control weeds on State Highway roadsides; thus, over 10,000 miles were patrolled.

Railroads

Again this year, five of the six railroads within San Joaquin County agreed to control noxious weeds on railroad right of ways. The equipment and labor crews were furnished by this office. The cost of this work was paid by the railroads. Formerly the railroads were interested in controlling only the weeds between the tracks and a narrow strip on each side. Now the agreement between the Department of Agriculture and the railroads is for weed control of the entire right of way, including such weeds as Johnson grass, Russian knapweed, hoary cress, perennial pepper cress, white horsenettle, and any other weed of a serious nature. Negotiations are continuing with the one remaining railroad which has not entered an agreement with us for a weed control program.

Material Used in Weed Control Program

The annuals, puncture vine and yellow star thistle were sprayed with an oil emulsion composed of 10 to 30 gallons of oil, one quart of dinitro general, detergent, and water to make a 100 gallon mix. During cool weather, large proportions of oil were used, and during warm weather, a minimum amount of oil was used in the mixture. A borax-chlorate compound and 10% weed oil were also used on these two weeds with excellent results. Sodium chlorate and borax-chlorate, approximately 15 pounds per square rod, were used to treat perennial noxious weed infestations. Most of the work on perennial weeds was done during the fall and winter months.

Selective and General Weed Spraying

Selective weed spraying is steadily 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 insreasing 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 being a means of disseminating weed seeds into crop lands. Controlling weeds of this nature has proved 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 proved time and again, and the farmers, land owners, and other agencies are becoming more and more interested in this type of work.

Experimantal Work

Since this department is engaged in extensive chemical weed control work, both on private and public land, it is of paramount importance to use the most effective materials and methods to obtain maximum results with minimum cost. Although there is a substantial quantity of literature written on these herbicides, many pertinent facts concerning their value to specific conditions found in this county are not available. Furthermore, each year finds a number of new chemicals placed upon the market for weed control; even less is known about the new chemical's weedicidal properties. Thus, it is evident that only through experimental work can a more accurate conclusion be acquired to further the most successful weed control program possible.

This year, test plots were made using the following materials or combination of materials:

Borax Compounds	Oil Emulsions	Sulphur
Sodium Chlorate	Dinitro Compounds	Thalic Acid
I.P.C.	Oil and Penta	Malic Hydrazide
T.C.A.	Chloro-phenol	2,4-D
C.M.U.		

The test plots of these materials, in many cases, are still being observed as to results. A special burner was constructed to determine its value in the use of oil or butane. Up to the present time, 94 test plots have been made using the materials listed above on various noxious weeds throughout the county.

SEED AND GRAIN INSPECTION

The prevention of the introduction of noxious weed seed into San Joaquin County is accomplished by inspection of seed shipments for planting, and also by inspection of bulk and sacked grain which is used for feed. The authority for this inspection is covered by Chapter 5, Section 125 of the State Agricultural Code. The seed is also checked to determine if all requirements of the California Seed law are met. Shipments of grain and seed by common carrier are held for inspection before being released to the processor or retailing establishment for processing. Our office is notified by these common carriers upon arrival of shipments, thus facilitating grain and seed inspection.

Agricultural and Vegetable Seed Inspection

One of the important duties of this office is to prevent the introduction of noxious weed seeds into this county. 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, 431 lots of agricultural and vegetable seed were inspected in this county. There were several lots rejected for mislabelling. These lots were held pending their proper labelling.

Grain Inspection

The milling companies in this county received numerous shipments of bulk grain for processing into feed during the year. Due to the fact that milling of this grain does not always kill the germ plasm of noxious weed seeds contained in infested shipments, this department supervises the cleaning and handling of the contaminated grain. When it is determined by sampling that a lot is contaminated, the shipment is rejected under the condition that the mill handle the lots so as not to disseminate the pest. Grain lots found infested with pests are disposed of by appropriate methods of cleaning, grinding, or burning. Correlated with this preventive program is the chemical weed spraying program, with the eventual goal of complete eradication of noxious weeds in San Joaquin County.

	Lots Passed	Lots Rejected	Total Lots Inspected
Interstate	622	378	1,000
Intrastate	695	13	708

Lots Rejected in Tonnage:

Tonnage	Reason for Rejection	Disposition
750 Tons	Canada Thistle	Recleaned or diverted
250 Tons	European Corn Borer	Secure proper certificate & cleaned & ground & debris burned
100 Tons	Morning Glory	Cleaned or ground
150 Tons	Russian Knapweed	Exported
16,150 Tons	Johnson Grass	Cleaned & ground or burned
800 Tons	White Horsenettle & Johnson Grass	Cleaned & ground or burned

Screenings

Throughout the year, screenings at the 5 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 13,907 sacks of screenings inspected, 9,602 sacks were rejected for noxious weed seeds. These rejected sacks of screenings were disposed of by recleaning and grinding or dehydrating.

The following weed seeds were present in lots rejected:

Number of Sacks	Kind of Noxious Weed Seed	Disposition
6,427	Johnson Grass	Burned or ground
1,825	Johnson Grass & White Horsenettle	Burned or ground
430	Morning Glory	Diverted to Processor or ground
360	Canada Thistle	Burned or ground
560	Russian Knapweed	For export only

Seed Certification

The purpose of seed certification is to maintain and make available to the public, high quality seed and propagating 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.

Whenever 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 here.

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 being 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. However, 193 samples have been drawn this year consisting of beans, clover, alfalfa, sudan grass, barley and wheat. Beans and ladino clover are the two main seed crops of this county.

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 three months. This deputy worked with all district inspectors checking colonies in the various districts.

This year, there were 73% more colonies inspected and 78% more colonies infected with American Foulbrood which were burned. This increase in American Foulbrood colonies that were destroyed was due to one beekeeper who was treating over 100 colonies for this disease. The following is a report disclosing the amount of work done in this field during 1952:

Type of Work	Number of Apiaries	Number of Colonies
Registered	52	2,907
Entering California	0	0
Leaving California	0	0
Entering County	23	1,785
Leaving County	29	3,160
Moving Within County	12	542
Inspected	136	7,656
Infected with American Foulbrood	18	204
Infected with European Foulbrood	39	93
Burned for American Foulbrood	18	204

COOPERATION WITH BUREAU OF MARKET ENFORCEMENT AND BUREAU OF MILK CONTROL

Investigations, hearings, and procedures set forth under the Produce Dealer's Act, the Processor's Law and Milk Control Law resulted in a net remittance of $39,981.85 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 resulting 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.

Recoveries effected by the Bureau of Market Enforcement for the benefit of San Joaquin County Growers during 1952 are as follows: These recoveries consist of amounts paid by licensees following complaints by growers of failure to pay or failure to perform in accordance with contracts.

	Number of Participants	Amount Received
Produce Dealers	72	$13,441.69
Processors	22	25,122.79
Milk Recoveries	80	1,417.37
Total	174	$39,981.85

FAIRS AND EXHIBITS

The fair activities of this department were curtailed extensively this year, since San Joaquin County did not enter the State Fair. However, an entry was made at the San Joaquin County fair last summer, which was a large book showing the departmental duties.

MISCELLANEOUS DEPARTMENTAL DUTIES

In order to give the farmers of San Joaquin County the best possible service, the members of this department have various duties which they perform in addition to their regular duties. Each of these activities is designed to offer the agriculturalist more complete service.

Identification of Insects, Diseases, and Plants

Throughout the year, many insects, plants or plant diseases are brought in to be identified. This is an important function of our office since it is closely related to quarantine and nursery inspection, field and orchard inspection, plant pest control and weed control. Only after identification, can control of the pest be recommended. Sometimes, in this way, the spread of a serious pest can be stopped. If positive identification cannot be made, the specimen is sent to an insect taxonomist, plant pathologist, or plant taxonomist of the State Department of Agriculture.

Farm Meetings

Inspectors from this department attend farm meetings from time to time in order to keep in close contact with the problems and needs of the farmers of the county. These meetings also provide excellent opportunities to introduce educational programs in pest control work sponsored by this office.

Photographic Work

Photographs are used by this department as a method of recording agricultural information for later reference. The photographs are taken by our personnel and developed in our own dark room, which

saves time and money. In 1952, 488 black and white, and 870 color slides were developed here. One hundred color prints and 500 of the 870 color slides were of different fruit varieties. These are to be used as an aid in identification of varieties. Occassionally some of the black and white prints are submitted as evidence in cases where departmental enforcement of agricultural law is required. The foremost purpose of the photographs is for visual education at farm group and other meetings.

Soil Tests

Many times the presence of alkali or too much salt concentration will cause plants to be dwarfed or to die. This service is performed in our own laboratory as an aid to the inspectors in making recommendations of treatments to be used.

Special Agricultural Reports

Agricultural statistics on crops grown in San Joaquin County are gathered by our inspectors throughout the year from all districts of the county, and kept on file at this office. From time to time, canners, farmers, newspapers, and agencies of various kinds request information regarding a certain crop or condition of a crop. Due to the rapid change of conditions of the different crops, these statistics are very important in planning for the future.

Spraying of County Shade Trees

Once again, this department sprayed county sycamore trees for sycamore scale in order to prevent losses. This year, 595 sycamore trees were treated with 8,550 gallons of a dormant oil spray mixture.

Shop Work

The Agricultural Department has its own shop where spray rigs used for the county's special weed control program are kept in repair and cleaned daily. Some of the equipment used for this purpose was assembled by our personnel. Also all fair exhibits are designed and built here. Since most of the moving parts necessary in a fair exhibit are not available commercially, the shop personnel assembles them.

Staff Meetings

Inspectors' meetings are held at this office periodically throughout the year. These meetings are important to departmental policies and activities because they give the inspectors a chance to discuss problems of the department, changes in laws, and activities of each district in the county. In this way, more uniform service can be given to the farmer.

Weather Reports

Once each week during the summer months and once each month during the winter months, weather reports are sent to the United States Weather Bureau. These reports show crop growing conditions in this county and how they are affected by weather changes.

FINANCIAL REPORT SUMMARY
FOR FISCAL YEAR ENDING JUNE 30, 1952
AGRICULTURAL DEPARTMENT & SPECIAL WEED CONTROL

CLASSIFICATION		
Administration	$ 22,761.15	
Plant Quarantine, Seed and Nursery Inspection	19,146.78	
Fruit, Nut, Vegetable, Honey and Egg Standardization	15,050.30	
Field and Orchard Inspection	13,745.81	
Apiary Inspection	886.13	
Rodent Control	10,180.64	
Weed Control	17,352.00	
Crop Statistics	12,214.67	
Fairs and Exhibits.	1,023.89	
General	3,846.18	
		$ 116,207.55
COLLECTIONS REMITTED TO COUNTY TREASURER		$ 16,128.09

SPECIAL WEED CONTROL BUDGET

Salaries and Wages	$ 41,305.11
Maintenance and Operation	22,559.81
Capital Outlay	3,005.10
	$ 66,870.02

CROP SUMMARY
SAN JOAQUIN COUNTY - YEAR 1952

Climatic conditions are of major importance to agricultural crops and since there is a lot of variance in these conditions within the county itself, the progress trend report of any given crop herein can be only general.

During January and February, farm operations were slowed considerably due to an excessive moisture condition. Preparations of seed beds, winter plantings and pruning activities were held up because of this condition. There was rain and frost intermittently throughout this two month period.

Almonds were starting to bloom the first part of March, peach trees were in the pink bud stage and cherry buds were starting to swell. On March 14th there was a wind and rain storm with winds reaching a peak of 60 miles per hour. Approximately 3,000 fruit and nut trees throughout the county were blown down by the storm which, reportedly, was the worst since 1938. The biggest percentage of this number was almond trees. A hail storm on the following day caused some damage to almond blossoms. Farm operations in general the first half of March were at a standstill. The balance of the month was warm with no rain which gave excellent growing conditions to all crops.

There were light rains and some frost in April which delayed the preparing of the soil for vegetable crops such as tomatoes, celery and potatoes. However, field crops and pastures were benefitted by the light rains and cool overcast weather. Most orchards had produced a heavy spread of blossoms by April; celery seed beds, tomatoes, and potatoes were planted; harvest of asparagus, spinach and grain hay was started.

On May 4th a heavy frost occurred causing damage to potatoes, tomatoes, melons, sweet potatoes and grapes. On May 25th a 150 foot break in the levee near Lockeford damaged an estimated 700 acres of crops in that area. Harvest began in peas, onions and cherries in this month. The last 3 weeks of May had very favorable weather for all crops and excellent progress was made.

Throughout June the days were warm and the nights remained cool which retarded growth and development of melons, tomatoes, and hay crops. A normal amount of setting of fruit on tomato vines was prevented by these low temperatures. June 2nd a break in the levee near the Mossdale Y resulted in the flooding of approximately 4,000 acres of farm land in the Tracy district. Due to the rapid draining of the flood waters, crops were not total losses except for tomatoes. There was a light rain June 9th, but no damage to agricultural crops was reported.

July, August, and September brought very warm weather. Excellent growing conditions prevailed throughout July, August and the first part of September. However, excessive heat during the latter part of September caused considerable loss of tomatoes due to sunburn, sun scald and through the inability of growers and processors to keep pace with the rapid development of the fruit.

Weather remained warm and dry until November 12th when there was a general rain for four days followed by daily morning frost. By the end of November, temperatures were reported as low as 27° F. However, by the time these heavy frost and rains did occur, almost all crops susceptible to damp weather had been harvested. In December, there were rains and intermittent frosts throughout the month.

The following is a report covering a general summary of the important crops in San Joaquin County for 1952:

FRUIT AND NUT CROPS

Almonds

The set of the nuts varied considerably which can be attributed to the imperfect pollinization due to the wet weather at blossom time. This resulted in a tonnage decrease of 530 tons under the previous year even though the acreage increased 142 acres. Price remained about the same.

Apricots

Yields were good this year. The tonnage to the processors remained about the same; however, the price dropped $25.00 per ton. The tonnage of dried apricots was very small and the price increased $100.00 per ton.

Cherries

There was a heavy crop of cherries which resulted in smaller sizes. Also brown rot and immature doubles was heavy. The Royal Anns increased approximately 1,200 tons to processors but price dropped $150.00 per ton. Black varieties increased 3,034 tons to processors. Market conditions were only fair with a drop of $148.00 per ton; however, there was an increase of 1,076 tons for shipping.

Chestnuts

A severe heat spell during the summer while the nuts were filling reduced the size of the nuts. Consequently, tonnage was lower. The major portion of the crop was sold within the state eliminating eastern shipments. The large size nuts sold at fairly high prices but the demand for small nuts was poor.

Figs

There was an increase of 258 tons over the previous year; none were shipped to eastern markets. The price on processed fell $18.00 per ton and $80.00 per ton on dried.

Grapes

The quality was good, color and sugar content normal, but price took a very sharp drop. The Tokay shipments to eastern markets increased 603,529 packages over the previous year with a decrease of

thirty cents per package. The tonnage of Tokays to wineries dropped 29,097 tons with a decrease of $3.45 per ton under last year. In juice grapes, shipping to eastern markets was 34,150 tons or a drop of 2,808 tons under the previous year. Also, the price dropped $30.00 per ton. Shipments of juice grapes to the winery totaled 118,559 tons, a decrease of 11,429 tons with a drop in price of $6.75. Growers enjoyed ideal harvesting conditions.

Olives

The acreage remained the same in the county with yield still low although slightly higher than the year before. The price was reduced drastically to about half or a $144.00 per ton drop.

Peaches

This crop, as a whole, was good in quality; however, brown rot and mildew was quite prevalent this year. Freestone shipping peaches increased 11,148 packages over the year before, also processed freestones increased 5,552 tons. However, in both cases prices declined. The relatively small tonnage of freestones for drying increased in price $100.00 per ton, but dropped 279 tons under last year. The cling peach tonnage decreased 8,520 tons and the price dropped $12.50 per ton.

Pears

Most of this crop went to the processors, a total of 923 tons. This represented an increase of 453 tons to the canners; however, the price dropped $50.00. 114 tons of pears were shipped to market.

Plums

Rains and frost at blossom time caused a sharp decline in yield in many varieties. There was a sharp decline of 96,018 packages in shipping plums. Market demands were very strong throughout the season. Price increased $1.75 per crate over last year.

Walnuts

Size was better than average; however, the cull out was about 50% greater due to heat damage. Also more worm damage was experienced. The tonnage for the county dropped 1,400 tons; also the price declined $30.00 per ton.

FIELD CROPS

Alfalfa Hay

In general, yield and quality for the year were both good. Prices were higher than last year with strong demands for hay throughout the season. The first and third cutting suffered some damage in color from weather conditions; however, losses were not too great. There was an increase of 7,084 acres over the previous year.

Beans

The bean acreage decreased 6,415 acres, with the largest acreage drop occurring in blackeyes and baby limas. Yields and quality were slightly lower than last season; however, bean growers, for the second year, enjoyed favorable weather conditions at harvest time.

Field Corn

The quality and yield were normal with prices remaining about the same as last season. Corn acreage increased approximately 2,025 acres over the previous year.

Grain Crops

Grain farmers experienced a very good season. The quality of barley, wheat, and oats was normal with market demands good all season. Barley and wheat acreage increased 24,120 with barley having the largest acreage increase of approximately 17,000 acres.

Hay

The total acreage of volunteer and grain hay continues to decrease, approximately 1,000 acres lower than last year. Quality and yields were normal with prices higher in 1952.

Pasture

The acreage growth of irrigated pastures in San Joaquin County has been phenomenal these past few years. In 1940, there were 17,898 acres of ladino clover. This crop has continued to increase to the present peak of 86,116 acres. This is an increase of 9,557 acres over last year. Range pasture conditions were normal with feed value being excellent.

Potatoes

Potato growers enjoyed an excellent season in all respects. Market prices were high and demands were very strong throughout the harvest period. The price per sack averaged $1.40 higher than the 1951 season. Quality and yield were good.

Rice

There was an increase of 1,781 acres over last season. Yields were good with prices per sack higher. There were some difficulties experienced by growers in harvesting their crop because of the rains in November; however, ideal weather which followed made it possible for the majority of growers to harvest these crops without too much trouble.

Sunflower

Yields of sunflower seed varied from field to field with good quality predominating. The average yield of 11 sacks per acre this year was the same as the previous season. The big change from last year in the sunflower crop was the increase of 1,593 acres.

Sweet Potatoes

Market demands during the harvest period were strong. The $3.50 per basket this year represented a fifty cent increase over the previous year. The quality, size and yield were normal.

VEGETABLE CROPS

Asparagus

Again in 1952, as in 1951, the cannery season got off to a slow start in the latter part of April. Intermittent cold periods slowed up production at times. There was a reduction of 4,125 tons of cannery asparagus from the 1951 season. Quality for the season was good; however, prices in both cannery and fresh shipments were lower. There was an increase of 226 bearing acres of asparagus over the 53,572 acres of last year.

Carrots

Most of the carrots went for fresh market produce. There was a slight increase in acreage; however, market demands were only fair with prices lower than last season.

Celery

Market demands for celery this year have been poor, resulting in low prices. Market prices declined from $2.40 to $2.10 per crate. The frosts of last November required more trimming of the celery which increased package cost. By the end of the year, 229 acres were still in the fields to be harvested. Celery acreage decreased 147 acres below the year before.

Melons

Growers enjoyed a long harvest and strong market demands all season. Price differed with the varieties of melons. Watermelons showed the largest price gain with an increase of $12.40 per ton over last year. The melon acreage decreased 489 under the 1951 acreage of 3,489 acres.

Onions

The onion acreage increased 422 acres over the previous year's 2,330 acres. Most of the crop went to fresh market. However, there were approximately 230 acres of onions which went to dehydration plants.

Peas

All of the pea crop went to the canners. The 1,470 tons to canners was an increase of 215 tons over the year before. Cannery prices were slightly lower this year.

Spinach

The spinach acreage remained about the same, with most of the crop going to processors. Yield and quality were practically the same as last year.

Strawberries

The county acreage increased 102 acres. Price and yield remained about the same as in 1951.

Tomatoes

The quality of the crop declined slightly. The major defects were sunburn and overripeness due to unusual hot weather in September. Growers again enjoyed a long harvest period. The yield per acre remained about the same as the year before. Since there was a decrease of over 8,276 acres of tomatoes in this county and a reduction of $5.00 per ton on the round tomatoes, the total overall value of the county's tomato crop dropped nearly 6½ million dollars to a 17½ million dollar crop.

FRUIT AND NUT CROPS
SAN JOAQUIN COUNTY
YEAR - 1952

CROP		BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Almonds		8,943	.61	5,455	Ton	$480.00	$ 2,618,400
Apricots	Ship.	1,153	4.55	5,246	28# Pkg.	1.50	7,869
	Proc.		3.90	4,497	Ton	80.00	359,760
	Dried		.07	81	Ton	600.00	48,600
Cherries	Royal	1,085	5.10	5,533	Ton	150.00	829,950
Other Cherries	Ship. Proc.	2,694	2.02 1.60	5,442 4,310	Ton Ton	370.00 150.00	2,013,540 646,500
Chestnuts		108	1.00	108	Ton	300.00	32,400
Figs	Ship.	410	.04	16	Ton	80.00	1,280
	Proc.		1.74	713	Ton	126.00	89,838
	Dried		.34	139	Ton	120.00	16,680
Grapes	Ship.	32,217	1.06	34,150	Ton	80.00	2,732,000
Juice	Wine		3.68	118,559	Ton	21.75	2,578,658
Grapes Tokay	Ship.	22,759	277.16	6,307,884	28# Pkg.	1.45	9,146 432
	Wine		5.15	117,209	Ton	17.15	2,010,134
Grapes All Other	Ship.	1,697	32.42	55,017	28# Pkg.	1.75	96,280
	Wine		5.75	9,758	Ton	20.00	195,160
Misc'l Orchards		188			Acre	200.00	37,600
Nectarines		79	550.00	43,450	28# Pkg.	1.35	58,657
Olives		373	1.25	466	Ton	110.00	51,260
Peaches Free	Ship.	2,210	113.80	251,498	20# Pkg.	1.25	314,372
	Proc.		6.18	13,658	Ton	53.15	725,923
	Dried		.17	376	Ton	400.00	150,400
Peaches Cling	Proc.	5,789	9.37	54,243	Ton	65.00	3,525,795
	Dried			5	Ton	240.00	1,200
Pears	Ship.	90	1.27	114	Ton	30.00	3,420
	Proc.		10.26	923	Ton	50.00	46,150
Plums	Ship.	878	100.00	87,800	28# Pkg.	3.95	346,810
	Proc.		.08	70	Ton	40.00	2,800
Prunes	Ship.	283	104.75	29,644	28# Pkg.	3.70	109,683
	Proc.		.37	105	Ton	220.00	23,100
Walnuts		11,935	.67	7,996	Ton	420.00	3,358,320
						TOTAL	$32,178,971

FIELD CROPS
SAN JOAQUIN COUNTY
YEAR - 1952

CROP	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Alfalfa Hay	61,460	6.50	399,490	Ton	$ 32.00	$12,783,680
Barley	87,230	19.00	1,657,370	CWT	3.15	5,220,715
Beans, Dry	13,365	14.35	191,788	CWT	10.50	2,013,774
Bean Straw	8,500	.75	6,375	Ton	18.00	114,750
Corn, Grain	13,580	1.25	16,975	Ton	70.00	1,188,250
Corn, Husks			198	Ton	600.00	118,800
Grain, Sorghum	2,165	20.00	43,300	CWT	3.25	140,725
Hay, Grain	8,000	1.50	12,000	Ton	27.50	330,000
Hay, Wild	12,470	1.25	15,587	Ton	25.00	389,675
Oats	9,510	8.50	80,835	CWT	3.50	282,922
Pasture — Range	203,180			Acre	4.00	812,720
Pasture — Clover	86,116			Acre	45.00	3,875,220
Pasture — Sudan Grass	1,850			Acre	35.00	64,750
Pasture — Stubble	126,055			Acre	1.50	189,082
Potatoes	5,214	336.00	1,751,904	CWT	3.75	6,569,640
Pumpkin — Canning	680	12.38	8,418	Ton	9.00	75,762
Pumpkin — Stock		10.00	6,800	Ton	3.00	20,400
Rice	9,975	38.00	379,050	CWT	5.75	2,179,537
Silage, Corn	1,585	16.50	26,152	Ton	8.00	209,216
Sugar Beets *	11,891	17.18	204,287	Ton	14.95	3,054,091
Sunflowers	3,490	11.00	38,390	CWT	8.50	326,315
Sweet Potatoes	1,005	225.00	226,125	Bskt	3.50	791,437
Wheat	11,985	11.25	134,831	CWT	3.75	505,616
					TOTAL	$41,257,077

* Includes Federal Subsidy

VEGETABLE CROPS
SAN JOAQUIN COUNTY
YEAR - 1952

CROP	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Asparagus Ship.	53,798	18.80	1,011,402	30# Pkg.	$ 3.95	$3,995,038
Asparagus Proc.		.71	38,197	Ton	191.45	7,312,816
Beets, Table	100	15.00	1,500	Ton	25.00	37,500
Broccoli	410	2.00	820	Ton	140.00	114,800
Cabbage	50	300.00	15,000	Pkg.	1.50	22,500
Cauliflower	17	300.00	5,100	Pkg.	1.50	7,650
Carrots	590	12.00	7,080	Ton	45.00	318,600
Celery	3,580	372.00	1,331,760	Pkg.	2.10	2,796,696
Corn, Sweet	600	160.00	96,000	Pkg.	1.75	168,000
Cucumbers	223	5.10	1,137	Ton	48.15	54,747
Garlic	4	100.00	400	CWT	15.00	6,000
Lettuce	120	225.00	27,000	Pkg.	1.75	47,250
Melons Cranshaw	140	9.00	1,260	Ton	35.50	44,730
Melons Cantaloupe	360	175.00	63,000	Pkg	1.85	116,550
Melons Casaba	480	7.00	3,360	Ton	20.00	67,200
Melons Honeydew	300	6.00	1,800	Ton	25.00	45,000
Melons Persian	40	9.00	360	Ton	25.00	9,000
Melons Watermelon	1,670	14.50	24,215	Ton	32.00	774,880
Onions Early	1,495	550.00	822,250	50# Sk.	1.75	1,438,937
Onions Late	1,257	600.00	754,200	Sk.	1.90	1,432,980
Peas Proc.	980	1.50	1,470	Ton	70.60	103,782
Peppers	244	12.15	2,965	Ton	74.90	222,078
Spinach	903	5.00	4,515	Ton	25.00	112,875
Squash	405	10.00	4,050	Ton	18.00	72,900
Strawberries	510	1,160.00	591,600	12 Bskt.	2.30	1,360,680
Tomatoes Ship.	32,760	38.96	1,276,330	32# Pkg.	2.50	3,190,825
Tomatoes Round		16.00	524,160	Ton	25.00	13,104,000
Tomatoes Pear	2,550	16.00	40,800	Ton	30.00	1,224,000
Truck Garden Misc'l Vegetables	980			Acre	250.00	245,000
					TOTAL	$38,447,014

SEED CROPS
SAN JOAQUIN COUNTY
YEAR - 1952

CROP	BEARING ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	F.O.B. VALUE PER UNIT	F.O.B. VALUE TOTAL
Alfalfa Seed	882	533.00	470,106	Lb.	$ .38	$ 178,640
Asparagus Roots	250			Acre	420.00	105,000
Asparagus Seed			6,000	Lb.	2.00	12,000
Beans:						
*Blackeyes Certified Seed						28,500
*Dark Red Kidney Certified Seed						157,000
*Light Red Kidney Certified Seed						960,000
*White Kidney Certified Seed						13,000
Cantaloupe Seed	7	1,000.00	7,000	Lb.	.48	3,360
Castor Bean Seed	69	2,063.00	142,347	Lb.	.10	14,235
Ladino Clover Seed	2,356	169.00	398,164	Lb.	.90	358,348
Millet Seed	140	1,500.00	210,000	Lb.	.05	10,500
Grape Vines						11,835
Nursery Other Trees						175,000
						122,500
Onion Seed	8	400.00	3,200	Lb.	1.00	3,200
Popcorn Seed	18	1,670.00	30,060	Lb.	.08	2,405
Potato Seed	767	267.00	204,789	CWT	5.00	1,023,945
Safflower Seed	931	1,235.00	1,149,785	Lb.	.048	55,189
Squash Seed	25	213.00	5,325	Lb.	.42	2,236
Sudan Grass Seed	530	11.00	5,830	CWT	11.00	64,130
Watermelon Seed	59	319.35	18,842	Lb.	.29	5,464
					TOTAL	$3,306,487

* Accurate prices and production figures are not available at this time. Total income for these four crops is estimated.

PERMANENT CROPS IN SAN JOAQUIN COUNTY
YEAR - 1952

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
ALMONDS		
Drake	2	364
Eureka	0	1
I.X.L.	0	111
Jordanola	298	516
Mission	354	3,241
Ne Plus Ultra	76	526
Non Pareil	668	3,791
Peerless	36	349
Other	3	44
Total	1,437	8,943
APPLES		
Astrachan	0	10
Golden Delicious	0	0
Other	0	2
Total	0	12
APRICOTS		
Blenheim & Royal	11	642
Moorpark & Hemskirk	0	8
Tilton	82	502
Other	0	1
Total	93	1,153
CHERRIES		
Bing	247	1,576
Black Republican	1	27
Chapman	11	156
Lambert	20	267
Royal Ann	192	1,085
Tartarian	45	592
Other	56	76
Total	572	3,779
CHESTNUTS (All)	3	108
FIGS		
Black	0	31
Kadota	0	379
Total	0	410
FILBERTS (All)	0	1

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
GRAPES (Raisin)		
Muscat	0	201
Thompson Seedless	54	646
Zante Currant	0	8
Total	54	855
GRAPES (Table)		
Cardinal	27	12
Concord	0	6
Emperor	0	205
Malaga	0	107
Ribier	0	150
Tokay	266	22,759
Other	0	412
Total	293	23,651
GRAPES (Wine)		
Alicante	2	5,067
Burger	0	926
Carignane	226	7,762
Colombar	0	30
F. Reisling	0	10
Golden Chasselas	0	80
Grenache	2	982
Mataro	0	31
Mission	10	1,783
Palomino	0	1,138
Petite Sirah	0	382
Sauvignon Blanc	0	23
Zinfandel	61	13,179
Other White	0	148
Other Dark	35	676
Total	336	32,217
NECTARINES		
John Rivers	2	15
Other	16	64
Total	18	79
OLIVES		
Ascalono	0	74
Manzanillo	45	85
Mission	19	198
Other	0	16
Total	64	373

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
PEACHES (Cling)		
Andora	29	111
Carolyn	10	70
Cortez	117	41
Fortuna	36	182
Gaume	220	1,063
Gomes (Stuart)	111	461
Halford	208	1,328
Johnson	0	125
Libbee	0	52
Palora	236	1,101
Peak	17	212
Phillips	4	474
Sims	0	79
Walton	18	57
Other	130	433
Total	1,136	5,789
PEACHES (Free)		
Babcock	1	4
Crawford	0	3
Early Elberta	7	21
Elberta	174	924
J. H. Hale	21	158
Lovell	1	280
Muir	0	170
Salway	1	20
Other	88	630
Total	293	2,210
PEARS		
Bartlett	43	85
Beurre Hardy	0	5
Total	43	90
PERSIMMONS (All)	0	8

CROP & VARIETY	NON BEARING ACREAGE	BEARING ACREAGE
PLUMS		
Beauty	0	3
Burbank	0	10
Climax	0	8
Duarte	16	108
Grand Duke	0	3
Kelsey	0	9
President	3	104
Santa Rosa	41	240
Tragedy	12	231
Wickson	0	3
Other	52	159
Total	124	878
PRUNES		
French	0	41
Imperial	0	2
Robe DeSergeant	0	9
Sugar	10	231
Total	10	283
QUINCES (All)	0	11
WALNUTS		
Concord	3	47
Eureka	173	2,896
Franquette	220	3,172
Hartley	504	159
Mayette	9	744
Payne	349	4,589
Placentia	0	87
Other	67	159
Seedling	152	82
Total	1,477	11,935
BLACK WALNUTS	544	156
ASPARAGUS	6,829	53,798

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

BEARING ACREAGE

CROP	YEAR 1937	YEAR 1942	YEAR 1947	YEAR 1952
Almonds	3,760	4,760	7,264	8,943
Apples	32	31	36	12
Apricots	1,776	1,718	1,890	1,153
Cherries	4,485	4,173	4,134	3,779
Chestnuts	224	171	150	108
Figs	524	510	510	410
Grapes, Juice	34,167	31,792	31,937	32,217
Grapes, Raisin	902	991	863	855
Grapes, Table	1,627	1,381	1,205	892
Grapes, Tokay	17,474	17,350	18,960	22,759
Olives	365	351	351	373
Nectarines	116	157	185	79
Peaches, Cling	3,549	3,484	5,207	5,789
Peaches, Free	2,852	3,068	3,135	2,210
Pears	399	135	142	90
Persimmons	5	12	14	8
Plums	1,655	1,265	1,108	878
Prunes	1,372	883	714	283
Walnuts	8,580	9,355	9,548	11,935

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

BEARING ACREAGE

CROP	YEAR 1937	YEAR 1942	YEAR 1947	YEAR 1952
Alfalfa Hay	39,324	43,846	54,223	61,460
Barley	101,913	102,603	83,676	87,230
Beans, All	37,562	24,782	14,373	13,365
Corn, Grain	20,395	17,280	11,551	13,580
Flax Seed	4,281	285	286	0
Grain Sorghum	16,208	7,078	2,811	2,165
Hay, Grain	27,465	17,357	21,821	8,000
Hay, Wild	11,014	15,683	15,009	12,470
Oats	10,090	13,135	9,051	9,510
Pasture, Range	210,120	210,000	225,748	203,180
Pasture, Ladino Clover	9,241	23,831	44,078	86,116
Pasture, Sudan Grass	3,974	2,992	2,217	1,850
Potatoes	10,962	7,783	5,539	5,214
Pumpkins	448	869	887	680
Rice	3,377	2,892	4,032	9,975
Silage Corn	2,277	1,966	1,019	1,585
Sugar Beets	12,161	18,769	6,250	11,891
Sunflowers	5,861	1,863	1,533	3,490
Sweet Potatoes	1,287	1,608	1,672	1,005
Wheat	48,020	24,193	16,970	11,985

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

BEARING ACREAGE

CROP	YEAR 1937	YEAR 1942	YEAR 1947	YEAR 1952
Asparagus	24,478	34,742	43,759	53,798
Beets, Table		88	20	100
Broccoli	50	101	12	410
Cabbage	150	250	71	50
Cauliflower	100	150	32	17
Carrots	302	1,028	480	590
Celery	6,233	5,831	4,453	3,580
Corn, Sweet	350	542	368	600
Garlic	30	30	16	4
Lettuce	200	88	102	120
Melons, All	2,632	1,338	2,960	2,990
Onions	1,146	2,206	2,517	2,752
Peas	1,972	2,308	1,471	980
Peppers	50	50	60	244
Spinach	1,067	1,638	931	903
Squash	470	150	232	405
Strawberries	89	45	73	510
Tomatoes, Round	5,032	10,676	32,972	32,760
Tomatoes, Pear	5,895	12,718	1,995	2,550

SAN JOAQUIN COUNTY
YEAR - 1952

APIARY PRODUCTS

Honey	732,000 Lbs.	@	.105	$ 76,860.00
Bees Wax	7,010 Lbs.	@	.42	2,944.00
Queen Bees	7,600 Queens	@	.95	7,220.00
Pollenziation	6,505 Colonies	@	3.55	23,093.00
			Total	$ 110,117.00

DAIRY PRODUCTS

Milk and Milk Products	$ 14,834,200.00

LIVESTOCK

Beef Cattle and Calves	$ 17,026,575.00
Hogs	2,220,597.00
Sheep and Wool	2,917,988.00
Total	$ 22,165,160.00

POULTRY

Chickens	$ 591,388.00
Eggs	2,622,012.00
Turkeys	926,339.00
Total	$ 4,139,739.00

SUMMARY

Fruit and Nut Crops	$ 32,178,971.00
Field Crops	41,257,077.00
Vegetable Crops	38,447,014.00
Seed Crops	3,306,487.00
Apiary Products	110,117.00
Dairy Products	14,834,200.00
Livestock	22,165,160.00
Poultry Products	4,139,739.00
GRAND TOTAL	$ 156,438,765.00