

ANNUAL REPORT

of the

*Agricultural Commissioner*

COUNTY OF SAN JOAQUIN

Year 1936



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Agricultural Commissioner

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SAN JOAQUIN COUNTY AGRICULTURAL COMMISSIONER

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## APIARY

THERE HAS BEEN a marked reduction of bee diseases in San Joaquin County. For several years the bee keepers were without the services of a bee inspector, and these diseases built up at an alarming rate. This is the second season of bee inspection since this service was renewed. The following chart shows conclusively that bee inspection pays.

INSPECTION	1935	1936
Apiaries Inspected	253	351
Colonies Inspected	11,886	9,600
Colonies infected with American Foulbrood	584	208
Colonies infected with European Foulbrood	249	98

In addition to the regular inspection work, there were seventy-five swarms killed in buildings, where they were disagreeable to the occupants.

Permits were issued to the following number of bee-keepers for bees that were moved:

MOTION	APIARIES	COLONIES
Leaving County	22	1,978
Moving within County	116	1,400
Entering County	17	2,363

## BIRD DAMAGE AND CONTROL MEASURES

DURING 1936 heavily concentrated attacks by Horned Larks on slightly over eight hundred acres of young seedlings resulted in a known loss of approximately one hundred-fifty acres of beans, one hundred acres of lettuce and twenty acres of peas. At the request of owners, control measures were carried on over this area, using recommended methods of the United States Biological Survey, and in nearly all cases further damage was prevented. Undoubtedly this control work definitely eliminated many larks, which would later have caused similar damage to other plantings.

Linnet and sparrow control by this office was confined to small and generally isolated areas, where the damage was sufficiently severe to justify action, and the results obtained were excellent in each such case.

## EGGS

THE ENFORCEMENT of egg standards were turned over to the State Department of Agriculture and County Agricultural Commissioners. Concerted action by these authorities has brought a decided improvement in the quality and marking requirements. Egg inspection was not started in San Joaquin County until June, and since that time there has been a gradual decrease in the number of rejections.

EGG INSPECTION BY MONTHS

MONTH	NUMBER INSPECTED	DOZENS INSPECTED	DOZENS REJECTED	UNFIT FOR FOOD	QUALITY MIS-MARKED	WEIGHT MIS-MARKED	REQUIRED MARKINGS LACKING
June	31	1,629	481	257	27	197	
July	156	4,522	491	271	82	122	16
August	211	9,008	283	53	29	91	110
September	148	4,827	163	63		30	70
October	219	7,956	15	15			
November	89	2,828	15				
Totals	854	30,770	1,448	659	138	440	211

FAIRS AND EXHIBITS

SAN JOAQUIN COUNTY, using as the main feature at the California State Fair, and the Los Angeles County Fair a huge revolving top, lived up to its reputation as the "Top County". Around the base of the top were various miniature panoramic scenes typifying important industries and sports of this region. Encircling this were all the products of this County artistically arranged in boxes, jars and baskets, placed upon a raised platform on a background of blue cellophane.

The vegetable displays were again outstanding. Using a special sprinkling system of cold water, the products were kept as fresh as the day they were gathered.

The wine display was placed on two corners of the exhibit, and the bottles pyramided to a height of ten feet. Bottles were also placed among the grapes.

At the California State Fair, the County won sweepstakes in plums, grapes, apricots and nectarines, almonds, grains, field and garden seeds, root vegetables and melons and squash; tied for first sweepstakes in beans; and second sweepstakes in peaches, walnuts, dried fruit and plant vegetables. There were a total of 270 ribbons won, 127 of which were first.

On the wine display the County took one gold medal, three silver medals and one bronze medal on dry wine; three gold medals, two silver medals and three bronze medals on sweet wines; one gold medal and one bronze medal on brandy; three gold, two silver and one bronze medal on supplementary wines; and one gold and one silver medal on sparkling wines.

At the Los Angeles County Fair the County won first booth award, and many sweepstakes and awards.

At the San Diego County Fair, a cottage setting was used. The farm products were placed in an artistic arrangement in the garden of the cottage. Here again the County excelled.

At the San Joaquin County Fair, the Agricultural Commissioner, Superintendent in Charge of the Agricultural Display, again used the Spanish Mission Setting of

the previous year. Additional touches were made which added to the attractiveness of the building.

An educational exhibit was used at the Lodi Grape and Wine Festival. Also a float using an immense market basket filled with and surrounded by San Joaquin products was prepared for the parade.

### FRUIT, NUT AND VEGETABLE STANDARDIZATION

THE AGRO CULTURAL COMMISSIONER assists the farmers to build up a reputation for their farm products and protects their markets by instructing them as to the proper grading and packing of their fruit, nuts and vegetables as prescribed by the Agricultural Code. It is not the purpose of this office to arrest and bring undue pressure on those who have violated the provisions of this Code, but sometimes this becomes necessary on frequent offenders and others unwilling to abide by these provisions.

#### INSPECTION AT POINT OF ORIGIN AND AT TIME OF PACKING:

Number of inspections	(carloads)	3,676
Number of rejections		198
Number of packages destroyed		64
Number of packages reconditioned or remarked for sale or to by-products		12,644

In addition to the above, 5,740 carloads of grapes were accurately reported on daily during the shipping season to provide information to grape growers. This is of great importance to Tokay Grape growers, as Lodi is the center of production, and most shipments of this variety originate in this district.

Three arrests were made for violations of this act at point of origin. Two arrests were for selling low grade potatoes, each offender paying a fifty dollar fine and given a twenty day suspended sentence. The other offender was apprehended for deceptively packed cherries, for which he was fined seventy-five dollars.

HIGHWAY STATION INSPECTIONS: In cooperation with the State Department of Agriculture a station for the stopping and inspecting of trucks hauling nuts, fruits and vegetables was again maintained near Tracy on the State Highway. An accurate account of the amount of produce inspected, rejections and arrests is kept by the Department.

#### WHOLESALE MARKET OR DESTINATION INSPECTIONS:

Number of inspections, Carloads	747
Number of rejections	33
Number of packages dumped by Court order or owner	55
Number of packages reconditioned or re- marked for sale or to by-products	1,910

INSPECTION OF RETAIL STORES, PRODUCE STANDS AND RETAIL DEALERS: An accurate account is not kept of the total number of inspections at these points, as our inspectors make frequent visits at these places and make general inspections of the produce.

Number of rejections	34
Number of packages dumped by Court Order or owner	33
Number of packages recond- itioned or remarked for resale or to by-products	1,194

#### INSECTS AND MITES

GRASSHOPPERS: An outbreak of grasshoppers occurred along the eastern slope of the County. Grasshoppers, which hatched on pasture lands, moved into the adjoining cultivated crops, and did a noticeable amount of injury before they were checked. The species was identified as the devastating grasshopper (*Melanoplus devastator*). The principal crops attacked were walnuts, beans, grains, Sudan grass, tomatoes and sugar beets.

The first attack was in the Bellota Section along the Calaveras River. Attempts were made to check their advance by burning. Later, applications of poison bran mash were made. When the seriousness of the invasion was realized, a voluntary assessment of twenty-five cents an acre was made upon those adjoining or within limits of invasion to defray expenses. Sodium Arsenite was furnished by the County.

Later, grasshoppers moved into the cultivated crops along the Mokelumne River near Clements. The same program was used as followed in the Bellota Section. Fifteen tons of bran were shipped into this County by the Federal Government to be used for control. It was not received until most of the control work had been accomplished and only a small portion was used.

GRAPE LEAF HOPPER: There was a noticeable increase of grape leaf hoppers this fall. Practically no control work was done to reduce the spring population.

FIELD CRICKETS: Several asparagus fields were attacked by crickets in February and March, when the crop first started to make its appearance. Young shoots were cut off and damaged at the surface.

DARKLING GROUND BEETLE: A number of tomato fields were attacked soon after the young plants were put out. Considerable amount of replanting was necessary. Calcium arsenate and poison bran were used for control. This office recommended poison bran. Some injury occurred from burning where calcium arsenate was used.

CHERRY SLUGS AND CANKER WORMS: A number of cherry growers used arsenate of lead for control of these pests before the crop was harvested, the use of which was contrary to the recommendations of this office. Officials of the Pure Food and Drug Administration found many lots of fresh cherries having in excess the tolerance of lead and arsenic allowed. Cherries were dipped in a weak hydrochloric acid solution to remove the residue. The State Department of Agriculture set up a laboratory in Stockton for making tests and certifying lots of cherries.

ELM LEAF BEETLE: Several trees in Stockton were found infested with this insect. This was the first infestation found here. Infestations in outlying districts continue to increase and become more severe. Trees

on City and County property are sprayed by the City and County respectively. Introduced parasites from Europe were liberated at several locations by the State Department of Agriculture.

CODLING MOTH IN WALNUTS: Walnuts, particularly of the Payne variety, were attacked, sections of some orchards running as high as twenty per cent wormy nuts. The same general trend of increase, which occurred in orchards in Southern California, appears to be taking place in our Walnut section.

CUCUMBER BEETLES: There occurred the heaviest infestation of these insects that has been observed. Their general distribution and feeding habits makes it difficult to estimate the damage done. Potato leaves were riddled, blossoms of apricots and beans were destroyed, and fruit of cherries, early peaches and apricots were punctured. Control practice was limited although some use was made of hydrated lime and sodium fluosilicate.

FALSE CHINCH BUG: Great numbers of these insects were seen throughout the County, particularly on dry grasses. Occasionally some damage was done to green vegetation.

BEET ROOT APHIS: Severe infestations were observed in beet fields in the Delta region. This may account for lower yields than were expected. Growth of sugar beets during the spring and early summer was excellent. Later they appeared to stop growth prematurely. The general consensus of opinion was that this was caused by hot weather.

PEACH TWIG BORER: Seasonal conditions were favorable for a general increase of these insects. Injury to peaches, plums and apricots was more general this year.

BLACK BEAN APHIS: Some fields of black-eye beans were severely attacked. No control work was done. A build up of natural enemies brought them into check.

PACIFIC MITE: This pest occurs every year, particularly in vineyards, over wide areas, although severity was about normal. Attacks are due to a deficiency of moisture, brought about by actual drought, a cutting off of feeder roots by late cultivation, the occurrence of nematode on feeder roots which restricts the flow of plant fluids, or a high water table, which interferes with the proper functioning of the plant, or a combination of these factors. A plow sole favors the first three factors.

#### NURSERIES

DURING THE FALL AND WINTER: all the nurseries were inspected and found to be free from serious pests. Slight infestations of mealybugs, scale insects and aphids were found, which were properly sprayed.

#### ORCHARD AND FIELD INSPECTION

MANY FARM COMMODITIES, particularly root crops, require field inspections to determine their freedom from insect, disease and weed pests. Other states and districts within this state require certification of shipments, stating that the commodity is apparently free from certain pests, as determined by field inspection. Examples are celery, carrots, etc., being shipped to Oregon,

which require a certificate as to their freedom from vegetable weevil and nematode; potato shipments to Shafter, certifying their freedom from nut grass; and early potatoes to Oregon and Washington, certifying their freedom from potato tuber moth.

Inspectors also make general inspections of orchards and fields and discuss various problems with the farmers. Their knowledge of conditions throughout the County make them well qualified in helping to solve these problems.

#### PLANT DISEASE CONTROL

THIS OFFICE is particularly interested in plant diseases from a quarantine standpoint. The State law directs the agricultural commissioner to acquaint himself with various diseases of plants and to prevent their introduction and spread within the County. Also, to provide for their control or eradication when they become established in the County.

The following discussion of plant diseases does not mention all those which caused an economic loss to crops in this county. It does mention, however, those established in the county, whose control, eradication and prevention of spread programs are being carried out. It also mentions diseases causing a high economic loss or attracting unusual attention.

The continuation of the chestnut blight (*Endothia parasitica*) eradication program was the major plant disease project of this year. A complete resurvey, tree to tree inspection of the 297 known plantings of chestnuts in the County, showed no new infections outside of the two orchards found to have diseased trees in 1934. Thirty-five trees were found to be infected with this fungus, and were burned during the year, bringing the total number of infected trees found in the two orchards up to 89.

Spread in the two orchards can be attributed to infected pruning tools, cultivating implements, and irrigation water. Success of the eradication program depends upon (1) disinfection of pruning tools after pruning each tree, (2) avoidance of injury to the crown by the cultivating tools, and (3) creation of an earth basin around each tree to prevent direct contact of trunk and irrigation water, coupled with (4) inspection to find and destroy infected trees as soon as possible. With time and careful attention to all details, this procedure will result in eradication of the disease.

Members of the staff spent ninety-three and one-half working days on this project during the year.

Due to the Texas Mosaic infection in the peaches in certain Counties of the southern part of the state, a tree to tree inspection of all peach trees shipped into San Joaquin County from Southern California since 1930 was made. In addition, numerous orchards were scouted for the disease. No infection by this virus has been found in the County.

Peach rust was epidemic in the County for the first time since 1929. Marked varietal difference in susceptibility was observed. Homestead, Walton, Halford, Palora and Gaume were most severely attacked.

Peach blight (*Coryneum* blight) has built up in some orchards, due to an ineffective fall spray program. One planting of Mayflower had a very light bloom despite excellent coverage in a well timed fall spray. In this case cankers on older wood continued to furnish a source of infection.



Again this summer, brown rot attacked the ripening peaches in some orchards. The fungus caused severe loss of wood in these orchards, growing from the fruit into adjacent wood and girdling the twig growth.

Celery fusarium yellows, a disease serious in self blanching varieties, continues to spread throughout the delta. The virus known as Aster Yellows caused nominal loss. Calico or "Delta" mosaic was found, but no commercial loss was noted, being less prevalent than in 1935.

The delta corn crop suffered from both corn smut (*Ustilago zeae*) and dry ear-rot (*Fusarium moniliforme*)

Southern root rot (*Sclerotium rolfsii*) caused nominal loss in two fields in the County. No new infestations were found. Quarantine measures, coupled with planting non-host crops on infected ranches are expected to keep this disease checked.

The important tomato crop was freer of disease than in several years. Western Yellow Blight, the virus disease causing curly top in sugar beets, caused a 10% loss in the French Camp District, increasing to 25% in the area along the Stanislaus River. Damage in the rest of the County was normal. Bacterial canker caused a 25% to 100% loss in the new fields where it appeared. Tobacco mosaic virus was general in tomato fields despite warning to growers to avoid smoking when handling plants.

Use of bordeaux and mercury compounds were effective in stopping losses from damping off fungi. The continual rains during February made conditions ideal for the damping off fungi. *Phytophthora* caused loss in beds in the delta.

*Verticillium* caused loss in three young almond orchards. Tomatoes had been planted the previous year in each case.

Walnut dieback was severe in the spring of 1936. This is attributed to an excessive drying out of the twigs in the older trees during the hot, dry weather of September and October of 1935, or to the freezing of succulent wood on the young trees which had not gone into dormancy when caught by the killing frost in early November of 1935. Most of the trees recovered as the season advanced.

Nematode (*Heterodera marioni*) caused losses greater than the previous year due to the warm summer. In particular, tomatoes which were planted for the second or third successive season on infected ground suffered severely. Several thousand plants were condemned in beds due to nematode infection. Due to the increase in tomato acreage, new growers, unaware of the seriousness of nematode, have established their beds on infected soil, or rented infected land, causing severe losses.

The soil inhabiting Oak Root Fungus (*Armillaria mellea*) continued to cause loss of individual deciduous trees. *Dematophora*, a similar fungus, has been found infecting a privet hedge.

#### PLANT QUARANTINE

THE PURPOSE OF PLANT QUARANTINE

is to prevent the introduction and spread within the State of pests injurious to the agricultural industry of the State.

INSPECTION OF INTERSTATE SHIPMENTS:

Number of shipments inspected	2,437
Number of parcels inspected	685,820
Number of shipments rejected	11
Number of parcels rejected	36

INSPECTION OF INTRASTATE SHIPMENTS OF NURSERY STOCK:

Number of shipments inspected	2,106
Number of plants inspected	358,888
Number of shipments rejected	190
Number of plants rejected	10,825

REASON FOR REJECTION: Shipments were rejected principally for the presence of nematode, crown gall, bacterial gummosis, mealybug and scale insects. A few shipments were rejected where there was reasonable cause to presume they were infested or infected with insect or disease pests. Other shipments rejected were entering the County in violation of specific plant quarantine.

RODENT CONTROL

THE FOLLOWING MATERIALS were sold and distributed under the supervision of this office.

Strychnined grain	9,550 lbs.
Thallium grain	4,188 lbs.
Strychnined corn	100 lbs.
Thallium corn	50 lbs.
Carbon Bisulphide	6,000 gallons
K. R. O.	119 ounces.

Total acres treated 312,751

Crows from the S. R. A. camp were used on large ranches and irrigation districts for rodent work. The farmers paid for materials used and the foreman's wages.

Rats were again serious in the delta district. These live in the levees and migrate out into the fields destroying the tender germinating corn.

SEED INSPECTION

THE CALIFORNIA SEED LAW is strictly a labeling provision and gives authority for rejecting seed only when mislabeled. In addition to this, the Agricultural Commissioner rejects seed under authority of the Agricultural Code, which provides for the prevention of the spread of pests throughout the State. Any seed offered for planting purposes may be rejected by the Agricultural Commissioner if it is infested with any weed seed, which he feels would be a menace to agriculture in his County.

In September of this year, there was added to the staff of this office a laboratory technician, whose chief duty is to examine seeds for planting purposes and determine their freedom from noxious weeds. Germination tests are also made

when requests come in for this service.

Samples of seeds, up until recently, were taken from seeds transported into the County, and arriving at known destination points. Also samples were taken at the various seed stores. The policy now adopted is not only to take samples at these points, but to also take samples from the farmer. Inspectors traveling through their district can usually determine where new plantings will occur, as several weeks are generally required to prepare the ground, especially for alfalfa and ladino clover.

The following lots of seeds were examined for noxious seeds during 1936.

KIND OF SEED	*NUMBER OF EXAMINATIONS	LOTS PASSED	LOTS REJECTED	REASONS FOR REJECTIONS
Alfalfa	61	52	9	Russian Thistle, dodder, creeping mallow, Johnson Grass.
Barley	4	3	1	Morning Glory.
Bermuda Grass	2	2	0	
Bent Grass	3	3	0	
Clover, Burr	4	3	1	Tocalote
Clover, Trifolium repens	28	22	6	Nut grass, dodder, Canadian thistle, Russian thistle.
Clover, Sweet	14	10	4	Russian Thistle, Canadian Thistle, Poverty weed.
Clover, Red	1	1	0	
Canary grass	1	1	0	
Harding grass	1	1	0	
Kentucky Blue Grass	8	8	0	
Mustard	1	1	0	
Oats	2	2	0	
Orchard grass	1	1	0	
Poa Trivialis	1	1	0	
Radish	5	5	0	
Rutabaga	1	1	0	
Eye Grass	5	5	0	
Spinach	10	10	0	
Sudan Grass	5	5	0	
Sunflower	2	2	0	
Sugar Beet	2	2	0	
Swiss Chard	1	1	0	
Turnip	4	4	0	
Vetch, Common	1	1	0	
Vetch, Purple	2	2	0	
Wheat	2	2	0	
Total	172	151	21	

\* Seventy-two lots were examined by the State Seed Laboratory at Sacramento. In addition to the above examinations, five lots of seeds were held for official labeling by the State Seed Laboratory. Two of the lots were labeled, but the germination percentage as expressed on the label was found to be incorrect.

## WEED CONTROL

FARMERS ARE BECOMING more weed-minded. Their attention has been frequently directed by this office, the State Department of Agriculture, and other authorities, to the seriousness of weeds. They realize that there is a gradual encroachment of weeds upon their land, where no effort is made to bring them into check.

The weed committee of the San Joaquin County Farm Bureau felt that weed control was important enough to require the full time of one man in this County to investigate and carry on a concerted weed control and eradication program. The Board of Supervisors appropriated funds and directed the Agricultural Commissioner to appoint a weed expert.

MUSTARD: Over one thousand acres of grain crops were sprayed this season with a ten to fifteen per cent sulfuric acid solution for the control of mustard and wild radish. Most of the spraying was done in the Delta, where these weeds are especially serious. Three fields were sprayed by this office as demonstration plots. Increased yields and quality were outstanding. Yields showed an average twenty-five per cent increase. Quality was improved by the increased weight per bushel, cleaner and less stain. Cost of harvesting was reduced because of the cleaner fields.

MORNING GLORY: One farmer in the Tracy district used sixty-six drums of activated carbon bisulphide for the control of morning glory. A tractor-drawn injector designed by the Stauffer Chemical Company was used. Results were very satisfactory. Other farmers in the Tracy District used smaller amounts of carbon bisulphide for spotted infestations, applying the material with a hand injector.

HOARY CRESS: The most practical method of control is flooding the areas where this pest is most common. This was demonstrated last year where good results were obtained in an one hundred twenty acre field. Chemical control has not proved very satisfactory. Grain fields are carefully watched during harvest periods to see that harvesters are thoroughly cleaned, and that infested grain is properly disposed of.

PUNCTURE VINE: All the roads in the County are continually patrolled during the summer and fall months. Infestations are sprayed with diesel oil, and later, burned. There has been a noticeable reduction of roadside infestations.

YELLOW STAR THISTLE: Infestations vary throughout the County. Some districts are heavily infested and it is difficult to have control work practiced. Other districts, where slight infestations occur, cooperation is easily secured in control work, which consists of cultivation, hoeing and burning.

W. P. A. A continuation of roadside weed control work in cooperation with the Works Progress Administration of the Federal Government was carried on this year. Many miles of roadsides, which were not disced, were cleaned of weeds.

JOHNSON GRASS: This is a serious noxious weed. Spotted infestations occur throughout the County. Various factors enter into the proper procedure of control, a knowledge of which is required. Because of these factors, enforced work is not practiced. However, when the appointment of a weed man is made, this procedure will be followed. The same is true of other perennial noxious weeds. Inspectors continually work with farmers on these problems of control, and in many cases, have done excellent work.

ROADSIDE DISCING: A decided decrease in weeds, insect and disease pests, and fires has been brought about by roadside weed control. Eight hundred miles of county roadsides maintained by the County Highway Department and Supervisors, and under the direction of this office, were kept free from weeds by the use of tractors and discs. The general appearance of the agricultural districts has been improved. The cost of this work is exceedingly low, as compared to oil and burning.

Particularly noticeable is the reduction of noxious weeds. Puncture vine infestations are easily seen and destroyed on roadsides, which are free from other weeds. Patrol crews cover many miles of roads each day, and oiling and burning of this weed pest is greatly facilitated. Russian Thistle at one time was a common occurrence on all the roads in the southern part of the County. Only an occasional plant is now seen, particularly on those roadsides bordering cultivated land. Citron melon, which crosses with watermelon and makes the meat unpalatable, is becoming less widely distributed. Bermuda grass, fog weed, lamb quarters, yellow star thistle, and other weeds have been reduced.

Insect and disease pests have been noticeably lessened. Red Spider, which at one time attacked and defoliated five thousand acres of grapes in the Manteca District, is gradually losing its foothold. Grape leaf hopper, another grape pest, is not as serious, particularly in those vineyards bordering roadsides, where farmers have cooperated in removing fences. Beet leaf hoppers, which feed on Russian Thistle, Atriplexes, and other favorite host plants, now find their food supply less abundant. Consequently a reduction of tomato yellows, curly top of sugar beets, melon blight, and other diseased crops is seen. The beet leaf hopper is a carrier of the serious virus disease, which causes this sickness of plants.

Since roadside weed control was started in 1931, no fires have originated from roadsides which were disc'd. Instances have been cited where fires have started on the few weeds growing close to the roadside, but were unable to jump the gap. One farmer stated that he was away over the week-end and when he came home noted where a fire had started, but was unable to jump the cultivated area. His home and ranch were thus saved from what might have been a serious conflagration.

The general appearance of the countryside has been improved. Many miles of fence line have been removed where they were of no benefit, and the land is now kept clean to the edge of the road. Where fences are required many farmers keep their fence lines free of weeds. Old broken down automobiles and their parts, tin cans and other junk along the roads, are removed to facilitate roadside discing.

The cost of roadside discing is not comparable to oiling and burning. One fire strip on each side of the road, using oil and later burning, costs approximately \$75.00 a mile. Roadside discing this season cost \$10.00 a mile and included from fence line to road shoulder on each side of the road. Some roads

were disced four times and most roads were disced at least twice. The cost of \$10.00 a mile was calculated on the basis of a full season and not on one treatment.

CAMEL'S THORN: A small infestation of camel's thorn was found in the County. This is an exceptionally serious perennial weed spreading from long underground roots which send up suckers very much as elm trees sucker. This infestation was treated by using a weak solution of arsenic in jars and inserting the growing parts into the jar. This is known as the jar method of weed control and works satisfactorily on some weeds.

MATERIALS USED: The following is the amount of materials handled by the Agricultural Commissioner for chemical weed control throughout the County for the year 1936:

Diesel Oil	4515 gallons
Sodium Chlorate	4000 pounds
Carbon Bisulphide	4660 gallons
Arsenic Trioxide	50 pounds
Sulfuric Acid	16,500 pounds

In addition to the above, approximately 200,000 pounds of sulfuric acid, 70,000 gallons of diesel oil and 30,000 pounds of Atlacide were used by other agencies.

## STATISTICS

The following annual report is the third one issued by this office in cooperation with Federal Projects. Prior to this time annual statistical reports were not accurate. Acreages and valuations were estimated.

The annual statistical reports of 1934, 1935 and 1936 are very accurate. Farm to farm surveys are made by the inspectors each year to secure acreages and valuations of crops. This information is compiled by government workers on relief to whom much credit must be given for their accuracy.

## CROP SUMMARY

San Joaquin County farmers have just finished the best year they have had for several seasons. Crops have been better than average and prices have materially advanced with a few exceptions.

Weather conditions on the average have been satisfactory. Spring frosts were not severe enough in this County to do a large amount of damage. Rains, which flooded out and interfered with proper pollination of some crops, were of more benefit than harm in supplying soil moisture. High summer and fall temperatures, although injurious to some crops, provided a satisfactory harvest season for the harvesting of most crops.

Outbreaks of insect and disease pests were generally local. Grasshoppers were abundant in some areas and required considerable amounts of poison to bring them into check. Brown rot was prevalent in some orchards where adequate spray practices were not carried out. An outbreak of peach rust occurred, but was not general and did not reduce the total crop to any noticeable extent. Walnut codling moth showed some increase in certain orchards. Other insects and diseases attracted the usual attention.

## CROPS

ALMONDS The yield of early blossoming varieties, particularly Nonpariels and IXL's, was reduced to a great extent by rains which interfered with proper pollination. The Texas variety, which blooms later, had in most cases a good crop. Prices to growers were excellent on all varieties.

APRICOTS: Production was considerably below normal. Brown rot was serious in most districts particularly in those orchards where good spray practices were not carried out. Frost damage also occurred in some orchards. Prices to growers were somewhat lower than last year.

CHESTNUTS: Yields on chestnuts were considerably lighter this year due to heavy production for the past two years. Size and quality was good.

CHERRIES: Production was above normal. Heavy shipments resulted in low prices, although total valuation for the crop was much higher than last year's light crop. A large tonnage of Black Republican and Bing cherries were barreled for the first time.

FIGS: Production and prices show a good improvement over past years.

OLIVES: A greater demand for olives this year resulted in the harvest of all the crop, including roadside trees.

PEACHES: Growers had a very favorable year. Yields were above normal and prices were good. An outbreak of peach rust in some of the cling peach orchards resulted in a higher percentage of culls in those orchards than would otherwise have occurred.

PEARS: A large percentage of San Joaquin County pears are shipped to the Eastern Auction Markets. Auction prices were very low and pear growers are very much discouraged.

PLUMS: Spring rains and heavy winds following thinning caused a reduction in yield of the early varieties. Otherwise, the crop was normal. Harvest progressed at a normal rate with prices somewhat spotted.

PRUNES: Prune production was normal.

WALNUTS: Early season indications were for a bumper walnut crop of fine quality. Unusually hot weather during the late summer and fall had a decided effect on both yield and quality. There was a very high percentage of culls, running as high as 25% in some cases.

GRAPES-TABLE: Tokay grape growers had one of the finest seasons they have had for years. Harvesting of a light crop started early and continued at a normal rate with no interruptions from rain, market conditions or other causes. A very high percentage was shipped for fresh consumption. The balance of the crop, consisting principally of grapes remaining on the vines after the choicest had been picked for fresh consumption, were sent to the wineries.

GRAPES-WINE: Most of the wine grapes for Eastern shipment were purchased on the vine. Growers averaged about \$15.00 a ton on the vines. The market this year, in contrast to last year, was a seller's market and grape buyers recovered the losses of last year. Prices paid by wineries strengthened as the season progressed due to a light crop. Production was about 75% of normal.

CELERY: Harvest is still in progress. A large increase in acreage and normal yields has held prices within narrow limits.

CORN: Favorable planting and growing weather gave indications of a very good yield of corn, but corn ear rot caused a high reduction of the crop. Prices were excellent, brought about by the drought in the Middle West, and strike conditions which tied up the importation of corn.

ALFALFA: Growers had an excellent year. Growing conditions were very favorable brought about by a long warm season without rain. Some fields produced seven cuttings. The demand for hay was strong throughout the whole season. At the close of the season growers received \$14.00 a ton for loose hay in the field.

GRAIN: Yields were below normal due to heavy winter rains and infrequency of spring rains. Prices on grains have continued to advance since harvest. Those who sold immediately following harvest did not receive the benefits of the increased prices following the Mid-Western drought.

BEANS: Yields were below normal on all varieties except Baby Limas. Continued warm weather during the maturing period reduced the crop and quality. Prices have continued to advance since harvest due to a short crop in the other principal bean growing districts in the United States.



POTATOES: It has been many years since growers have had such a favorable year. Production was normal, but prices were above normal and continued high throughout the full season.

SWEET POTATOES: Prices have not materially advanced as was expected. There probably was a limited substitution of sweet potatoes for the Irish potato, but increased yields offset this enough so that there was not a distinct increase in prices. Returns per acre will be greater due to increased yields. Favorable planting and growing weather accounted for the increased yields.

MELONS: Growers had a good year and managed to recuperate some of their losses sustained from last year's poor prices.

CARROTS: This County consistently produces good crops of carrots. Besides supplying the local market, heavy shipments are made to other states, particularly Oregon and Washington during their off season.

ASPARAGUS: Warm weather in the early spring at the time asparagus starts to make its appearance resulted in a very heavy yield of shipping asparagus. Prices also were very good. The balance of the crop went to the cannery on which the yield and price were good.

ONIONS: Yields were very good, but the returns were below the cost of production.

TOMATOES: Acreage has continued to increase the past few years and tomatoes are now over a million dollar crop. Production varies greatly in different fields due to soil types, various methods of culture, diseases and other causes. Most of the tomatoes produced are cannery varieties.

PEAS: Early peas in the Tracy district brought excellent prices due to frost injury in other districts. Prices gradually decreased until the latter part of the season when some growers discontinued harvesting operations. (Production figures are based on the crop harvested and are not a criterion of the total production).

SORGHUM: The crop was better than normal. The planting, growing and harvesting season was excellent. Prices have also advanced in sympathy with other grains.

LADINO CLOVER: Additional acreage is being planted each year to this crop. Clay soils not suitable to other crops, where water is frequently available, grow excellent clover crops. However, plantings are not limited to this type of soil as some of our finest soils are planted to Ladino Clover.

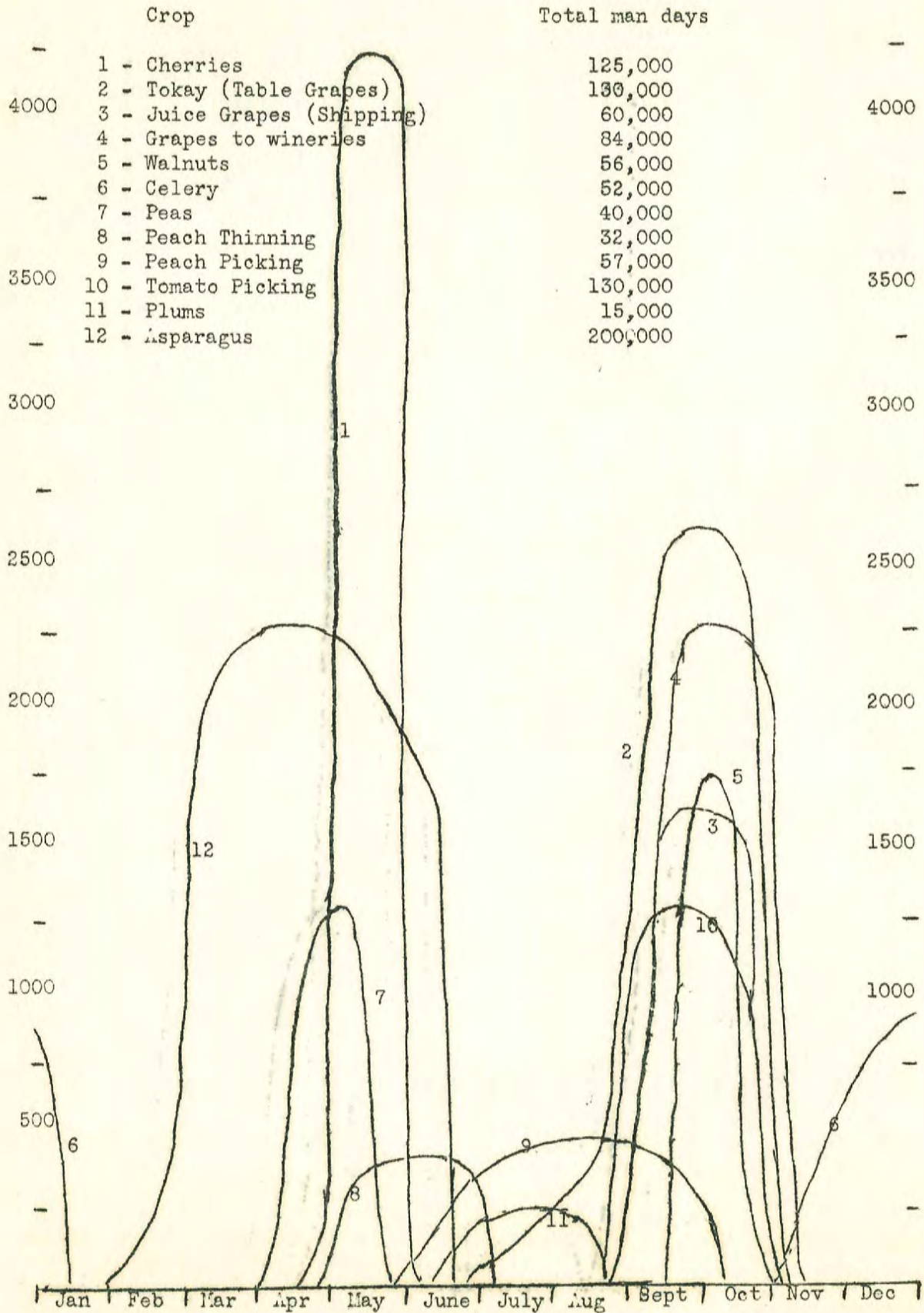
SUNFLOWERS: Yields were normal, but prices advanced materially.

SPINACH: Heavy winter rains flooded out many fields of spinach. Production per acre was very low.

SUGAR BEETS: Early season indications were for an excellent yield of beets, but growers report that extremely high temperatures during the late summer reduced the crop prospects.

RICE: Yields and a satisfactory harvest season were good. Prices, however, have been dropping to very low points.

GRAPHS SHOWING HARVEST PERIODS AND LABOR DISTRIBUTION  
AND REQUIREMENTS OF 10 PRINCIPAL CROPS  
REQUIRING SEASONAL LABOR  
YEAR 1936



BEARING, NON-BEARING, DOUBLE PLANTING & TOTAL ACREAGE  
OF CROPS IN SAN JOAQUIN COUNTY FOR THE YEAR 1936

CROP	SINGLE ACREAGE	INTER PLANT	BEARING ACREAGE	NON BEARING	TOTAL ACREAGE
<u>FRUIT &amp; NUT CROPS</u>					
Almonds	3,428.13	239.37	3,667.50	994.11	4,661.61
Apples	32.15		32.15	1.40	33.55
Apricots	11,658.00	135.95	1,793.95	73.35	1,867.30
Cherries	4,191.85	242.05	4,433.90	226.48	4,660.38
Chestnuts	115.73	108.25	223.98	76.29	300.27
Figs	536.24	1.33	537.57	2.25	539.82
Grapes, Juice	33,553.10	377.18	33,930.28	1,221.72	35,152.00
Grapes, Table	19,736.74	71.05	19,807.79	591.42	20,400.21
Nectarines	113.43	1.00	114.43	35.46	149.89
Olives	314.14	50.46	364.60		364.60
Peaches, Free	2,727.67	125.20	2,852.87	1,397.00	4,249.87
Peaches, Cling	3,134.88	348.58	3,483.46	577.33	4,060.79
Pears	594.48	8.50	602.98	11.90	614.88
Persimmons	5.33	2.00	7.33		7.33
Plums	1,322.02		1,322.02	44.32	1,366.34
Prunes	1,115.59	316.38	1,431.97	31.85	1,463.82
Pomegranates	.50		.50		.50
Quince	4.10	.35	4.45	3.50	7.95
Walnuts	6,722.21	2,339.49	9,061.70	907.47	9,969.17
Hazelnuts	.50		.50	1.25	1.75
Misc. Orchards	414.12		414.12		414.12
Berries	121.01	18.50	139.51		139.51
Nurseries	44.33		44.33		44.33

CROP	SINGLE ACREAGE	INTER PLANT	BEARING ACREAGE	NON BEARING	TOTAL ACREAGE
<u>FIELD CROPS</u>					
Alfalfa	39,139.98	142.00	39,281.98		39,281.98
Beans	26,426.54	8,481.43	34,907.97		34,907.97
Clover	7,921.23	126.00	8,047.23		8,047.23
Cow Peas	242.00		242.00		242.00
Grains					
Barley	104,381.03	115.00	104,496.03		104,496.03
Corn	29,327.97	240.50	29,568.47		29,568.47
Flax	321.29		321.29		321.29
Oats	16,901.68	5.00	16,906.68		16,906.68
Rice	2,565.33		2,565.33		2,565.33
Rye	462.00		462.00		462.00
Wheat	45,546.17		45,546.17		45,546.17
Grain Sorghums	11,710.82	559.04	12,269.86		12,269.86
Hay	37,307.34	10.50	37,317.84		37,317.84
Mints	454.00		454.00		454.00
Pasture	252,298.47		252,298.47		252,298.47
Potatoes	10,388.52		10,388.52		10,388.52
Potatoes (Sweet)	1,151.89		1,151.89		1,151.89
Silage	279.90	235.00	514.90		514.90
Sudan	3,062.29	589.50	3,651.79		3,651.79
Sugar Beets	12,113.44		12,113.44		12,113.44
Sunflowers	5,763.46	187.00	5,950.46		5,950.46
Vetch	29.85		29.85		29.85
Melons	2,031.86		2,031.86		2,031.86
Peanuts	3.00		3.00		3.00

CROP	SINGLE ACREAGE	INTER PLANT	BEARING ACREAGE	NON BEARING	TOTAL ACREAGE
<u>VEGETABLE CROPS</u>					
Asparagus	17,624.38		17,624.38	5,617.77	23,242.15
Beets	30.00		30.00		30.00
Carrots	320.00	3.00	323.00		323.00
Celery	7,890.07	60.00	7,950.07		7,950.07
Cucumbers	108.00		108.00		108.00
Lettuce	195.00	11.75	206.75		206.75
Onions	1,577.66	72.75	1,650.41		1,650.41
Peas	2,132.98	111.22	2,244.20		2,244.20
Pumpkins	267.70	75.50	343.20		343.20
Spinach	540.49	122.25	662.74		662.74
Squash	344.26	110.30	454.56		454.56
Sweet Corn	68.35		68.35		68.35
Tomatoes	13,747.97	626.65	14,374.62		14,374.62
Vegetables	3,211.95	90.50	3,302.45		3,302.45
Artichokes	.25		.25		.25
Garlic	1.50		1.50		1.50
Swiss Chard	5.00		5.00		5.00

CROP	SINGLE ACREAGE	INTER PLANT	BEARING ACREAGE	NON BEARING	TOTAL ACREAGE
SEEDS					
Alfalfa	44.50	120.00	164.50		164.50
Beets	39.00		39.00		39.00
Bird Seed	517.53		517.53		517.53
Carrot	255.00		255.00		255.00
Lettuce	116.77		116.77		116.77
Onion Seed	512.86	16.00	528.86		528.86
" Sets	48.00		48.00		48.00
Parsnip	10.00		10.00		10.00
Pea	400.39		400.39		400.39
Radish	5.00		5.00		5.00
Swiss Chard	4.00		4.00		4.00
Asparagus Roots	786.67		786.67		786.67
Celery Bed	13.50		13.50		13.50

FRUIT & NUT CROPS  
SAN JOAQUIN COUNTY - 1936

CROP	BEARING ACREAGE	PRODUCTION			* FARM VALUE	
		PER ACRE	TOTAL	UNIT	PER UNIT	TOTAL
Almonds	3,667	891	3,267,297	lb.	.19	\$ 620,786.00
Apples	32	150	4,800	boxes	1.00	4,800.00
Apricots (Dried)	1,196	1,672	1,999,712	lb.	.10	199,971.00
(Canning)	598	3.4	2,033	Ton	25.00	50,825.00
Cherries (Fresh)	3,269	1.38	4,543	Ton	107.00	486,101.00
(Cannery)		.17	566	Ton	80.00	45,280.00
Cherries (Royal Ann)	1,165	3.28	3,832	Ton	80.00	306,560.00
Figs (Dried)		707	380,366	lb.	.05	19,018.00
(Fresh)	538	1,061	570,818	lb.	.03	17,125.00
(Cannery)		1,061	570,818	lb.	.027	15,412.00
Tokay (Fresh)	17,338	202	3,517,010	Pkg.	.67	2,359,397.00
Grapes (Wine)		3.96	68,817	Ton	15.75	1,083,868.00
Juice (Shipping)	33,930	1.32	44,783	Ton	17.50	783,703.00
Grapes (Wine)		1.94	66,086	Ton	15.75	1,040,854.00
Thompson (Shipping)	700	8	5,850	Pkg.	.70	4,095.00
Seedless (Wine)		4	2,800	Ton	15.75	44,100.00
Other Table (Fresh)	1,770	56	99,450	Pkg.	.68	67,626.00
Grapes (Wine)		4	7,080	Ton	15.75	111,510.00
Olives	365	1.50	548	Ton	65.40	35,839.00
Peaches (Cling)	3,483	8.4	29,257	Ton	27.00	789,939.00
(Free)	2,853	6.9	19,686	Ton	26.00	511,836.00
Pears	603	4	2,412	Ton	25.00	60,300.00
Plums	1,322	171	226,062	Crate	.69	155,983.00
Walnuts	9,062	.38	3,508	Ton	195.00	684,060.00
Prunes (Fresh)	234	171	40,014	Pkg.	.69	27,610.00
(Dried)	1,198	1.25	1,498	Ton	80.00	119,840.00
Chestnuts	224	.75	168	Ton	150.00	25,200.00
Nursery	80			Acre	1000.00	80,000.00
Misc'l. Orchards	537			Acre	100.00	53,700.00
Total Valuation						\$9,805,338.00

\* Farm value is calculated on the basis of a farm commodity ready for sale F.O.B. ranch, local packing house or drier. Freight, handling and commission charges are not included except where delivery is made to a local processing plant, drier or cleaner. It does include cost of harvesting, packing and container.

VEGETABLE CROPS  
SAN JOAQUIN COUNTY - 1936

CROP	BEARING ACREAGE	PRODUCTION			FARM VALUE	
		PER ACRE	TOTAL	UNIT	PER UNIT	TOTAL
Asparagus (Fresh)	17,625	900	15,862,500	lb.	.05½ ¢	872,439.00
Asparagus (Cannery)		2,600	45,825,000	lb.	.04	1,833,000.00
Cantaloupes	275	485	133,375	Crate	.69	92,029.00
Carrots	320	300	96,000	Crate	.85	81,600.00
Celery '36-'37 Season*	7,950	110	874,500	½ Crate	.98	857,010.00
Lettuce	207	130	26,910	Crate	1.90	51,129.00
Onions	1,651	250	412,750	Cwt. 30 lb.	.40	165,100.00
Peas (Fresh)	2,244	138	309,672	Hamper	.89	275,608.00
Spinach (Cannery)	663	2.34	1,551	Ton 20 Basket	10.50	16,286.00
Strawberries	96	275	26,400	Crate	.75	19,800.00
Tomatoes	14,375	7.3	104,937	Ton	13.00	1,364,181.00
Watermelons	1,099	15.5	17,035	Ton	9.00	153,315.00
Honeydews	275	8.7	2,393	Ton	18.50	44,271.00
Casabas	275	8	2,200	Ton	10.00	22,000.00
Persians	275	7	1,925	Ton	12.00	23,100.00
Seed Crops and Asparagus and Celery Beds	2,939			Acre	100.00	293,900.00
All Other Vegetables	3,860			Acre	80.00	308,800.00
Total Valuation						\$6,473,568.00

\* 2500 acres frozen



FIELD CROPS  
SAN JOAQUIN COUNTY - 1936

CROP	BEARING ACREAGE	PRODUCTION			FARM VALUE	
		PER ACRE	TOTAL	UNIT	PER UNIT	TOTAL
Corn	29,568	1.00	29,568	Ton	\$35.00	\$1,034,880.00
Wheat	45,546	9.40	428,132	Cwt.	1.45	620,791.00
Oats	16,907	10.00	169,070	Cwt.	1.02	172,451.00
Barley	104,496	11.50	1,201,704	Cwt.	1.12	1,345,908.00
Rice	2,565	30.00	76,950	Cwt.	1.50	115,425.00
Flaxseed	321	14.00	4,494	Bu.	2.05	9,213.00
Grain Sorghum	12,270	1.25	15,337	Ton	32.00	490,784.00
Beans	34,907	14.00	488,698	Cwt.	5.00	2,443,490.00
Potatoes	10,389	160.00	1,662,240	Cwt.	1.60	2,659,584.00
Sweet Potatoes	1,152	5.50	6,336	Ton	32.25	204,336.00
Rye	462			Acre	15.00	6,930.00
Sugar Beets	12,113	18.00	218,034	Ton	5.45	1,188,285.00
Hay (Grain)	36,693	1.45	53,205	Ton	9.30	494,807.00
Hay (Wild)	615	1.15	707	Ton	6.30	4,454.00
Alfalfa Hay	39,282	6.50	255,333	Ton	12.00	3,063,996.00
Sunflowers	5,950	9.54	56,763	Cwt.	4.30	244,081.00
Sudan Grass	3,652			Acre	30.00	109,560.00
Pumpkins	343	13	4,459	Ton	3.50	15,607.00
Pasture	252,298			Acre	.75	189,223.00
Ladino Clover	8,047			Acre	45.00	372,115.00
Misc'l. Field Crops	1,009			Acre	50.00	50,450.00
Total Valuation					\$14,836,370.00	

Total Valuation of Fruit, Nut  
Vegetable and Field Crops \$31,115,276.00

FINANCIAL STATEMENT

YEAR - 1936

Supervision	¢ 6,048.00
Plant Quarantine & Nursery Stock Inspection	7,490.00
Standardization	7,556.18
Orchard & Field Inspection	8,371.90
Rodent Control	10,878.53
Weed Control	5,910.21
Apiary	746.98
Egg Inspection	420.30
Statistics	3,300.20
Seed Inspection	700.00
Fairs & Exhibits	1,000.00
Office Help	1,630.00
Equipment, Supplies & Miscellaneous Expense	<u>5,489.21</u>
Total	¢59,354.65

