

Christmas Tree Production

winter season is favorable planting time for tree crop to meet expanding California market

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Californians pay between five and seven million dollars annually for 2½ million Christmas trees.

Raising Christmas trees is a big business. Though most of the Christmas trees come from natural forest stands, there is an increasing interest in growing trees in plantations.

Growing Christmas trees in a plantation is not easier than growing many other specialty crops but it has definite advantages over the natural forest stand:

1. Better quality trees can be grown in a shorter time.
2. Trees can be grown closer to market.
3. Heavy snows do not block the cutting and transport of trees.
4. Early cutting and long storage of trees are unnecessary.
5. Plantation trees may be left uncut for a better market.

The best location for a Christmas tree plantation is on land where the desired species have been found growing in the original forest. Douglas fir which comprises the bulk of Christmas tree production in the west may be grown in the coast counties from Monterey north and in the lower Sierra forest areas from Tuolumne County north. White fir, the tree second in volume of use, grows on cooler north and east sites throughout the Sierra forests at elevations of 2,500' to 6,000'. The popular California red fir—silvertip—is not found naturally lower than about 5,500'.

Most California soils are naturally fertile enough for the growing of conifers, but soil depth of two feet or more is desirable for good survival and growth. Annual rainfall should be at least 24" or be supplemented by irrigation during the first two years after planting. Grass, weeds, or brushy vegetation should be removed, from the vicinity of the trees. Otherwise the trees will be stunted and perhaps killed by the competing roots.

Most conifers do best on slightly acid soils and should not be planted where alkali is a problem. Hillsides too steep for machine cultivation may be used successfully to produce Christmas tree crops if weeds are kept down by hoeing.

Trees used for planting should be small, two to four years old, with a well developed fibrous root system. The top should have a sturdy stem and good buds. The stock is usually handled as bare-root

trees because of ease of shipping and planting. Bare roots are tender, so great care must be exercised in handling to be sure they are kept continuously moist and never exposed to sun or drying wind.

The number of trees to plant will depend on local marketing conditions, rate of growth of the trees, and amount of land available. Planting should be done so that one portion of the available land is planted each year, the number of portions depending on the years required for trees to reach marketable size. If cutting is done so that new trees are developed by stump-culture or if the area is replanted immediately after cutting, yearly production of Christmas trees will be maintained. Because of variations in the development of trees the harvesting on each acre will probably be spread over three or four years.

Some losses due to animals, drouth, and poor tree form, inevitably occur and may amount to 20% to 25%. Yield may be roughly estimated at 900 marketable trees per acre.

Planting should be done during the dormant season when the ground is moist. Over much of the state this means after fall rains have wet the soil to a depth of at least two feet, and until March or April when most plants are beginning active growth. In the mild coastal, valley, and lower Sierra foothill areas, fall or early winter planting is recommended. Late fall planting in areas of mild winters gives the trees every opportunity to use the winter rainfall and a few warm days for some root establishment. In higher mountain areas where heavy snow can be counted on to cover and protect

seedlings, fall planting is also desirable. Spring planting is questionable because deep snow often delays operations until the hot weather.

Planting work should be carried on during cool, moist weather. In many cases planting during rain is desired since the seedling is not exposed to drying conditions.

The best spacing for planting most fast growing trees is 6' x 6' or wider. This allows full sunlight, space for root development, and growing room for trees even up to the time of harvest. The trees will attain a full uniform shape and there will be room for cultivation. Closer spacing makes possible the harvest of a first crop of small trees, but unless adequately thinned, many trees will be stunted or of poor form and may not be marketable.

Trees Required Per Acre for Various Planting Intervals.	
Spacing	Trees to the acre
5' x 5'	1,700
6' x 6'	1,210
7' x 7'	890
8' x 8'	681

The most serious deterrent to the survival and good development of a young plantation is competition for soil moisture, plant food and light by other vegetation. Weed control is vital during the first two years because most coniferous seedlings are not so vigorous and fast growing as many weedy annuals and brush species. Once the seedlings have become well established and are growing vigorously further cultivation is usually not necessary.

Some well-shaped trees may be cut for

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Young Christmas trees grown in a plantation.



CAPACITY

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it slaughters. In addition, large quantities of cured meat—hams and bacon—and fresh pork are shipped into the state. California producers marketed about 800,000 hogs in 1951—431 under inspected slaughter—while inshipments for immediate slaughter amounted to 1,630,000 head.

Considering physical resources alone, California could produce many more hogs than it does. Producers have almost year-round pasture and a large local market and hogs can be produced on grains other than corn. However, other kinds of livestock have appeared more profitable to farmers.

Hog production was projected at about current levels for 1955.

Poultry

Two outstanding developments in poultry since 1940 have been the large expansion in production of commercial broilers and fryers and in turkeys. Both products have been priced relatively lower than red-meats since War II and have improved in quality.

California produced 23 million broilers in 1950, compared to 6 million in 1940—nearly a four-fold expansion in 10 years. This growth resulted directly

from favorable chicken-feed price ratios coupled with increased production efficiency. Price ratios are favorable because of the strong demand for chicken meat. Improved technology and efficiency have permitted volume production at reasonable cost.

Broiler production is tentatively projected at 36 million in 1955.

Turkey production has had strong year-round consumer demand, generally favorable feed-price ratios and increased technology and efficiency.

Much of the further expansion in turkey production is likely to come in the Beltsville small white. These small 6-10 pound birds are gaining in popularity with consumers. Production of both the Beltsville and the larger Bronze turkeys are projected together at 12 million birds in 1955, compared with 8 million in 1951. Production in pounds would be projected at 177 million compared to 145 million.

In 1950, California had almost 50% more hens and pullets on farms than in the 1937-41 prewar period. Average rate of lay also had increased—from 153 to 186 eggs per bird. Thus, total egg production in 1950 was 79% above the prewar level. Meanwhile human population increased by 53%. But, the per capita consumption has also increased, so the State is still deficit in egg production. In 1951, 1.2 million cases, about 40 eggs per capita, were shipped into the State.

The January 1, 1955 inventory of hens and pullets is projected at 23,400,000, compared with 21,444,000 in 1951—an increase of 9%. Egg production is projected at 300 million dozen in 1955, compared to 270 million in 1951—an increase of 10%. Rate of lay is projected at 189 eggs compared to 186 eggs per layer.

Chickens raised—excluding broilers—have not kept pace with laying flocks. This means a larger proportion are raised for flock replacement, a smaller proportion for market. The deficit in market supply has been partly closed by expansion in commercial broilers.

The number of chickens raised was projected at 36 million compared with 32.4 million in 1951.

Projections of California's considerably higher agricultural productivity in 1955 assume favorable farm prices and adequate supplies of production materials, but a somewhat smaller farm labor force. Improved farming practices and new technology are expected to be available and—being profitable—more widely used. Higher levels of production—to be attainable—must be profitable to farmers.

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table trees when they reach three feet, but the greatest market demand is for trees between five and eight feet. A limited market exists for trees up to 20 feet. Most trees should be cut before they reach 12 feet in height. Trees too low in quality, or too big to be sold, should be cut back. Cutting should be done with a pruning saw with a curved blade. The saw leaves an undamaged stump and a clean butt on the tree which may not need further trimming.

On some species of trees it is possible to grow a second tree on the stump remaining after a tree has been harvested if one or more branch whorls are left when the tree is cut. A new tree can be grown from one of these branches in the same time or less than is required for the original tree. The base will be slightly bent but a good marketable tree can be taken from above this bend. With some species, including Douglas fir, white fir, and red fir, this method of stump-culture may be repeated several times.

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Trees Suitable for Christmas Tree Planting in California

Trees	Stock to plant T or S*	Years to reach 5 to 6 ft.	Where to plant	Christmas tree form	Remarks
Douglas fir	2 yr. T or S	5 to 8	Central & N. Coast. Middle Elev. Mts.	Excellent	Good results in plantations
White fir	3 yr. T	10 to 15	Mountain Timber Belt	Excellent	Experimental in central coast and middle elev. mts.
Red fir	3 yr. T	12 to 18	Mountains—4,000 ft. and up	Excellent	Experimental in plantations. Known as "silver-tip" in trade
Monterey pine	1 yr. S	4 to 6	Coastal	Good to fair	Rapid growth. Good form for a pine
Scots pine	2-3 yr. T	5 to 7	Coastal. Middle Elev. to N. Valley	Good to fair	Popular Christmas tree in Middle West
Bishop pine	1 yr. S	4 to 6	Coast	Fair	Experimental but widely adaptable along N. coast
Beach pine	2-3 yr. T	4 to 6	Coast	Fair to good	Dwarf tree. Widely adaptable along N. coast
Ponderosa pine	2-3 yr. T	6 to 8	Mountain Timber Belt	Good to fair	Widely adaptable on light soils
Aleppo pine	2 yr. T	4 to 6	Valley and Desert	Fair	Does well in hot interior with irrigation. A good pot tree
Knobcone pine	2 yr. T	4 to 6	Foothills	Fair to poor	Good for dry sites and shallow soils. Produces cones early.
Norway spruce	3 yr. T	9 to 12	Coastal and Sacramento Valley	Good to fair	Slow growth but adaptable with irrigation
Colorado blue spruce	2-3 yr. T	8 to 12	Valley, Foothill & Coastal	Good to fair	Experimental as a Christmas tree
Monterey cypress	1 yr. S	4 to 6	Coast	Fair to poor	Good form but flexible branches
Arizona cypress	2 yr. T	4 to 7	Valley and Desert	Fair to poor	Grown as a Christmas tree in Georgia
Port Orford cedar	2 yr. S or T	5 to 7	Coast, Valley and Foothills	Fair	Wide use as ornamental
Deodar cedar	2-3 yr. T	5 to 8	Coast and Valley	Fair to good	Excellent as an outdoor tree
Incense cedar	2 yr. S or T	5 to 8	Coast, Valley and Mountains	Fair	Very hardy but only fair in form
Redwood	2 yr. T	4 to 6	Coast & Valley Foothills to 2,000 ft.	Fair to good	Stands pruning well—sprouts vigorously

* T—transplant. S—seedling.