

average cost per barrel has ranged between \$1.25 and \$1.50.

These pre-war figures, while they are not applicable entirely to present-day conditions, can be used as a guide. They also compare production costs in the different States and Provinces. Any estimate of costs should include interest on investment, depreciation on machinery and equipment, labor, a certain amount for management and all materials used in the business.

**Clean up the Warehouse.**

In some cases after the season is over the warehouse is littered with dirt, nails, broken staves or hoops, unsound fruit and other rubbish and remnants peculiar to a fruit-packing establishment. Frequently, commercial fertilizer is stored in the building and a quantity of the same is left behind when the material is removed. This leaves an unpleasant odor which is not so objectionable in its season but appears quite out of place when the fruit is being stored. Empty barrels, boxes, packages, etc., have been or will now be accumulated in preparation for the harvest and it is well that a general housecleaning take place before they are put in. Open the doors and windows for a few days and purify the place with fresh air and sunlight, after it has been swept clean. Many basements become damp and moldy. In such a case a fresh coat of whitewash will sweeten things up and help to purify the surroundings as well as the atmosphere. In Bulletin No. 44 of the Dairy and Cold Storage Series, the following recipe for whitewash is recommended. Slake half a bushel of lime with hot water, stirring continuously while slaking, strain it and add one peck of salt dissolved in warm water. The proper consistency for whitewash is a thin paste, and water will have to be added to secure this consistency after mixing the dissolved salt with the whitewash. To each 12-quart pail of whitewash composed as above, add a good, fair handful of cement and a teaspoonful of ultramarine blue. The cement and blue should be added only as the whitewash is being used and should be thoroughly stirred into the whitewash, otherwise, when applied it will be streaked.

If there are any pipes or other equipment in the rooms to be whitewashed that will rust, do not use salt in the mixture around the piping.

Don't put on too thick a coat—just enough to cover the surface in good shape—then allow from 1 to 3 days for drying. If you dry the whitewash out too quickly it will flake or brush off very easily; on the other hand a very slow drying will allow the water to soak into the wood and may cause unpleasant odors.

Whitewash containing cement must be used without delay.

**High Color in Apples.**

In that comprehensive bulletin, "The Apple in Canada", by W. T. Macoun, Dominion Horticulturist, are some interesting observations on the coloring of apples. We are taking the liberty of reproducing these remarks by Prof. Macoun, believing that apple orchardists will find in them interesting reading.

The cause of color in apples is not thoroughly understood, but it may be said that each variety of apple has a color or a possibility of a color or colors peculiar to itself and it requires the proper conditions and chemical changes to develop them and make them apparent to the eye. Certain conditions will intensify the color of a variety, and others will lessen it. Some of the principal apparent causes of the development of color in fruit may be considered. It is well known how important a factor sunlight is in the development of color in fruit. Fruit that is hidden by foliage is not as well colored as that exposed to full sunlight, hence the importance of thorough pruning and thinning. During the past few years it has become quite an amusement to cover part of an apple early in the season with a letter or letters or the profile of some person; underneath these letters or profile the natural color does not develop, and when they are removed the letters stand out in green and yellow in the surrounding red, to the wonder of the uninitiated, thus showing that sunlight is necessary for the development of high color. Heat is also an important factor in determining intensity of color. Each kind of fruit appears to have its optimum or best mean temperature in the growing season. In countries or districts with cool summers for the kind of fruit in question the fruit is not as a rule highly colored, and where the summer temperature is very high some varieties of apples are not as well colored as where the summers are a little cooler. Fruit on young trees growing vigorously and causing the fruit to grow late is not well colored. This leads to the conclusion that the degree of maturity of the fruit has much to do with the color. In Ontario late keeping varieties have the best color in the warmer districts where the fruit becomes most mature before picking. Early varieties, or those that mature in summer or early in the autumn, get sufficient heat in most places in Canada where apples are grown to reach their full development in comparatively warm weather, hence are highly colored which, where the season is relatively short and the autumn cool, do not reach their best condition. In warm, dry seasons fruit matures earlier than in seasons which are less so, and if well developed the more mature the fruit is before it is harvested the higher the color will be. The fruit in the dry districts of British Columbia, Oregon, Washington, California and some other states is noted for its high color. There the trees are irrigated and by stopping irrigation and causing a ripening of

the wood of the tree and a thorough maturing of the fruit the latter becomes highly colored. In orchards where the trees are in sod, winter apples are usually more highly colored though smaller than in cultivated orchards, evidently because the trees ripen sooner and the fruit matures more quickly, than in cultivated ground. This leads to the conclusion that moisture must play an important part in the coloring of fruit, as the relative amount of moisture and heat will determine to a large extent when the tree stops growing and when the fruit will mature. British Columbia, Oregon, Washington and other places where irrigation is practiced afford the best combinations of sunlight, heat, dryness and moisture, hence it is that some of the most highly colored fruit is produced there. What part, then, do soils or plant food in soils play in the production of highly-colored fruit? This is a question in which every fruit grower is interested. From the foregoing statement it can easily be seen that warm, well drained soils are most likely to produce apples of a high color, as on these soils the tree and fruit will mature earlier than on wetter soils.

Here is a suggestion as to the effect of climate on flavor which some one, however, may disprove. Where a variety matures thoroughly with a relatively low mean temperature for that variety, then one gets the best flavor in that variety. Where a variety matures thoroughly with a relatively high mean temperature then one gets the poorest flavor. Where the mean temperature is too low for full maturity, but where there is almost maturity there one gets a medium flavor. Where mean temperature is so low that the fruit is immature there one gets the greatest acidity and lack of flavor.

**Propagating Bush and Cane Fruits.**

It frequently becomes necessary or desirable to replace the old plantation of bush or cane fruits with young, vigorous growing stock. Disease in this way is more easily controlled, and a patch that has become very weedy is disheartening to many. New resolves are formed as the new plantations are set, and when cultivation is thorough from the beginning, weeds and grass should give little trouble. All bush and cane fruits can be easily propagated, so if any one has a start he can easily increase his plantation by observing a few rules in respect to the reproduction of each kind.

The common method of reproducing currants is by the use of cuttings, these take root very readily, and after one season's growth make good plants. The long-established time for making cuttings is in the autumn after the wood is ripened. Wood of the current season's growth is used. This is cut full length in the field, and heeled in for a time, or the cuttings are made about 6 to 10 inches long and planted at once in the nursery row. When making cuttings, cut just below

bushes should be severely pruned in the autumn to give a vigorous growth during the ensuing season. When the young wood has made a good growth, perhaps early in July, the earth is heaped up around and through the bush until only the tips of the young shoots are left showing. The soil is packed firmly at first, but a loose mulch is left on the surface to conserve moisture. Most of the American varieties will have become well rooted by the autumn, and the young plants may be transferred to the nursery row. English varieties usually take two years to root, and the soil must be left around them for that time.

When making cuttings of gooseberries, ripened wood is required, and they are handled much the same as currants.

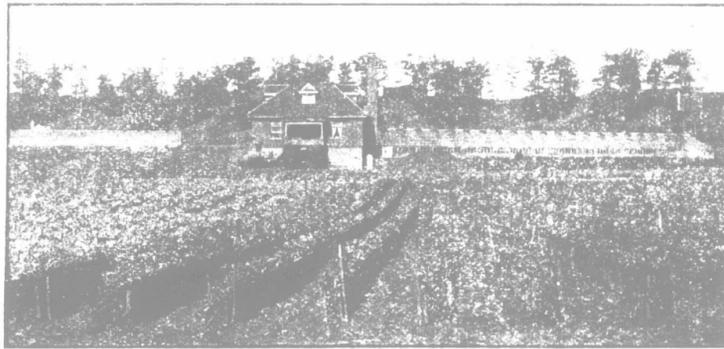
The blackberry is very easily propagated; suckers are produced in great numbers, and these may be dug up and planted. If this system is not speedy enough, the plant may be reproduced more quickly from root cuttings. Cut the roots into pieces two or three inches long, and plant them either in the fall or spring. They are set about three inches deep in the nursery row for one season. Good plants will be available after one year, if the soil is kept well cultivated.

When setting a new plantation of raspberries, the best plants to use are the young shoots that come up in the fall after the last cultivation, or those that come up early in the spring if they are strong and healthy. Care should be taken not to transfer any diseased or weak canes to the new plantation. Reproduction is from the healthy roots, not the canes. If old canes are transferred they will soon die down, and it is not advisable to transplant them. The transplanting may be done in early fall, but the majority of growers favor spring setting. Under favorable conditions this work may be continued up until June.

**Blanching Celery.**

In order to give celery a white appearance and a crisp flavor it is necessary to blanch or bleach it in some way. Any device that excludes the sunlight performs the function, but labor is usually an influencing factor. Earth, lumber, paper, field tile and patent bleachers are made use of in blanching celery, but on a commercial scale this list is reduced largely to earth, 12-inch boards or patent bleachers. In the celery fields near Theford, Ontario, earth is used exclusively because the Burwell Marsh, where the crops are produced, is black muck in some places to a depth of 15 feet. This is easily banked up about the plants, it holds the moisture there, and a flavor and crispness result that are hard to surpass anywhere. The amateur in celery growing will probably find the earth method of blanching as simple as any. The soil may be drawn up about the plant before it is fully grown. It is gradually mounded up until only the leaves are left exposed.

Perhaps the board method of blanching is more extensively used than any other. Boards 12 inches wide and 12 to 16 feet long are used, but the length is immaterial when operations are conducted on a small scale. The boards are pushed in close to the plants and secured there by stakes which should be 2 inches by 1 inch by 2 1/2 feet. One stake, driven securely into the soil, will hold both ends of two boards. After the season is over the boards are carefully



Blanching Celery with 12-inch Boards.

laid away with lath between each layer to allow for the circulation of air. The life of a celery board is from 5 to 7 years.

In a farmer's garden where only a limited quantity of celery is produced it may be blanched with brown or white paper. This is done by wrapping each individual plant and tying with a string. This method gives satisfactory results, but it is not economical on account of the labor involved.

Stiff paper boxes, wooden boxes or field tile can be utilized to good advantage on a small area. A convenient size for a box is 4 by 4 by 10 inches. It, like the tile, is simply placed over the celery plant which is allowed to grow up through.

A patent bleacher is now on the market which gives good results. It is 12 inches wide and comes in 100-foot rolls. The bleacher is held close to the plants by special clamps. It is light in weight and has many advantages to recommend it.

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Insects, diseases and German submarines are doing what they can to destroy available food. We can leave the disposition of the submarine to the Admiralty, but it is our duty to combat the other two enemies with Bordeaux mixture and arsenicals. Fruits and vegetables will be subjected to attacks throughout the season, but the grower should ever keep in mind that Bordeaux mixture is a good preventive of blight, while Paris green and arsenate of lead will destroy biting or chewing insects. Sucking insects which extract the juices from the plant must be combatted with a contact poison, such as Black leaf 40, kerosene emulsion or whale oil soap.

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