How to Reduce Losses from Yellow Dwarf Virus
Best Grape Varieties for Oregon

OREGON STATE COLLEGE • CORVALLIS • FALL 195
Once again Oregon farms are joining other farms across the nation to turn out record-equaling crops and record-breaking supplies of livestock products.

This year it is taking more acres to come up to last year's mark in crop tonnage. Yields, on the average, are down from last year mainly due to less favorable weather. Meanwhile, there has been no slump in know-how or machines required to do the job, and a little more man power has been necessary on farms this year than last.

Among the crops, corn is a record-breaker this year both in Oregon and the nation as a whole. Oregon's crop would have been even larger if spring and early summer weather in the Willamette Valley had not been so cold and wet.

**Corn looms large**

Nationally, corn prospects have steadily improved as the season progressed and yields are expected to average out to a record high. The quantity harvested for grain appears almost certain to top 4 billion bushels for the first time in history—fully a fifth more than last year. Part of the increase comes from a shift of acreage away from barley, oats, grain sorghum, and other crops and from planting land that was temporarily in the acreage reserve.

**Grain piling up**

The increase in corn production more than offsets the decrease in supplies of oats, barley, and grain sorghums. It points toward a further buildup in feed grain inventories despite record numbers of cattle and hogs on feed. Likewise it points toward a further buildup of taxpayers' investment in government holdings and presents a severe challenge to the "low level-no control" price support program adopted last fall.

Taken along with large supplies of other farm products, it demonstrates that food can be supplied abundantly with fewer acres and fewer farm workers than in the past.

This situation and prospect cause some to believe that machines, fertilizer, improved seed, and other forms of output-boosting technology are bad for farmers. They recognize that costs are reduced by raising yields but point out that prices often are reduced even
Farm Outlook

By Agricultural Economist M. D. Thomas

more by the larger supplies that are offered on the market.

Others note that farmers who adopt the new less-costly ways, or adjust to market demands, are rewarded providing they make the changes in time before the rank and file do—that is, before supplies increase and prices drop to the point where they are no longer profitable.

Also noted is the fact that technology has made it possible for fewer and fewer people to provide the essential food and fiber. More and more may work at the jobs of providing modern comforts and conveniences as well as the means of protecting our way of life. At the same time, part of the reward of technology is taken in the form of shorter working time and more leisure.

Some contend that public policies and programs should help farmers and their families take advantage of opportunities, off-farm as well as on-farm, that grow out of technology and our changing way of life. They argue that education, employment services, social security, unemployment insurance, land retirement, rural development, and similar programs work in this direction. They feel that price supports, income payments, and the like tend to delay adjustments that, in prosperous times at least, would be in the best interests of most individuals and the public generally.

Regardless of how the problems of technology and abundance are resolved, it is evident that efficient farmers have the best chances of being rewarded. These farmers will be the ones who adopt cost-cutting income-increasing tools at least as fast as their competitors. Those who fail to do this will find themselves and their families turning to something besides farming.

Economy offers opportunities

Fortunately, the economy of the state and the nation offers many opportunities off-farm. For every job on farms there are now nearly 10 off farms. True, many of these off-farm opportunities require special skills or are difficult to obtain because of various restrictions. Yet, many are closely related to farming, either in servicing farmers with needed supplies or in helping to move products from the farms to consumers.

Turning from the broader, longer-run problems, let's look now at the more immediate prospects for some of Oregon's principal farm products.

Cattle

Drought isn’t as much of a factor in this fall's cattle market as was feared earlier. The driest spots are in the northern parts of the Great Plains where there aren’t nearly as many cattle as in the Southwest. And early (Continued, page 16)
Feeding trials show steers gain faster on pellets and wafers than on chopped hay. But these gains may be offset by higher cost of processed feed. Decision on whether to feed pellets still depends on feeder's situation and local conditions.

Steers fed a complete ration of wafers and pellets gained faster than those fed on coarse chopped hay, but costs of feed per pound of gain were about equal, according to E. N. Hoffman, superintendent of the Malheur Branch Station in Ontario.

Interest in feeding pellets and wafers is running high, and OSC researchers are working to find the answers to questions raised by this new method of feeding. The Malheur trial is one of several experiments now underway. Results will be published from time to time as research is completed. A summary of pelleting research throughout the country appeared in the winter 1959 issue of Oregon's Agricultural Progress.

Yearling steers were fed to compare alfalfa wafers (4 inches in diameter), pellets (⅜ inch), and chopped alfalfa—each supplemented with a grain mix making up 40% of the ration. Hay in both wafers and pellets was coarsely chopped.

Processed rations fed

 Completely wafered and completely pelleted rations—60% alfalfa and 40% mixed grain—were also fed. Grain mix used in all rations was made up of equal parts of ground ear corn, ground barley, and dried beet pulp.

A primary advantage of pelleting, according to animal husbandman J. E. Oldfield, is that animals get the balanced diet planned for them, and don't reject roughage and less appetizing ingredients. Low quality feeds can be combined with palatable and nourishing supplements, and the animals can't sort out or leave the less desirable components.

Exceptionally high quality alfalfa was used for the Malheur experiments, however, and Superintendent Hoffman reports that steers accepted complete wafers and pellets with the first feeding. Cattle on other mixes required several days to completely accept the test rations.

Steers on the hay pellet and grain mix had the highest average daily gain (2.8 pounds), but complete pellets, complete wafers, and the hay wafer and grain mix were close behind in
producing daily pounds of gain. Chopped hay rations gave somewhat lower rates of gain (see table).

**Gains offset by high costs**

While the animals gained faster on pelleted and wafered hay, extra gains were offset by higher feed processing costs. The complete wafer and complete pellet ration cost 18 to 20 cents per pound of gain, while the chopped hay mixture cost about 16 cents per pound of gain.

Oldfield points out that extra processing cost is one of the limitations in pelleting or wafering. It is often difficult to say whether it pays to feed pellets and wafers. Each situation is different, and local costs and feeding conditions have to be considered by the feeder, according to Oldfield.

The Malheur experiment lasted from November until April of last winter. Weather conditions were quite mild and dry for that part of the state—less than 4 inches of moisture and a low temperature of $-3^\circ$ F. More severe weather conditions might have had an effect on the experiment, according to Hoffman.

**Steers healthy**

Steers remained healthy throughout the feeding trials. Eight cases of bloat occurred, but only one was serious. There were no other digestive troubles or illnesses of any kind.

Feed requirements were about the same for all animals on pellets and wafers, but ran slightly higher for animals on the chopped hay rations. Lowest feed requirement was for steers on chopped hay and corn, but they also had the lowest average daily gain.

**Stilbestrol implanted**

All animals used in this feeding trial were Stilbestrol implanted (30 mgs. per head). Results of recent research in hormone implants were reported in the Spring 1959 issue of Oregon's Agricultural Progress.

Final yield on carcasses did not seem to be a factor in this experiment. Yield on animals fed wafers and pellets was comparable to that of animals getting chopped hay.

Feeding trials at the Malheur Station will continue through the winter of 1959-60. Molasses will be added to the rations, and quality of the wafer and pellet will be somewhat higher. Also, the ration of hay to grain will be raised from 60-40 to 50-50. Lighter cattle will be used, and lower quality hay will provide the roughage.

Research in pelleting, wafering, and processed feed is going on at several branch Experiment Stations and at the Central Station in Corvallis. Significant results will be reported as experiments are completed.

- **Weaner calves** fed pelleted hay used 1½ times more hay and gained 5 times more rapidly than calves on similar chopped meadow hay. This (Continued, page 6)

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</table>

**Results of Feeding Trials Comparing Pellets, Wafers, Chopped Hay**

COMpletely wafered and completely pelleted rations were fed 2 lots of animals. Group above had complete wafer, and average daily gain was 2.72 pounds. Trials to continue in winter of 1959-60.
LAMBS are now on a 60-day feeding trial to test effects of roughage in pellets. Interest in feeding pellets and wafers is running high, and OSC researchers are working to answer questions raised.

(Continued from page 5)

early pilot study at the Squaw Butte Station will be expanded during the coming winter, according to station superintendent Art Sawyer.

**Swine**

Using the same ration in pelleted and meal form, showed an average daily gain, over a 4-week period, of 1.68 pounds on pellets and 1.40 pounds on meal. This preliminary study is being conducted by animal husbandman J. E. Oldfield at the Central Station.

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**Heifers**

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**Cows**

Fed a ration based on barley, had an average daily gain of 1.78 pounds on pellets and 1.71 pounds on meal. Oldfield points out that feed conversion was also slightly better on pellets—3.53 pounds required per pound of gain in contrast to 3.87 pounds on meal.

- **Cows** were fed 13 pounds of alfalfa hay daily in ration of grass silage and grain. One group got loose hay, the other the same quality alfalfa processed as wafers. Only 3% of the wafered hay was refused, but 28% of the long hay was left, according to superintendent Howell.

**Lambs**

Fed a ration of pelleted bent grass straw had average daily gains of 1.46 pounds as compared with 1.25 pounds when grass was fed loose, according to superintendent Herb Howell of the Astor Branch Station.

- **Lambs** are now on a 60-day feeding trial to test effects of roughage in pellets, reports assistant animal husbandman D. C. Church of the Central Station. Animals are being fed 8 different rations of pellets containing 30% alfalfa, 35% grass, and 35% concentrates.

**Dry cows**

On feeding trials in Corvallis digested long hay better than pellets, according to dairy husbandman I. R. Jones. The same low quality grass hay was pelleted and fed long for the experiment. Animals on pellets failed to ruminate and the ration passed rapidly through the digestive tract. Research is now underway to determine digestibility of alfalfa hay fed long and pelleted.

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**Steers**

At the Central Station soon will be put on feeding trials to compare wafers and pellets, according to a report from D. C. Church. One aim of this experiment, due to be underway by early December, is to evaluate different feeding methods. The usual experimental feeding method, which consists of feeding animals twice a day in stalls, will be compared to the usual commercial method of self feeding.
Experiments with "mock-up" corn driers show 8-, 12-, or 16-inch columns are about the same in . . .

Drying Corn Economically

Farmers using corn driers with 8-, 12-, or 16-inch columns will get about the same amount of drying for their money, according to agricultural engineer Dale E. Kirk.

Kirk has been experimenting for two years with "mock-up" corn driers having thicknesses of 4, 8, 12, and 16 inches. The 8-, 12-, and 16-inch columns all were close in their air drying requirements.

Same fuel used

Research shows that none of these three thicknesses has a major advantage over the others as far as fuel and electricity are concerned. Each uses about the same amount of fuel and electricity to dry approximately the same amount of corn.

The 12- and 16-inch thicknesses seem to cause greater differences in moisture content. To avoid any undue moisture dockage, grain processed in the thicker columns should be well mixed and stored 48 to 72 hours to equalize moisture content of the individual kernels.

Kirk points out that shelled corn driers previously designed for western Oregon were built to get the most fuel economy possible. Not too much thought was given to the amount of corn that could be handled or the cost of the drier to the farmer.

A crop could be picked, husked, and stored in a crib, and it was easy to supply a constant flow to the drier as corn was shelled from the crib. Drying could be completed at a leisurely rate during winter months.

Today, corn is more often shelled in the field, and corn driers must dry in 24 hours all corn harvested each day. Also, each day's harvest must be dried at the lowest possible cost in fuel and electricity.

Kirk's experiments also showed that static pressure—force used to push the air through the drier—for the 8-, 12-, and 16-inch columns could be increased up to 2 inches of water for increased drying capacity without causing much increase in operating costs.

Pressure beyond 2 inches may produce greater drying capacity with no decrease in efficiency. While slightly higher pressures may be desirable, they also cause problems with air leaks, air channeling, and may require a more expensive type of fan construction.
Planning a grape arbor for your family farm? New OSC research points to . . .

Best Grape Varieties for Oregon

**CERTAIN GRAPE VARIETIES** may be particularly adapted to growing in Oregon, according to food technologist H. Y. Yang and horticulturist Harry Lagerstedt.

Yang, Lagerstedt, and research assistant Wilbert F. Steele, have just completed experiments in which they checked 43 grape varieties, grown in different parts of Oregon, for flavor and sugar content.

Grapes, for commercial or domestic use, have not been grown extensively in Oregon because of cool weather. Most grape varieties mature best in hot, dry climates that have warm nights.

Therefore, availability of grape varieties that research has shown to grow satisfactorily in the Oregon climate may help growers produce grapes of good quality for both commercial and domestic use, according to Yang.

**Grapes used domestically**

Main uses of grapes grown in Oregon are domestic—for grape juice, jelly, jam, butter, and to eat fresh. Some family growers produce their own wines. Commercial growers produce grapes for food processors, canneries, or wineries.

Grapes that grow satisfactorily in Oregon must mature before fall rains begin. Yang and Lagerstedt recommend varieties that will reach maturity, given a fairly warm summer, no later than mid-September.

Oregon’s principal vineyards now are located near Medford and Pendleton—areas that usually receive considerable summer sunshine.

The OSC vineyard is experimenting with 93 grape varieties from all parts of the U.S., Canada, and France, to find varieties suitable for Oregon growing conditions.

**Dark grapes most common**

Grapes fall into 4 “color” groups—dark red or blue, white, red, and golden. The dark red or blue grapes are probably most common and familiar to us all. They are used mainly for juice, jellies, jams, and that family favorite, grape butter.

White and golden grapes, which include seedless varieties, are most commonly used for dessert or table fruits and often are canned with other fruit mixes for salads and fruit cocktails.

Red grapes seem to fall midway be-
Main uses of grapes grown in Oregon are domestic—for grape juice, jelly, jam, butter, and to eat fresh. This Medford vineyard produces grapes for food processors, canneries, or wineries. Grapes have never been extensively grown in Oregon, probably because of our unusually cool, damp weather.

Among dark red varieties, Dr. Yang suggests Alden, Van Buren, Athens, or Hamberg. Alden is a large reddish-black grape with a mild flavor. Van Buren is one of the earliest Concord-type black grapes with a thick and highly colored juice. Athens is a large blue grape with a flavor similar to Concord. It has a low total acid content and moderately high sugar content. Hamberg is a purple grape of mild flavor with medium sugar content and fairly high total acid content.

White grapes recommended

White grape varieties tested by Yang and Lagerstedt include Perle De Csaba, Muscat Ottonel, Siebel 11342. Perle De Csaba grapes have a high sugar content and are low in acids. They ripen early in Oregon and have a pleasant flavor. Muscat Ottonel has a mild flavor, and is of medium acid and sugar content.

Red grapes tested included Siebel 8748, 8745, 13053, Seyve Villard 3-160, Black Prince, New York, Red Chasselas. The three Siebel varieties and Seyve Villard 3-160 are quite similar. They are dark red grapes with high sugar and fairly high acid content.

Black Prince, which is grown in eastern Oregon, has a high sugar content, and has a rich, dark red color. New York 12997 is a good quality dessert grape, dark red in color, with a sweet flavor. Red Chasselas is a pink grape of mild flavor.

Golden grapes tested include Iona, Muscatella, Muscat of Alexandria, and Red Mountain. Iona has a unique aroma and a mild flavor. The fresh grape, which has a moderately high sugar content, is a delicious dessert fruit.

Dr. Yang points out that "best use" of a grape variety is certainly not the only use. Most varieties can be used for juice, fresh fruit, and also jams and jellies. But the "best use" indicated is one for which a variety is particularly suitable.

### Grape Varieties For Oregon

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<th>Variety</th>
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Reduce Losses From . . .
Yellow Dwarf Virus

Even though no sure cure is known for this cereal disease, OSC researchers have suggestions to help reduce losses on Willamette Valley oats, barley, and wheat.

SO FAR, Eastern Oregon cereal crops have not been seriously affected by yellow dwarf virus. But Willamette Valley growers lost about 17% of their spring wheat, 4% of their winter crop.

THIS YEAR’S LOSSES from yellow dwarf virus are more than double those of 1958. Losses total almost a quarter of the Willamette Valley cereal crop, or nearly $4,700,000, according to plant pathologist Bill Raymer. Valley farmers lost nearly 10% of their cereal crop—close to $2,000,000—in 1958.

The oat crop, with 27% of the potential lost, was hardest hit. Barley was second, with a 22% loss. Spring wheat loss was about 17%, and winter wheat, 4%.

Raymer, who estimated these losses after talking with growers, warehousemen, and county agents, blamed this year’s drastic losses on an extra heavy aphid infestation.

Yellow dwarf is spread by aphids that carry the virus from perennial grasses into grain fields. Wheat, barley, and oats all are attacked, but barley and oats usually suffer most severely. None of our spring barley varieties are resistant to the disease, but corn is immune. Present research indicates most grasses are only carriers and are not appreciably affected by the aphids.

Severe damage sometimes can be avoided by early spring planting, according to OSC agriculturists, as aphids multiply and spread the virus most actively in spring when temperatures rise.

Grain sown in early spring, before aphids begin to travel, has a chance to become better established before infection becomes serious. If grain can reach the 4- to 5-leaf stage before infection, virus damage can be reduced and nearly normal yields will result. Nitrogen, at the rate of 40 to 50 pounds per acre, helps stimulate growth of the young grain.
Raymer points out that fall planted grain usually escapes serious damage from yellow dwarf since it is mature enough in the spring when infection takes place to resist the virus. Last year, however, some winter wheat was infected in the fall. Grain was stunted and yield decreased, because unusually mild weather permitted aphid activity into late November.

While yellow dwarf was first noted in the Willamette Valley in 1954, Raymer has since found evidence of it throughout Oregon. So far, Eastern Oregon cereal crops have not been seriously affected. Severe winter climate has prevented heavy aphid infestation early in the spring, and the main crop, winter wheat, is too mature in spring for virus infection to cut yields. Some late-planted spring barley in the Pendleton area was severely damaged in 1958, but there was very little damage east of the Cascades in 1959.

Raymer is working with entomologist E. A. Dickason on possible insecticide controls for the aphids that spread yellow dwarf. Results of this year's experiments were not encouraging because of the extremely heavy concentration of the aphids. The scientists are working toward development of an effective, economical control with insecticides. To date, none have been satisfactory.

Agronomist Wilson Eoote is working on breeding cereal varieties resistant to yellow dwarf. Eight or ten barley varieties out of several thousand appear to have resistance to the virus and these are being used as parents for new virus-resistant barleys. Research to develop a completely resistant variety may take at least 5 years.

Precautions to take

Meantime, OSC scientists recommend these main precautions against yellow dwarf virus:

- Plant winter grain.
- Plant spring grain early as possible when weather is satisfactory for growth.
- Plant in fertile, well-drained land.
- Use nitrogen—40 to 50 pounds per acre—to stimulate early growth.
- Plant virus-immune crops, such as corn or legumes, where possible.
Douglas Fir... Grown to Order

Research shows that Douglas Fir trees appear to inherit tendencies to grow tall or short, fat or thin. By grafting or careful selection and planting of tree seeds, it may be possible, someday, to grow desirable timber forests to order.

DOUGLAS FIR TREES, like humans, appear to inherit characteristics that make them grow tall or short, fat or thin. Geneticist Helge Irgens-Moller, after several years of experimenting with growth habits of Douglas fir trees, says these inheritable traits will help geneticists and foresters develop better forest trees for Oregon and other parts of the world.

When trees native to Corvallis are crossed with trees native to the coast, the offspring trees grow faster during their first three years, than either of the parent trees. At Corvallis, Irgens-Moller has planted seedlings from the entire range of Douglas fir—from the Mexican border to central British Columbia, and from the coast to Colorado. Results show that seedlings from the Oregon coast range have outgrown seedlings from any other area—except for those derived from crossbreeding.

The Douglas fir is our most important timber tree. It occurs naturally in many different areas—the wet, mild-temperatured coast, the high Cascades, and the dry interior plateau country. Botanists and foresters have wondered for years how the Douglas fir survives and grows in so many areas with different climates. How do trees from these various areas differ from each other? Would a Douglas fir seedling from British Columbia produce a healthy, high yielding tree when planted in western Oregon? Or should harvested tree seed, and seedlings, be planted in their own areas?

This long range experiment will help answer these questions and determine the practicality of further crossbreeding. For instance, it may be possible some day to combine the drought tolerance of Arizona fir with the rapid growth of Oregon coast fir.

Differences in growth rates already have shown up in the experiment. Trees from interior British Columbia stop growing about a month earlier during the summer than do plants from the Oregon coast.

Research shows that one reason for this different rate of growth is sensitivity of the trees to length of day. Coastal trees are not as sensitive to shortening of day as are trees from areas with severe climates. Only trees which do react to the natural decrease in day length by stopping growth well in advance of the first frosts or droughts are able to survive in severe climates. Since frosts or droughts are
uncommon on the Oregon coast, coastal trees have not developed this natural protection, and continue to grow later in the season even though the day is shortened.

Differences in sensitivity to day length also are evident in trees growing on the north and south slopes of the same hill. Although the reasons for these differences are not yet clear, Irgens-Moller points out they do show that trees from north and south slopes have hereditary differences.

This sensitivity to length of daylight, according to Irgens-Moller, warns us to plant tree seed in the area where it was harvested.

**Trees sensitive to temperature**

Douglas fir trees differ also in their sensitivity to temperature changes. For example, amount of exposure to low temperatures during winter has a strong influence on growth the following summer. Trees from the high Cascades need considerably longer periods of low temperatures during winter than do trees from the Pacific coast.

If high altitude trees are kept in a warm greenhouse all winter they fail to start growth during the spring and eventually die, according to Irgens-Moller.

Seedlings can, however, be induced to start new growth by exposure to low temperature or to a few hours of light during the middle of the night. Irgens-Moller exposes young seedlings to this night light treatment and gets, in one year, seedlings as tall as untreated trees 2 to 3 years old.

Research to determine if differences in shape of trees are hereditary is underway in cooperation with the U. S. Forest Service.

Selected trees from four different areas have been propagated by grafting and are being planted in four different areas across western Oregon. As these trees grow, scientists will learn whether the narrow crown and fast growth of the parent tree will appear at all four locations.

A narrow crowned tree, with a straight, well-formed trunk, is most desirable from the forester's point of view. In years to come, research may make it possible for lumbermen to grow trees to order.
New Chemicals Control Cheatgrass

CHEATGRASS may be completely controlled with newly developed chemical combinations, reports associate agronomist W. R. Furtick. These chemicals may remove the necessity for moldboard plowing—and may make tilling completely unnecessary on many eastern Oregon farms.

Two new chemical combinations, developed by scientists at OSC and the Pendleton Branch Station, are now in the final phases of testing. Amitrol plus 2,4-D, and amitrol plus Atrazine are being applied alternately to test plots located on Columbia Basin farms.

Test plots weed free

Test plots at the Pendleton and Sherman Branch Stations were kept weed free for 11 months with a single application of the amitrol-Atrazine type combination. Excellent wheat was grown in these plots without plowing.

Chemicals were applied after cheatgrass, volunteer grain, and other weeds germinated in the fall. In all experiments so far, both combinations kept wheat stubble completely free of weeds, grass, and volunteer grain during the winter. Weeds didn't have to be turned under in the spring, and wheat was seeded with a deep-furrow drill into the undisturbed stubble.

Spring weeds also were killed with a sweep that left stubble undisturbed, and valuable soil properties weren't endangered by moldboard plowing.

Moldboard plowing kills cheatgrass but has always been an enemy of soil conservation. The plowing that uprooted the cheatgrass also dug up the wheat stubble—and left the loose soil open to erosion from wind and water.

The project to find chemicals that would kill cheatgrass and still not damage wheat was begun in 1952, and OSC scientists have screened approximately 400 chemical combinations that were toxic to weeds.

The final test, now in process, will determine whether the chemicals have side effects that would make them dangerous under any possible conditions. Over 20 farms in the Columbia Basin, located in areas with various climatic conditions and rainfall patterns, are using the new chemicals on test plots.

Following this final test, the Food and Drug Administration will need to approve the treatment to be sure the chemicals are not harmful for human consumption. The combinations probably will be released within a year.

With the development of these chemical protections against grass and weeds, stubble mulching can become a successful method of conservation farming throughout Oregon.

Dehydrated Cherries
Good in Pies, Cobblers

Montmorency cherries dehydrated by a new method are brighter red and have a more delicious flavor than cherries dried by usual methods, according to food technologist Earl M. Litwiller.

The new treatment, which Litwiller developed for use of the Armed Forces, results in cherries that retain their color and flavor even when stored at high temperatures.

Cherries are blanched in steam, sugar is added, and the fruit is frozen. Additional time required by the freezing permits sugar to penetrate the cherries more completely than in conventional processing methods. When thawed, the fruit is soaked in a sulfite solution and then dried in a tunnel dehydrator for 8 to 10 hours. A vacuum chamber has also been used for drying, and the processed cherries have been somewhat plumper than those dried in a tunnel dehydrator.

For reconstitution the dried cherries are boiled slowly in a weak sugar solution for 30 to 45 minutes. Then they are allowed to stand for several hours to become more plump. Pies and cobblers made from these dehydrated cherries are as delicious as those made from canned fruit.
Fine Quality Hay From New Drier

A new hay drying building that also can be used as a barn has recently been completed at the Astor Branch Station in Astoria. New drying equipment that forces hot air down through baled hay produces artificially dried hay of excellent quality, according to Herb Howell, station superintendent.

Since hay drying lasts only a few months out of every year, the drying shed was designed to be used for experimental feeding of calves during the winter.

The building is a pole frame structure 28 x 100 feet, with roof and sides of galvanized iron. Since all hay drying equipment is hung in the gable, the floor is free for feeding trials. Feeding mangers and stall dividers are attached to pipes sunk in the concrete floor.

During hay season, slat bottomed trailers with tight sides are loaded with baled hay in the field and driven into the drier shed. Canvas hoods, connected with overhead air ducts, are clamped tightly to tops of the trailers. Hot air is forced down through the baled hay and out the bottom of the trailer.

During early experimental runs more than 28 tons of hay were dried at an average cost of $2.94 per ton. Howell estimates that cost in actual day-to-day operation probably would be lower. Forage dried included meadow foxtail, big trefoil, red clover, rye grass, and white clover.

To assure even drying, Howell used a tedder designed to lift and throw the newly mown hay. If hay bunces during mowing and raking, some bales tend to be damper than others and artificial drying is difficult.

Bales short and light

Bales were exceptionally short and light—27 to 30 inches long and weighing about 35 pounds—to avoid shrinkage after drying. When long bales are dried artificially, they may shrink and fall apart during storage and handling.

Fine quality of hay produced in this new drier is probably due to several factors, according to Howell.

- The new drier forced hot air down, instead of up, through the hay. Since the heater is one of the heat exchanger type, no fumes go through the bales. Hence, hay was free from odors.
- The tedder followed the mower in the field and hay was cured rapidly and evenly.
- Short, loosely packed bales simplified drying, shrinkage, and handling problems.
- Improved species of grasses and legumes, that have been developed over the years, were used, and original forage quality was good.

Superintendent Howell reports that this newly dried hay is as acceptable to cows at the Astor Station as good grade alfalfa.
Farm Outlook . . .

(Continued from page 3)

fall rains and snows have brought moisture to California and the Rocky Mountain area. They have also greened wheat fields in Kansas and surrounding wheat pasture areas.

Even so, this improvement doesn't seem likely to be enough to push either feeder or fat cattle prices up this fall. It will just keep them from slipping quite as much as they might have.

Strongest forces in the current cattle market picture are the high level of employment, record incomes, and the strong consumer preference for beef. Also favoring feeder cattle is the abundant supply of corn and sorghum grain in the Midwest and Southwest.

On the other hand, the fat cattle market is under pressure of record numbers in feedlots and large supplies of pork and poultry. Recent reports indicate that credit restrictions are not a strong factor in the market.

Hogs

Hog producers may be easing up some on further increases in pig crops. Late August surveys in the Midwest revealed that fall farrowings were not increased as much as planned earlier. They also showed plans to farrow fewer sows this winter than last. To what extent these plans may have been modified by improved corn crop prospects and other factors remains to be seen. For the time being, it seems safest to plan that the worst hog prices in the current cycle will come next fall.

Sheep

Chances are foreign suppliers will continue testing the U. S. lamb and mutton market. So far they have found the market rather thin and easily depressed.

Meanwhile, pelleted feeds are giving a boost to lamb feeding in Oregon and other parts of this country.

Dairy

Pressures to increase efficiency in the dairy business continue strong. Prices of feed, labor, and other costs of Willamette Valley dairymen have averaged the highest on record for this time of year. In the fall of 1952, when costs approached the present level, dairymen were receiving a cent a quart more for bottled milk and consumers were paying at least 2 cents less. During the past seven years, wages and other costs of processing and distributing milk have risen considerably.

Poultry

Prices in store for poultrymen this fall and winter should be better than last winter, although they may not exactly be good.

The number of pullets going into laying flocks will be well under last year, but more hens may be held a second year. On balance, egg production is likely to lag last winter and spring.

Likewise, the broiler industry is applying the production brakes as the slow last quarter of the year approaches.

Cold storage holdings of turkeys well under the past fall are giving a firmer tone to the market. Odds are prices will average a bit better this fall than last.

Potatoes

The potato market picture looks quite bright, mainly because the fall crop is about a tenth smaller than last year. But don’t shoot for the moon. Potatoes aren’t exactly scarce. There is a rather large crop in the Midwest and no evident shortage on either the east or west coasts.

This is a year when it should pay to follow markets closely. Market information can help growers and shippers alike to become better sellers. Some may wish to form “market study” groups, patterned after investment clubs, to analyze information and pool judgments on how to do the best job of selling.

Strawberries

Strawberry growers across the country are planning about the same acreage for 1960 as harvested this year. Among the big four processing states—California, Oregon, Washington, and Michigan—growers in the first two are planning modest increases while the other two are holding even with the past season.

The quantity of frozen strawberries to market this winter is only slightly smaller than the past year. Recent studies indicate that Oregon’s competitive position in the strawberry business is about on a par with its neighbors to the north and the south. But don’t take too much comfort in this. Changes in any of a number of factors could disturb this neat balance.