

CONTROL OF PEACH DISEASES

Brown Rot, Crown Gall, Leaf Curl, Rosette and Yellows, are the Principal Diseases Which Affect Peach Trees—These Can Usually be Easily Controlled by Proper Spraying.

By C. H. THOMPSON

The peach is grown over a wide range of country, but its really successful commercial culture is limited to a comparatively few localities. The main difficulty in growing the peach lies in the early swelling and blossoming habit of the flower buds. A week or so of mild weather in winter or early spring may start the buds into growth, only to be killed by a subsequent frost. The danger is even greater in the south than in the north, since the winters are so much warmer and the buds start into growth earlier.



Peach leaf curl.

One of the main problems in peach culture is to select a location for the orchard where the buds are least likely to start into growth and bloom before settled weather comes in the spring. The rule is to avoid low lands for peaches; late frosts are severest there. Orchards planted on sunny southern slopes come into bloom early. Avoid such locations when possible. A high situation, where the cool air will flow off down to lower levels, and a northern or western aspect is generally the best for a peach orchard.

There are several diseases of peach trees which also cause destruction if not promptly controlled, but as proper spraying will accomplish this, there is really no reason why a peach orchard should show a loss on account of diseases.

The brown rot is a most destructive disease of the peach. It thrives best in warm, moist weather and under favorable conditions may affect the flowers. The disease may also affect the twigs and is often referred to as "twig blight." "Mummy peaches" are caused by this disease. These should always be removed. Bordeaux or self-boiled lime-sulphur combined with arsenate of lead controls the disease. Spray just after the blossoms fall with arsenate of lead. Two weeks later spray with Bordeaux and arsenate of lead. Apply Bordeaux every ten days or two weeks until fruit begins to color.



Brown rot of peach.

Crown gall forms knobby galls on the lower part of the trunk and roots of peach trees and is very easy to detect. Trees affected with this disease should never be planted. If such

are sent you from the nursery, refuse to accept them. Leaf curl is a disease which is very widespread, being found practically everywhere the peach is grown. Loss from this disease has been estimated to be more than \$3,000,000 in a single year. It appears as soon as the buds begin to open and shows a characteristic curling of the leaves and deeper green color. The twigs are also affected and become swollen and have a lighter color. The fungus lives from year to year in the twigs and the infection in the spring is probably from them. Spraying as for the brown rot will keep this in check. Self-boiled lime-sulphur wash is said to be especially valuable for this disease. Trees sprayed for San Jose scale need very little additional treatment for the leaf curl.

Rosette is a contagious disease for which no positive remedy has yet been found. The cause of the disease is unknown and the best remedy is to dig up and destroy the tree. The disease appears as compact tufts or rosettes. The leaf buds do not elongate but grow in compact tufts 2 or 3 inches in length. Trees becoming affected in the spring die the following fall or winter.

The yellows, like the rosette, is a serious disease of the peach. It appears as a yellow discoloration on the leaves and causes premature ripening of the fruit and death of the tree. To control this disease, spray with lime-sulphur if San Jose scale is present. If lime-sulphur is not used, spray with copper sulphate solution before buds open. Spray with weak Bordeaux and arsenate when fruit has set. Repeat the latter 10 to 14 days later. Again repeat about one month before fruit ripens. Ordinarily where San Jose scale is not present three or four sprayings will be sufficient.

The most important feature of the home grounds is a good lawn. A mixture of dry pounds of pure Kentucky blue grass, five pounds of redtop and three pounds of white clover per acre makes a good lawn.

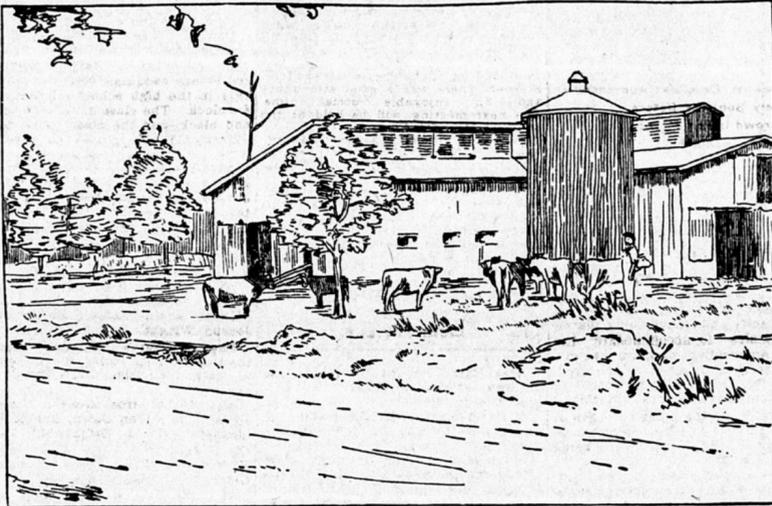
All old wood should be removed from the rose bushes.

THE SOUTH AS A FIELD FOR BEEF PRODUCTION

The geographical location and the climatic conditions of the south are such as to make it a good section for cattle raising. The soils are varied that what may be said in a general way will not hold true for all places or sections of this large area. They vary from light sand to heavy clay, or to the black prairie soils, or the stiff post-oak. As a rule the stiffer soil and the greater the content of lime in the soils, the more nutritious the grasses are, and the greater is the variety of clovers which will grow. The Piedmont section of Virginia, West Virginia, western North Carolina, Tennessee, and northern Alabama is a fine grazing country, and thousands of good beef cattle are found there. The shorthorn is more popular than any other breed in this region, and they do exceedingly well. The grazing plants are chiefly blue grass, white clover, red clover, red top and orchard grass. The cattle fatten very rapidly during the grazing season and raise excellent calves. Most of this region is free of ticks and the losses from death are relatively small.

The black prairie section of Alabama, Mississippi and Texas, and the delta lands of Mississippi and Louisiana, are extremely favorable sections for raising and finishing beef cattle. Experiments conducted by the Bureau of Animal Industry and the Alabama Experiment Station show that cattle when kept free of the cattle tick, can be raised at a cost of 3 to 4 cents a pound. This cost includes the keep of the cows for one year, charges for pasture and all feeds consumed at market prices, depreciation in the value of the herd, and 6 per cent interest on the money invested. The principal native grasses which are indigenous to these soils are bermuda, Johnson grass, lespedeza and melilotus; but red clover, alsike clover, bur clover and white clover grow readily when planted in the pastures, and the grazing season can be extended greatly by their use. Alfalfa, soy beans, cowpeas, corn, sorghum and other forage crops do well on these lands and produce an abundance of roughage and hay for wintering and fattening the cattle. The red clay soils produce crops very similar to those mentioned for the prairie soils.

There are great areas of "cut-over" lands in the south that range in price from \$2 to \$10 per acre, which could be used for beef production. The soil of such lands is usually sandy or post-oak, neither of which are as good for grazing as the prairie or delta lands, but which would furnish good grazing if a little care was taken in getting pasture plants started. On these soils carpet grass, bermuda, lespedeza, white clover, red top, Paspalum dilatatum, and bur clover do exceedingly well. The carpet grass furnishes abundant grazing on the sandy lands while the bermuda does better on the soils which are a little stiff. The paspalum, white clover, and red top do well on the damp lands, and if some lime is present alsike clover will furnish fine grazing. The foundation of all pastures on sandy or sandy loam lands should be carpet grass, bermuda and lespedeza. The variety of forage crops which may be raised on this type of soils is large, and it is an easy matter to grow all



FINE BUILDINGS AND GOOD STOCK ON A LOUISIANA STOCK FARM.

LARKSPUR OR "POISON WEED"

The Tall and Low Larkspurs Cause the Loss of a Great Number of Cattle Annually—These Losses Occur Almost Entirely During the Months of May and June.

By C. D. MARSH

The larkspurs have been known to be poisonous from the time of the ancient Greek and Latin writers to the present. It is only in North America, however, that they have been important as causing losses of

of the plant to harm them. Sheep are not injured by larkspurs and can eat large quantities of them without harm. The low larkspur is poisonous during the whole of its life, but the plant disappears the last of June or early in July. Poisoning from it occurs, therefore, only in the months of May and June. The tall larkspur grows through the entire season, and as it matures the leaves lose their poisonous properties, so that after the middle of August they cease to be poisonous. The seeds are more poisonous than the leaves, and occasionally cattle die rather late in the season from eating them.



Low larkspur.

The first symptom of larkspur poisoning is ordinarily the falling of the animal. In the experimental poisoning it has been found that this falling was preceded by a lack of appetite and general uneasiness, with a stiff and staggering gait. When the animal falls it goes down suddenly, the legs appearing to crumple up under it. In the lighter cases the animal will hold its head erect and after a time will get upon its feet, only to fall again shortly. While the motions of the animal when down may be described as convulsive, it can hardly be said that the poison produces convulsions. The kicking seems to be due largely to attempts to rise rather than to involuntary contractions of the muscles of the legs. Poisoned animals are always constipated and usually recover if this condition can be relieved. In all severe cases the animals are nauseated and death frequently results from the contents of the first stomach getting into the

windpipe. Many of the cases in which poisoning is not severe will recover if care is taken to turn the animal after it falls, so that the head will be higher than the rest of the body, and to see that it is not further disturbed.



Tall larkspur before blossoming.

stock. The recorded losses in North America have been almost entirely in the western section and in Canada, although isolated instances of poisoning are known in the east. In the cattle ranges of the west probably no poisonous plants, with the exception of the loco weeds, have caused such heavy losses to the stockmen. It is difficult to estimate with any degree of accuracy the extent of these losses. A conservative estimate based on reports from a large number of ranges indicates that the annual loss is from 3 to 5 per cent. A great many of the stockmen who have reported upon this subject have given an estimate of 5 per cent. Specific cases are known where from 20 to 50 cattle have died out of a single herd within a few hours, and other instances are recorded in which individual stockmen have lost as many as 200 head in a season. These losses are attributed to larkspurs, since they have occurred on ranges where larkspurs are abundant.

Small quantities of larkspurs can be eaten with impunity. Experimental work shows that an animal must eat about 3 per cent of its weight before being affected, and that average cases eat from 8 to 9 per cent of their weight. Horses are not poisoned unless they eat a considerable quantity. On the range horses never eat enough

Making the Dairy Profitable

With good cows there must also be good feeding. The dairy cow cannot produce milk without a good supply of nourishing food from which to produce the milk. Also the food given might be very rich in feeding value but often not enough of it is fed to the cow.

Thus the cows get only food enough to maintain their bodies and very little of it goes to the production of milk. This, of course, would be feeding at a loss when a little more food added to this would all be turned to milk as the other food has already supplied the wants of the body and this extra food is the paying food. The milk it produces pays for all the food and leaves a clear profit beside.

Therefore, can we afford to withhold this extra food and feed only enough to maintain the body? Such feeding would certainly not be profitable. So, in place of economizing with the feed it would be better to give the cows a rich supply and get the milk which, after all, is what we are feeding for.

But there comes the question of what is a good supply of food? We might supply the cows with an unlimited amount of food, in fact we might supply them with all they can consume and still get no milk flow of worth if such food does not contain the proper nutriment. It is not only a bulk of food that is necessary but it is the nutritive value of the food given that counts.

As concentrated foods are the richest in food value the cows should be supplied with such food as wheat, bran and ground corn at least twice a day with their ration.

This gives them a high per cent of protein and fat which they cannot get from the hay. So careful studying of the rations and using good judgment in feeding will bring about the desired results.

Food feeding is an utter waste of the food that the cows eat and the time and labor of caring for them, while the good feeding will pay for the feed and the labor and leaves a clean profit. Can we then afford to withhold the necessary food?

If the dairy is not paying there is something wrong. Either the cows are poor or the management is poor. There is a way to make it pay. Let us study our business and seek the way to make it pay.—G. H. G.

For every cherry that a robin eats, he should be credited with destroying perhaps thousands of injurious insects.

Hen Manure

The poultryman or farmer can materially add to the profits of his business by properly caring for the droppings of his fowls. For example, it is shown that the droppings from 1,000 fowls if preserved without needless loss are worth at least \$300 per annum, and this estimate is based on the assumption that less than half of the droppings, or only 30 pounds per hen per year, can be collected.

According to the Maine station, the droppings should be collected daily, and mixed with substances which will (1) prevent loss of nitrogen, (2) add sufficient potash and phosphoric acid to make a better-balanced fertilizer, and (3) improve the mechanical condition of the manure so that it can be applied to the land with a manure spreader.

This can be done as follows: To each 30 pounds of the manure add 10 pounds of sawdust, good dried loam, or peat, 16 pounds of acid phosphate, and 8 pounds of kainit. Such a mixture will contain about 1.25 per cent of nitrogen, 4.5 per cent of phosphoric acid, and 2 per cent of potash, which, used at the rate of 2 tons per acre would furnish 50 pounds of nitrogen, 185 pounds of phosphoric acid, and 80 pounds of potash, and at the present price of fertilizing ingredients is worth about \$10 per ton. The mixture would furnish a well-balanced stable fertilizer, which, although not fine enough to work well in drills, can be successfully applied with a manure spreader. The treated manure should be well sheltered until time to apply to the land—this is, shortly before plowing.

HIGH COST OF MARKETING.

Improve the roads first by which farmers must market their produce, then look to the betterment of the cross-country roads. That is the advice of Dr. H. J. Waters, president of the Kansas Agricultural college. President Waters addressed a meeting of farmers recently on "The Farmer's Part in the Good Roads Program."

Ten per cent of the Kansas public highways carry seventy-five per cent of the total traffic, the president said. Figures in the office of the state highway engineer show that it costs eleven million dollars every year to get the surplus products from the Kansas farm to the railway station. If this ten per cent of road were improved a saving of three million dollars a year to Kansas farmers easily would be effected.

Study individual tastes in the cows, and feed accordingly.

CEDAR RUST ON APPLES

Cedar rust is a fungous disease of the red cedar tree, the spores of which infect apple orchards and destroy the crop, and the spores produced on the apple tree are blown back by the winds to the cedar trees, which are again infected.

The fungus remains on the cedar during the winter, enclosed in galls.



Apple rust or orange rust of apple, showing summer stage on apple leaves.

like formations which are termed "cedar rust apples." As spring and warm weather approach, with spring rains, the apples swell, become gelatinous and send out long jelly-like protuberances filled with innumerable spores. In warm sunshine these dry and the spores, blown by the wind,

are carried to apple orchards where the work of infection promptly begins, attacking first the foliage, then the fruit and so weakening the trees that they become easily susceptible to other insect and fungous diseases.

It will be seen this operation takes on the aspect of a continuous performance. The cedar tree is a harbor and propagating ground or hibernating refuge, during the winter. The apple tree plays the disastrous part of host to the swarming parasites in the summer, the net result being damaged apples and probably the life of the tree in addition. The ravages of cedar rust cost apple growers in Virginia \$500,000 last year alone.

The agricultural experiment station of Virginia has recently issued a bulletin covering certain detailed experiments concerning the control of cedar rust on apple trees.

The spraying experiments carried on by the Virginia station in gathering accurate information for the bulletin proved first that it is cedar trees which are responsible for the disease which begins there, and that the disease can be very largely controlled. A number of sprays were used and the number of twig infections noted thereafter. With lime-sulphur there were fifty-five twig infections of the season's growth with three sprayings. With two sprayings there were ninety-four. Three sprayings of atomic sulphur still left an average of eighty-two infections per twig, with copper lime-sulphur, three sprayings on two trees, the number of twig infections were two and three, respectively. Bordeaux proved more effective than lime-sulphur, as did iron bordeaux. The most effective spray was cop-

per-lime-sulphur, a new spray, in that copper sulphate or blue-stone is added to the well-known lime-sulphur solution. The effect of spray on the germination of spores showed the highest percentage of effectiveness to be with pyrox guifocid and bordeaux mixture. The first two showed no germination of spores after spraying.



"Cedar apple," the winter stage of apple rust on common red cedar. Remove all cedars from vicinity of orchard.

Bordeaux mixture killed all but 11 per cent. The remedy offered by the experiment station is cutting down and burning the cedars. Where cedar trees have been removed there is no sign of rust in apple orchards. The infection disappears.

WHY SOME FAIL.

These are some reasons advanced for why so many people have made failures in their attempts at poultry keeping:

"They are untrained by their tastes to succeed in an enterprise of this sort."

"They have attempted too much before acquiring experience."

"They have invested too much capital at the start."

"They lacked business training in disposing of their products."

It is surprising how much fine charcoal little chicks will eat. Keep it fine and give it them all the time. It is a necessity and is one of the best stomach and bowel correctors there is.

THE DAIRYMAN'S RESPONSIBILITY.

The eradication of tuberculosis is the task of the dairyman with the assistance of the State. The responsibility for the existence of tuberculosis and its continuance rests with the owners of the infected cattle. Remarkable progress has been made in eradicating tuberculosis without great loss in several dairy sections. The men above all others who should regularly test their cows are the ones whose herds are free from the disease. Constant vigilance is necessary to keep a herd of dairy cows free from tuberculosis.

PLOWING.

Plowing, though seemingly a simple process, is easily the most important operation in the tillage of the soil. Upon it depend to a great degree the nature of later operations and the frequency with which they will be required. In fact, unless land is plowed in the best manner possible, and at the right time, the preparation of the land for growing a crop will require additional labor and cost. It may even be impossible to prepare a good seed-bed when plowed under certain conditions.

Rye straw makes the best bedding for stock. Do not be too economical with it. Place a foot deep under the stock.

Deep Furrows

By GUM

A balky team and a lazy hired man is a combination that makes for a light crop.

To thoroughly test your fences try turning out your lot of young hogs. If they stay in the fences are all right.

The warm, sunny days are fine for automobile driving. They are also fine for farming. Which are you doing?

For your quick trips to town a gallon of gasoline is better than a ton of horseflesh.

After a hard day's work your wife may be too tired to play, but just the same she is glad to have the piano you bought her for Christmas.

We once knew a farmer who utilized the rainy days to pick the chickens. The wet season was very trying on these poor fowls.

CHOOSING A HEN TO SET.

It is quite essential to choose a hen of quiet demeanor and steadfast purpose to accomplish what she has undertaken. One of the wild, noisy, flighty kind should not be considered for a moment for such a hen is almost worse than none at all. Visit the house at twilight, lift the hens that are on the nest showing an inclination to set by the feathers of the back. One that flies from the nest and squawks is not the kind you want. It is possible, though, that she may tame down a little in two or three days, so give her another trial. The hen that, after being lifted a little above the nest, is quick to resume her place and scolds you a little for disturbing her, even perhaps picks you in resentment, is the one you want for the real business of setting. Remove her to the box prepared for her and shut her in until the next morning, when she should be allowed to come off or be taken off for food and drink. She will probably return to the nest herself, and in case she does not, put her back and try her for another twenty-four hours. If on the third trial she does not return to her nest of her own accord, discard her and try another.

If beginning in the poultry business be sure you get healthy stock or eggs from healthy stock.

Look well after the early chicks. They will pay well if given good treatment, otherwise it is best to not have any at all.

Repair Your Own Farm Tools

An investment of \$30 to \$40 in tools will be saved on the average farm, say of 100 to 150 acres, often within a single year. In addition to the money saving there is always a tremendous saving of time where the repair work can be done at home.

It doesn't require a large shop or a great many tools that will enable one to do everything that should be done to farm machinery. Of course in the breakage of heavy parts these must be supplied by new ones but often an ingenious man can repair these parts and the machine kept going until the new parts can be received from the manufacturer.

The most important thing in the workshop is the portable forge. These can be bought for from \$2.50 up to \$15; a very good forge being priced at about \$8.

Next, a small anvil is needed, which will cost about 3 cents per pound. An 80-pound anvil is heavy enough for ordinary work on the farm.

A combination vise, anvil and drill is a most useful tool and if this is installed a regular anvil is not needed. A good vise is also essential. This should be of wrought steel, strong enough to stand heavy for a poor vise is an abomination.

Here is a list of tools which will fit out any farm workshop in fine style, besides saving money on repairs, will give the boys an opportunity to learn a great deal about the proper use of tools:

- Combination vise, anvil and drill, \$ 4.00
- Portable forge, 8.00
- Two pairs tongs, 1.00
- One forging hammer, 1.00
- Sledge hammer, 1.50
- Two pairs tongs (20 inches), 1.00
- One riveting hammer, 1.50
- Drill and set of drills, 15.00
- Set of files, 2.00
- Small tools, 3.00

\$38.00

For the drill press there may be substituted a common ratchet drill which will cost about \$5, or a chain drill at \$2. These will do very good work and would therefore reduce the cost of the above outfit to about \$23. Good time to install a tool shop of this kind right now.

If the poultry refuses to go into the roosting house at night, look for the little insects that make their lives miserable.

Goats come from the bacteria in your mouth, teeth, nose and throat; therefore keep these parts clean.