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KENTUCKY FRUIT NOTES

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KENTUCKY CODLING MOTH TEST WITH DDT—1945

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Codling moth has long been the main insect problem in the production of apples in western Kentucky. Because of hot, dry weather and a light crop, in 1944, many Kentucky apple crops were literally eaten up that year. In 1945 it was highly desirable to get some Kentucky results with DDT because many schedules using arsenate of lead or nicotine had not stopped the worm attack in 1944. By setting up a cooperative Experiment Station project, one grower was authorized to purchase enough DDT to spray a sizable commercial block with a fortified DDT program. The test was run in the Park Orchard of the Kentucky Cardinal Farms at Henderson. This orchard has long been heavily damaged by codling moth, with several crops virtually wiped out.

In setting up the experiment, it was decided to use a mixture of arsenate of lead, DDT and summer oil in the first-brood sprays, and nicotine, DDT and summer oil in the second-brood sprays, since these mixtures had shown up well in 1944 in Steiner's tests at Vincennes laboratory of the Federal Bureau of Entomology and Plant Quarantine. A check plot left for comparison got arsenate of lead and summer oil in the first brood and nicotine and summer oil in the second brood. The

Table 1. Spray Schedules Used in 1945 DDT Spray Tests at Henderson, Kentucky

	Check Plots		DDT Area	
Spray	Date Started	Materials per 100 gal.	Date Started	Materials per 100 gal.
1st Cover	4–18	4 lbs. arsenate of lead, 4 lbs., lime 1-1-100 bordeaux; (lime-lead arsenate only on Golden Delicious)	4–18	4 lbs. arsenate of lead, 4 lbs. lime; 1-1-100 bordeax; lime-lead arsenate only on Golden Delicious
2nd Cover	4–30	4 lbs. arsenate of lead, 1-2-100 bordeaux	4–30	4 lbs. arsenate of lead, 1-2-100 bordeaux; 6 ozs. actual DDT
3rd Cover	5–14	4 lbs. arsenate of lead, 1-1-100 bordeaux, 2 qts. summer oil	5–14	4 lbs. arsenate of lead, 1-1-100 bordeaux, 2 qts. summer oil, 6 ozs. actual DDT
Top Off	5–18	Same	5–18	Same
4th Cover	5–23	2 lbs. arsenate of lead, 1-2-100 bordeaux, 2 qts. summer oil	5–23	2 lbs. arsenate of lead, 1-2-100 bordeaux, 2 qts. summer oil, 6 ozs. actual DDT
5th Cover	6–13	2 lbs. Black Leaf 155, 2 qts. summer oil	6–4	2 qts. summer oil, 8 ozs. actual DDT
1st 2nd Brood	6–23	3 lbs. Black Leaf 155, 2 qts. summer oil	6–21	1-2-100 bordeaux, 2 qts. oil, 8 ozs. actual DDT
2nd 2nd Brood	7–10	Same	7–11	2 lbs. Black Leaf 155, 2 qts. summer oil, 6 ozs. actual DDT
3rd 2nd Brood	7–26	Same	7–26	2 lbs. Black Leaf 155, 8 ozs. actual DDT
3rd Brood Spray	8–31	3 lbs. Black Leaf 155, 1 gal. summer oil	8–29	2 lbs. Black Leaf 155, 13 ozs. actual DDT

CIRCULAR OF THE KENTUCKY AGRICULTURAL EXPERIMENT STATION, LEXINGTON, KENTUCKY

sprays were applied with a stationary spray plant with approximately 500 pounds pressure, all spraying being done from the ground with single nozzle guns. The trees, 20 to 32 years old and some of them very tall, received 12 to 15 gallons spray per application. Pressure was enough to give good coverage. Because of the spray pipe arrangement, the check plot consisted of 27 trees on the north-west corner of the DDT area.

An intense prebloom spray and dust program was carried out that gave good scab control. A calyx spray of arsenate of lead, sulfur and lime was also applied to all trees alike. The first cover spray was also alike, and is given below. The DDT sprays were started in the second cover and continued according to the schedule on page one.

Seasonal Observations

During most of the summer the DDT area was virtually free of worms and it was difficult to find even a stung fruit. At thinning time a wormy apple was very rarely encountered and the arsenate of lead plot was almost as clean. The sprays were continued at ten day to two week internals until late July. Inspections early in August uncovered practically no worms at all and this continued until late in the month. However, when Grimes harvest got under way late in August there was a surprising number of tiny worms entering the fruit in both the arsenate-nicotine plot and the DDT area and another spray was decided upon, which was applied from August 29 to September 1. This effectively stopped the late worm attack and no more trouble developed. This late worm attack is reflected in the harvest counts for the Grimes variety since practically all worms found in this variety were very tiny worms just starting in the fruit.

Record Taking

In getting the records, at harvest, it was decided to pick 200 fruit samples from several trees of each variety and to make individual tree counts in the DDT and non-DDT areas. From each tree sampled, 50 apples were picked at random from the top fourth of the tree, 100 apples from the middle half of the tree and 50 fruits from the lower limbs. The records from each part of each tree were kept separate as to the number of worms and stings and other defects. It was interesting to observe that the largest, best-colored fruits came from the upper portions of the trees and that this is where most of the insect-injured and diseased fruit was also found (see Table 3).

Table 3. Codling Moth Injuries in Different Parts of Trees, All Varieties Averaged Together.

	DDT Program		Non-DDT Program	
	% Wormy Fruit	% Stung Fruit	% Wormy Fruit	% Stung Fruit
Top	8.7	16.0	19.0	17.4
Middle	4.6	9.4	7.6	15.3
Bottom	.3	6.0	3.2	19.2

Discussion

Excellent codling moth control was obtained using a small quantity of DDT (six ounces of actual DDT per hundred gallons of material) in

Table 2. Comparison of Codling Moth Injury to Apples in 1945 Spray Tests.

Variety	Materials	% Wormy Fruit	% Stung Fruit	Injuries per 100 fruits	
				Worms	Stings
Grimes Golden	Lead Arsenate-Nicotine only	15.0	25.0	17.0	35.0
	DDT added	13.0	19.0	15.0	24.0
Turley	Lead Arsenate-Nicotine only	7.8	17.0	9.6	27.2
	DDT added	.5	6.3	.5	7.5
Golden Delicious	Lead Arsenate-Nicotine only	5.2	15.2	6.8	19.8
	DDT added	.8	5.7	.8	6.6
Stayman	DDT added	5.0	12.0		

combination with summer oil and lead arsenate in the first brood and combined with fixed nicotine (14%) in the second and third brood sprays. This area produced the finest crop of sound apples that has been grown there since the orchard reached full production. Very good control was also obtained where the arsenate of lead and nicotine schedule was used without DDT, but it is thought that the nearness to the check plot of the larger DDT sprayed area influenced results in the check plot perhaps by killing some adult moths that flew into the DDT area from the check plot. It is also thought that many adults entered the DDT block in mid to late August from a large, poorly sprayed block one-half mile south of the test block which was heavily infested with codling moth. At any rate, the fact that the DDT area was clean on August 8 and was being hard hit by the end of the month emphasizes the fact that one must be on the lookout for a worm outbreak up to harvest time, regardless of the program used. A bit more foliage and fruit russet injury seemed to be present on the DDT areas; but this will doubtless vary from year to year. Some European Red Mites developed late in the season on a part of the trees in the DDT plot, but caused no real injury.

This test showed that a small quantity of DDT added to the regular arsenate of lead and nicotine spray program and continued over the season could give excellent codling-moth control in western Kentucky. As shown in Table 3 the greater percentage of wormy apples was found in the tops of trees. The higher percentage of worms in Stayman fruits is thought to be due to the fact that that portion of the orchard was not pruned as well as the Golden Delicious and Turley portions and was therefore more difficult to spray well.

ORIENTAL FRUIT MOTH CONTROL

EXPERIMENTS IN 1945

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Though the oriental fruit moth **Grapholitha molesta** (Busck) has been in Kentucky less than 20 years, several commercial peach orchards have suffered considerable damage to the Elberta crop. Oriental moth injury in a few orchards in western Kentucky has amounted to as much as 25 to 50 percent of the crop in some years from 1942 to 1945.

An attempt was made in 1945 to see what control of oriental moth could be had under Kentucky conditions with DDT. Driggers (1944), in New Jersey, had found that one spray of DDT (Gesarol), using 1 pound of actual DDT to 100 gallons, applied at the beginning of third-brood oriental moth larval entry, reduced worm injury greatly.

For this experiment a uniform block of young Elberta trees, in their sixth growing season, was selected in the Eison and Sons orchard at Ledbetter, Kentucky. This orchard had suffered severe fruit injury in previous years and injured twigs were abundant in 1945. A latin square was laid out using 5 replications each of 5 treatments. Each plot contained a single row of six trees and each plot was separated both ways from adjacent plots by a buffer row which received two nicotine (Black Leaf 155) — sulfur sprays identical with that used in Treatment 5 (See Table I). Harvest ranged from 3½ to 4 bushels per tree.

Two applications were made of each treatment. These were timed at one month and two weeks ahead of harvest, respectively. Wettable sulfur or sulfur dust for the control of brown rot was included on all plots. The first application, on July 10, was made in the afternoon of a clear, dry, warm, quiet day with a maximum temperature of about 80°F. The second application, July 24 was made in the afternoon of a clear, very hot, rather humid, quiet day with a maximum temperature of about 100°F. Sprays were applied by two men riding non-stop on a platform behind a tractor-drawn power take-off spray rig, using single-nozzle guns with rather large openings and operating at 500-600 pounds pressure. One side of a plot was sprayed at a time with a round trip giving a two-side application of all sprays and dusts. Dusts were applied with a small power rotary duster mounted on the sprayer. The foliage on the trees was dense and very vigorous but the trees were beginning to spread due

to the heavy crop of fruit. The sprays were well-applied, but it was thought that a bit more power was needed for fully satisfactory dust applications.

Description of Treatments

Treatment 1—Two DDT-sulfur sprays. July 10 application consisted of 125 gallons of spray containing 4 pounds DuPont 25% DDT and 7 pounds "Mike" (Dow) wettable sulfur per 100 gallons. July 24 application consisted of 125 gallons of spray containing the same amount of DDT plus 8 pounds of wettable sulfur per 100 gallons. This combination gave a rather blotchy deposit.

Treatment 2 —Two DDT dusts following soon after two wettable sulfur sprays. July 10 application was 24 pounds of Gesarol A3 oil dust (Geigy) containing 3 percent of DDT, following a sulfur spray of 7 pounds of wettable sulfur per 100 gallons. July 24 application was 20 pounds of Gesarol A5 dust containing 5 percent of DDT following a sulfur spray of 8 pounds of wettable sulfur. Sprays dried before dusting.

Treatment 3—Two oil-sulfur dusts. July 10 application was 45 pounds of 5 percent oil-sulfur dust (Yopp's). July 24 application was 45 pounds of Niagara oil-bentonite-sulfur dust.

Treatment 4—Two sulfur sprays. July 10 application was 125 gallons of spray containing 7 pounds of "Mike" wettable sulfur per 100 gallons. July 24 application was 125 gallons of spray containing 8 pounds of "Mike" wettable sulfur per 100 gallons.

Treatment 5—Two fixed nicotine (Black Leaf 155)-sulfur sprays. July 10 application was 125 gallons of spray containing 7 pounds of "Mike" wettable sulfur and 3 pounds of the 14 percent fixed nicotine per 100 gallons. July 24 application was the same except that it included 8 pounds of the wettable sulfur.

On August 1 all plots and buffer rows received an additional sulfur dust for brown-rot control.

Method of Sampling

Counts were made August 7 and 8 to determine the percentages of injured fruits in each of the twenty-five plots. At this time harvest was well under way in the whole orchard but of course no fruits had been picked from the plots before samples were taken. Counts were based on a random picked sample of 200 peaches, usually 100 fruits from each of trees 3 and 4 in the center of each 6-tree plot. Where trees 3 and 4 were not uniform or did not have a full crop, samples from adjacent trees in the plot were substituted. No estimate of injury to drops was possible because of the large number of pigs roaming the orchard.

Each 100-fruit sample was first examined, without cutting, and all blemished or suspicious fruit put aside. These latter were then cut to determine the cause of the injury. Percentages of injury would have been somewhat higher had all fruits been cut.

Table I—Oriental Fruit Moth Control Experiments Ledbetter, Kentucky—1945

Treatment	Number of fruits examined	Oriental moth injured, percent	Cat-faced peaches, percent
1 Two DDT sulfur sprays	1000	4.6	5.2
2 Two DDT sulfur dusts	1000	14.5	4.3
3 Two Oil sulfur dusts	1000	21.3	4.7
4 Two sulfur sprays	1000	23.6	3.4
5 Two fixed nicotine (14%) sulfur sprays	1000	9.8	2.9

Discussion of Results

Results of the experiment are summarized in Table I. Plots receiving Treatment 4, sulfur sprays, were considered check plots. These had the heaviest loss with 23.6 percent of the fruit injured. Those receiving oil-sulfur dusts were only slightly behind the check plots, with 21.3 percent of the fruit injured by oriental moth. Best control was had in the DDT spray plots where only 4.6 percent of the fruit was injured by oriental moth. The DDT-dust plots gave much poorer control with 14.5 percent of the fruit injured. Fairly good control was obtained in the fixed nicotine plots where 9.8 percent of the fruit was damaged.

Records were kept as to fruit size, color and maturity, but no great differences showed up on the various plots. The oil-sulfur plots had slightly more mature fruit of high color, at least part of which, may

have been due to the insect injury. Fruit on the DDT-sprayed plots was of good size and medium color but seemed slightly immature. This may have been due to the absence of insect injuries.

No foliage or any other kind of injury was noticed from any of the materials used, nor did any other insect pests increase noticeably. There was a small amount of cat-facing in all plots and, as was to be expected from the lateness of the applications, little or no reduction in injury from the various treatments resulted. Only two peaches injured by plum curculio were found in examining the 5,000 peaches, and there was practically no brown rot.

The owners of the orchard where these experiments were made treated a large part of the remainder of the orchard with two fixed nicotine sprays, similar to Treatment 5 in the tests, and also sprayed a block of Champions with DDT. Quite good commercial control of oriental moth was secured where the fixed nicotine was used. The Champions, which had been wormier than any other variety in previous years, were practically free of oriental moth.

Literature Cited

Driggers, B. F. 1942. Performance of dichlordiphenyl trichloroethane (DDT) used against the oriental fruit moth. Jour. Econ. Ent. 37 (1):120-121.

SUGGESTIONS ON THE USE OF DDT

DDT will be available for general use in 1946 By reason of the great amount of publicity it has received, many fruit growers will use some of it even though its use on fruit trees is still in the experimental stage. DDT should not be expected to perform miracles. For best results it must be applied thoroughly, and growers will find it necessary to put on just as many sprays of DDT to control codling moth as they did formerly with lead arsenate—and sometimes more.

Growers planning to use DDT will do well to buy products of a reliable insecticide company and favor products tested on fruit insects. Ordinarily the best material to use is a wettable DDT powder containing 20 to 50 percent actual DDT (DDT dissolved in highly refined oil is for household use). In all cases use your material according to the manufacturer's direction and be sure the DDT content is stated on the container.

There is no good reason for using DDT sprays on early varieties of fruit. Growers using DDT are advised to try it only on August varieties of peaches and on late varieties of apples. It should be kept in mind that DDT kills beneficial insects and often allows other injurious pests to multiply unchecked, after spraying is discontinued. Do not use DDT near blooming time, because of danger to bees.

Apple Spray Schedules

Repeated tests by the USDA and various states, including Kentucky, have shown that DDT is very effective in controlling codling moth when added to an arsenate of lead program or to a fixed nicotine program or used alone. By combining DDT with other insecticides, reduced amounts of all materials can be used.

Straight DDT apple schedule. Use same material for calyx and first cover spray as formerly—4 pounds lead arsenate, 4 pounds lime, 6 pounds wettable sulfur per 100 gallons. In second, third and fourth cover sprays use 1 pound actual DDT (equals 4 pounds of 25% DDT or 2 pounds of 50% DDT spray material), 2 ounces of lime, 2 ounces of soybean flour, and 1 quart of summer oil per 100 gallons. Use wettable sulfur in second cover if scab control is still needed, but do not use summer oil with sulfur. Earlier cover sprays with DDT can be 10 days apart and later ones 12 to 14 days apart. Begin second-brood sprays in mid to late June, in western Kentucky, using ¾ pound actual DDT per 100 gallons and the same other materials as above. Use 2 or 3 sprays at 2 or 3 week intervals depending upon codling moth severity. Add bordeaux mixture as needed for control of bitter rot.

Combination lead arsenate, fixed nicotine, DDT schedule. Starting with second-cover spray, apply the following at 10-day intervals: Second and third covers—4 pounds lead arsenate, 2 pounds lime, 6 ounces actual DDT per 100 gallons. Fourth and fifth covers—2 pounds lead arsenate, 2 pounds lime, 6 ounces

actual DDT per 100 gallons. Use three second-brood sprays applied at 2 to 3 week intervals—6 ounces actual DDT, 2 pounds fixed nicotine (14%), 2 ounces soybean flour, and ½ quart summer oil per 100 gallons. (If bordeaux mixture is needed for bitter-rot control substitute bordeaux plus ¾ pound actual DDT for the above sprays). With this schedule an additional spray is usually needed in western Kentucky late in August, for control of third-brood worms.

Cautions. Growers using DDT spray programs on apples should be on the lookout for an increase in mites and realize that late sprays for mite control may be needed. To avoid excessive residues of DDT at harvest, any very late mite spray should be 6 quarts of summer oil per 100 gallons or one of the dinitro products may be used.

Peach Spray Schedules

DDT will not control curculio, but DDT sprays seem to offer promise for oriental fruit moth control. Use of DDT where beneficial parasites such as **Macrocentrus ancylivorus** Rohwer is well established is not advisable since DDT destroys parasites.

Oriental moth schedule. Use 1 pound actual DDT and 6 pounds wettable sulfur per 100 gallons. Apply one month ahead of harvest and again 2 weeks later. If curculio is a problem add lead arsenate to the first spray. If brown rot is feared, use additional sulfur sprays or dusts.

MATURE APPLE PRUNING

In general, the pruning of mature apple trees has come in for considerable discussion and argument during the last few years. It is generally accepted that severe pruning results in smaller trees and smaller yields, but larger fruits and better control of insects and diseases. No pruning has often resulted in larger trees, higher yields of smaller, lower quality fruit and in severe insect and disease losses in many problem orchards. In general, moderate to light pruning seems to be favored. Some pruning experiments further north have shown higher yields and profits for non-pruned or very lightly pruned trees, but those states do not have the severe codling moth problem that exists in much of Kentucky. In most cases, because of the height or the dense foliage of the tree, it is virtually impossible to spray adequately a mature apple tree that has not been pruned for a number of years.

In an attempt to assemble some of the better thoughts on apple pruning, a leading horticulturist in the Extension Service or the Experiment Station in most of the states bordering Kentucky was asked for his ideas on pruning of mature apple trees. The men contacted were: Professor Frank Beach, Ohio; Professor A. H. Teske, Virginia; Dr. N. D. Peacock, Tennessee; Professor J. R. Cooper, Arkansas; Professor W. R. Martin, Jr., Missouri; Dr. V. W. Kelley, Illinois, and Professor C. L. Burkholder of Indiana. The pruning ideas of these men were in general agreement and the high points of their replies are about as follows:

1. The training of a young tree is very important in order to space the young scaffold branches to make a strong tree rather than to let the tree "just grow"; but do not overdo this.

2. Some pruning of mature apple trees (over 15 years of age) is absolutely necessary but do just as little as possible to get the desired results.

3. It is more desirable to have fewer bushels of higher quality, large, clean, sound, well-colored fruit than to possibly have more bushels of smaller, poor-clored, insect and disease injured fruit.

4. Trees should be topped and opened up enough to permit all-over spraying with the equipment available. (This point was stressed especially where codling moth and scab are factors.)

5. Pruning can well be done every other year if not convenient each year. Many growers do this. In general, the pruning seems to do most good just ahead of the heavy crop year.

6. Very low limbs, drooping, hanging, shaded-out, thin, fruited-out wood on the inside of trees; excess water sprouts; and very high limbs should be removed.

7. During the war years apple pruning has been neglected due to the labor shortage and many mature trees are now badly in need of cleaning up.

The above suggestions come from men of long fruit experience in areas adjoining and comparable to Kentucky's apple sections and are in line with the general Kentucky idea of what should be done. Each grower should know whether his trees are too tall or too thick to be sprayed well. In fact, his recent success or lack of it in insect and disease control should tell him a lot about this. Also, fruit that is too high for pickers to reach (above 20 feet) is often shaken off and ends up as badly bruised drops. By studying his fruiting wood and knowing that small, poorly-colored apples, or none at all, come from the small, slender, shaded, hanging and fruited-out wood that clutters up many trees, growers can pretty well tell what needs to be removed. Where fairly heavy pruning is needed to correct bad situations this should be delayed until mid-February or early March to avoid danger of winter injury to freshly pruned trees. Each Kentucky apple grower would do well to seriously consider the above material and review his pruning program in comparison.

NEW THINGS IN DISEASE AND PEST CONTROL

Just as DDT is opening up a whole new field in insect control, other new chemicals and fungicides are making far-reaching changes in plant disease and pest control, even if in somewhat less flashy ways. An important part of this publication's function is to mention new materials and practices even while they are in the trial stage so that Kentucky growers can have more facts.

Some new materials are:

Fermate—a new fungicide, a black fluffy powder that has been found to have many uses. It is especially effective in the control of apple blotch, cedar and quince rust, troubles that have been very difficult to control until this material became available. Fermate also is useful in the control program for apple scab and is mentioned as an aid in bitter-rot control.

Of special interest about fermate is the fact that it can be used immediately before or with summer oil in the very early codling-moth sprays, where late scab protection is needed. This could not be done with wettable sulfur since this material cannot be mixed with summer oil and should not be used closer than 10 days or 2 weeks ahead of summer oil.

Also, fermate can be used with fixed nicotine sprays without releasing the nicotine, and this provides bitter-rot protection where needed by those using a nicotine program. Fermate can also be used as a fungicide with DDT.

All in all, fermate seems to be a very useful new material that can fit in many special places. During the war the supply was very limited but the information now is that supplies will be ample in 1946.

Puratized is another very new and very powerful fungicide that has given outstanding results in limited apple spray tests and further tests and use will be watched with interest.

Elgetol is one of the dinitro products that has several uses. Used in the dormant spray, it helps to destroy certain aphis eggs on the trees. It has also been used as a blossom spray to thin off a part of heavy bloom to thin the crop or to spray off a whole crop where that is desirable. Probably its most important use as far as Kentucky apple growers are concerned, however, is as a **ground spray** for the control of apple scab. As is well known, apple scab lives over winter on the old fallen apple leaves on the ground. In the early spring, scab spore producing perithecia develop on these leaves and these spores in turn are discharged and float about in the air to infect the young tender foliage. It has been found that ½ percent Elgetol sprayed over these old apple leaves in the very early spring will kill the scab spore producing perithecia that are covered and, hence, greatly reduce the crop of spores that are produced to infect the new apple leaves and young fruits. It takes from 300 to 500 gallons of this spray per acre to give an effective **ground spray** and while one cannot depend on that alone to control scab, it does cut down the innoculation to the point where scab can be much more easily controlled by the usual spring sprays or even one less spray. Also, by reducing the scab attacks with a ground spray it is possible then to control scab more surely with the milder sulfur sprays which are

known to be less caustic to foliage and cause less injury than the potent lime sulfur, long in use. Where much of this "ground spraying" is to be done a special boom is recommended. These can be home made with one foot joints of three-fourths inch pipe screwed together with nozzels every foot and attached to the rear of the spray machine so that a broad strip can be sprayed by this ground boom while the spray tank is driven between the trees. This "ground spray" development has now been tried long enough to establish the fact that it has definite merit in the scab-control program and should be a great help to many Kentucky growers who have had such serious scab losses in recent years.

Weed Killers—There are a series of new chemicals now on the market that will kill many kinds of weeds and plant pests. Some of these will kill poison ivy and there are many Kentucky apple orchards seriously infested with poison ivy where these materials could well be used. Some other very interesting weed killers can be sprayed on bluegrass lawns and will kill all sorts of weeds and dandelions and not injure the grass in any way. Likewise, certain of these selective weed killers can be sprayed in young fields of onions, carrots and peas and will kill all the weeds and grass and not injure the crops being grown. Needless to say, these developments are of great importance to certain farmers and fruit growers and will prove to be big production aids.

These are only some of the interesting new developments that are upon us.

LET'S FIND A NEW PEAR

The pear is one of our choice fruits, and undoubtedly would have been extensively grown in Kentucky except for the destructive fire blight disease. Such fine varieties as Bartlett, Bosc, and Anjou are so susceptible to the blight that their culture here is unsatisfactory. Of the blight-resistant varieties, the Kieffer is the most popular and is grown quite extensively in home plantings. Its quality is notoriously poor. Yet in Kentucky it produces remarkably large crops in spite of occasional outbreaks of blight and general neglect. In fact, it is doubtful if any other fruit would succeed so well with so little care. From this, one could conclude that except for the blight, pears are adapted to our climate and that what we need is a pear as resistant to disease as Kieffer and as good as Bartlett. It seems reasonable to believe that such a variety could be found. The Kentucky Agricultural Experiment Station started a project with this objective in 1944. Incorporated with this is a test planting of seedlings and new varieties reported to combine blight resistance and good quality. Nineteen selections have been included in the test so far. As soon as a variety appears to be reasonably promising, test trees will be grown in representative areas of the state where its merit can be determined.

It should be pointed out that trees of unknown origin (often chance seedling) that possess desirable characteristics are to be found occasionally on old farmsteads. Such trees should be tested and introduced to the public if worthy, for otherwise a valuable variety may be lost. If you know of a pear tree of this character, the Experiment Station will appreciate information about it and will be glad to propagate it and add it to the test planting.

HINTS AND OBSERVATIONS

By W. W. MAGILL

Unfortunate

A whole winter's rest will not improve that old sprayer you parked under a tree last August because it would not run. Order new parts and repair it.

Fire

Would your orchard burn over if a fire should accidentally start? Better be safe than sorry—do a little disking.

Still Hungry?

May I suggest that you raise a good garden again this year, even if your wife has to do most of the work.

Strawberries

One corner of your tobacco field planted to strawberries this spring might be a very profitable enterprise in May of 1947 and 1948.