Whitefly Control—Spraying With Fungus Spores

By E. W. Berger of Florida Agricultural Experiment Station.

It is now generally well known among the citrus growers of this State that there are several fungi which live parasitically upon the immature stages (the larvae and pupae) of the whitefly (*Aleyrodes citri*), and that, as these fungi become well established in a grove infested by whiteflies, they destroy these insects by the million. The best known of these fungi are the Red Fungus, the Yellow Fungus, and the Brown Fungus. Three others, not so well known, are the Red-headed Scale Fungus, the White-fringe Fungus, and the Cinnamon Fungus. The last two have only recently been described by Prof. H. S. Fawcett of this Station, in Press Bulletins 68 and 76 respectively; and their discovery being relatively recent we are not so well prepared to make recommendations, either as to their efficiency in reducing the whitefly, or as to the best methods for introducing them. The Red-headed Scale Fungus, so efficient in reducing scale insects in Florida, has only rarely been observed upon any of the young stages of the whitefly, and so will receive no further mention here.

PREPARATION OF SPORE-CONTAINING LIQUID.

The following description of the spore-spraying method for introducing the fungi is based mainly upon experiments with the Red and the Yellow Fungi, and the method was apparently first successfully employed by the writer. It is considered the preferable method, and is probably applicable to all the fungi mentioned, excepting perhaps the Brown Fungus. Experiments so far indicate that this method can be employed during any month of the year, although a better infection with fungus may generally be expected during the warmer months. The spores or germs (which take the place of seeds in fungi) are washed out of the fungus by means of water. Use about forty of the bright red or bright yellow pustules of the fungus to a pint of water. This will be about the same as one or two fungus-bearing leaves to a quart of water. More fungus may be used, but the amount indicated has been found to give good results. Soak and wash the fungus (leaves and all) for ten or fifteen minutes, and strain through cheese-cloth or fine wire gauze.

SPRAYING AND SPRAYERS.

Spray the mixture of spores and water on the under surface of the whitefly-infested leaves. Look well to the newer growth, and if the larvae and pupae, or the adult flies, or all three, are abundant there, spray the parts thoroughly. If the supply of seed-fungus is limited, spray only the worst infested twigs and branches, for the fungus will infect some of the larvae there, and the adults maturing from those not infected, together with other adults migrating there, will carry the fungus spores to other parts of the tree and to other trees. Use a new spraying outfit, preferably one of the Compressed Air Sprayer type (3 or 4 gallons capacity), with little or no copper or brass about it. Do not use an outfit previously used for spraying Bordeaux or other strong fungicide, since the small amount of fungicide left in the machine may kill the spores. An old spraying outfit which has been previously used only for soap solutions or oil emulsions may be employed, but it should be well washed out with water. A larger spraying machine mounted on a barrel may be used when many acres of trees are to be sprayed, and when an abundance of fungus is available. Use a nozzle producing a very fine spray, and thoroughly wet the leaves just to the dripping point. It requires about three weeks for the Red and Yellow Fungi to make a visible growth.

A modification of the spore-spraying method, recently brought to the writer's attention, consists in flirting the liquid against the under surface of the leaves by means of a tin cup. A wisp-broom may also be employed, or a bunch of small twigs dipped into the liquid. It will not be necessary to strain the liquid when it is intended to be applied in this manner.

THE BROWN FUNGUS.

The spraying method is probably not generally applicable for introducing the Brown Fungus, of which the spores are at present unknown. This fungus has, however, been well started several times by using this method. If it is desired to employ the spraying method for introducing the Brown Fungus, it is advised to scour the fungus off the leaves by means of a little sand and water, using the resulting mixture of fungus particles and water as a spray. Strain the liquid if necessary. Use about the same relative quantities of fungus and water as recommended for the Red and Yellow Fungi.

SHORT STATE ITEMS

Rev. Culpepper and son are conducting a religious meeting in Kissimmee this week.

A young man by the name of Cashmer was shot and killed by A. Irwin Lowman at Croom last Sunday.

Rodef Shalom, a Jewish temple, on the corner of Southard and Simonton streets, in Key West, was dedicated last Sunday.

The citizens of Dunnellon will soon erect a fine new fire station and are also contemplating the laying of a mile of cement sidewalks.

The Christian Advocate says that Rev. J. B. Ley, financial agent for Southern College, is meeting with much encouragement in raising the $110,000 endowment for the school.

Nearly all of the Florida crop of tobacco has been marketed. The prices received were in advance of last year's, while it is reported that the crop was not as good as last year's.

Dr. C. L. Norton of Adrian, Mich., a passenger on a Pullman sleeper, was robbed of his gold watch, a portion of his wearing apparel and $400 in cash in Jacksonville Wednesday morning of last week.

Clearwater will soon have a fine new tourist hotel. C. W. Baxter, who was the proprietor of the Colonial Hotel which burned in St. Petersburg a short while ago, will erect a large tourist hotel at Clearwater in the near future.

Judge Wills has sustained the demurrer of the county commissioners of Putnam county to the bill of complaint set up by Thos. H. Keating to set aside the local option election in that county of September 30th, and the county will remain dry.

Reports to the Chamber of Commerce of Key West are to the effect that there is actual starvation among the poorer classes of the city. It has been suggested that soup houses be established to furnish nourishment at least for women and children.

The Fort Pierce Tribune speaks of C. H. Hooks of Jensen as the most successful fisherman of the East Coast, and says he recently made a haul in the ocean in one day that netted him $685. This catch consisted of 2,700 pounds of pompano and 5,600 pounds of bluefish—a truly extraordinary haul for one day.—Times-Union.

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FULL LINE OF NEW GOODS....
AGENTS FOR
MONUMENTS, TOMBSTONES and IRON FENCES.
Personal attention to all matters in this line. Mail and telegraph orders promptly attended to
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Weigh Yourself
and then after a few weeks weigh yourself again. If you are losing weight take SCOTT'S EMULSION. Breathe fresh air day and night. Eat simple food.
Try this for a few weeks.
Then weigh yourself again. The experience of thousands of men, women and children is that
Scott's Emulsion
increases the weight. It contains a power that produces new flesh. This simple treatment often cures consumption.
All Druggists; 50c. and $1.00.

Samuel T. Fletcher of Tampa has brought suit against the Atlantic Coast Line Railway Company for $10,000. Colonel Fletcher alleges that he was cursed and assaulted on Fort Myers train No. 27 of the Atlantic Coast Line, between Plant City and Dover, by Conductor W. T. Miller, whom he alleges was drunk at the time. It is reported that Miller accused Fletcher of trying to beat his way on the train.

Last Thursday night a skeleton of a man was found about seven miles west of Miami by a negro who was coon hunting. The matter was reported to the sheriff of Dade county, who went immediately with the negro to the place where he had made his discovery. The sheriff is at a loss as to who the party was, but whoever it was, had been there for more than three years, as the brushes that his body had been covered with were decaying.

Benjamin Coles, a fifteen-year-old negro boy of Jacksonville, was run over by a heavy truck wagon and killed Thursday. The boy was riding a bicycle when he slipped and fell under the wheels of the truck. The driver of the team says that as soon as he saw the boy fall he applied his brakes and pulled on the reins with all his might, but it was impossible to stop the team before the front wheel passed over the boy's neck, breaking it instantly.

From January 20 to January 25th, inclusive, there were shipped from Plant City 178 refrigerators and about 25 open crates of strawberries. These refrigerators and crates carried 445 bushels or 14,240 quarts of berries. These berries were sold on the platform at an average of 16 cents a quart which shows the net receipts for the berry growers of Plant City for the week to be $2,278.40. If the season lasts fifteen weeks, and it will last longer than that this year, and if the average should hold up to the record of last week, the berry crop alone will bring to the growers of Plant City according to our figures $34,160.—Plant City Courier.

THE GUARDS MINSTRELS.

Rehearsals Now Being Held, and Show Will be Given in March.

From Wednesday's Daily Sun:

The Gainesville Guards Minstrels have been organized, and within a few weeks our people may have the opportunity of witnessing another first-class amateur minstrel performance.

The reputation of the Guards Minstrels is along high lines. A great deal of good musical talent is to be found in the company, which, together from the assistance outside, will make a fine show.

Those who comprise this minstrel are rehearsing regularly, and the entertainment will be pulled off during early March. The proceeds will be devoted towards equipping the new armory of the Guards with club features.

Don't Put Off

Until tomorrow what you can do today. If you are suffering from a torpid liver, or constipation, don't wait until tomorrow to get help. Buy a bottle of Herbine and get that liver working right. Promptness about health saves many sick spells. Mrs. Ida Gresham, Point, Tex., writes: "I used Herbine in my family for six years, and find it does all it claims to do." Sold by W. M. Johnson.

THE GREENS IN TROUBLE.

Colored Man and Woman Arrested by Sheriff Fennell on Serious Charge.

From Wednesday's Daily:

Acting upon instructions from the authorities of Marion county, Sheriff Fennell has arrested Ed Green and Eugene Green, the latter being the wife of Dan Green, of Anthony.

The warrant alleges that the woman eloped with Ed Green, who is a brother of the defendant. Ed Green is also married, and it is said left his wife in order to "take up" with the wife of his brother.

The parties are in jail, but inasmuch as they are guilty of an offense here, Sheriff Fennell has not yet decided whether or not he would deliver them to the authorities of Marion county.

OFF TO THE GANG.

Officer Walker Took Three Colored Men to Turpentine Camps.

Deputy Sheriff I. C. Walker left Tuesday for Ocala, having in custody three prisoners, all colored, as follows:

Andrew Whitaker, convicted of petit larceny in Justice Henderson's court, Newberry, sixty days.

Charley Allen, petit larceny, Justice Henderson's court, sixty days.

David McFall, assault and battery, Justice Colman's court, four months.

The prisoners were delivered to Rawls & Co., lessees of Alachua county convicts.

COUNTY TREASURER'S MONTHLY REPORT.

Receipts—1908.

Jan. 1—Bal. in banks Jan. 1, 1908	$25,432.91
Jan. 6—W. D. Dickinson, collections for month of December	2,225.72
Jan. 6—M. A. Bexley, case Allen Bell, assault	25.00
Jan. 6—E. T. Henderson, cases W. G. Strets $5 W. Reese $5, gambling	10.00
Jan. 6—L. W. Fennell, case Oscar Christman, gambling	2.50
Jan. 7—L. W. Fennell, case Virgil Jones et al	102.00
Jan. 8—J. D. Hiers, Co. Treas. Levy Co., witness pay-roll in Lowman case, Levy county	223.10
Jan. 11—L. W. Fennell vs. Fred Maloney, assault and battery	38.65
Jan 17—A. C. Croom, hire of State convicts Dec. 31, 1907	2,235.60
Jan. 18—J. G. Dampier, hire of county convicts	3,898.33
Jan. 18—S. H. Wienges, for H. Herzog et al, permits to hunt	100.00
Jan. 22—J. L. Kelley, Orange Lane school supplement	20.00
Jan. 24—A. D. Chamblin, case Daniel Robertson	5.00
Jan. 27—T. [illegible] Tillis, case Frank Ad[illegible] larceny	5.00
Jan. 31—S. H. Wienges, for game warden	40.00
Total receipts	$34,363.81
Disbursements	4,578.47
Bal on hand Feb 1	$29,785.34

Condition of Funds.

General fund	$ 5,412.02
Road fund	9,557.36
Fine and Forfeiture fund	12,582.74
Game Warden	1,000.50
School fund	975.78
Sub-school fund	256.94
Balance	$29,785.34

Money in Banks.

First National Bank	$14,785.34
The Dutton Bank	10,000.00
Gainesville National Bank	5,000.00
Balance	$29,785.34

R. H. PEELER, County Treas.
Feb. 1, 1908.

Tax Notice.

In pursuance of Chapter No. 4115, Section 35, Laws of Florida, I give below a statement showing the amount of taxes collected by W. D. Dickinson, tax collector of Alachua county, Florida, for the period ending Jan 31, 1908, as shown by county treasurer's receipts on file in my office, towit:

TAX ROLL 1908

Licenses	$ 117.00
Road Fund	1087.19
Road Fund, Special Districts	[illegible]
School Fund	1087.19
School Fund, Special Districts	[illegible]
School Polls, 1908	[illegible]
School Polls, 1907	[illegible]
Total	[illegible]

S. H. Wienges,
Clerk Circuit Court.

Cures Woman's Weakness.

We refer to that boon to weak, nervous, suffering women known as Dr. Pierce's Favorite Prescription.

Dr. John Fyfe one of the Editorial Staff of THE ECLECTIC MEDICAL REVIEW says of Unicorn root (*Helonias Dioica*) which is one of the chief ingredients of the "Favorite Prescription":

"A remedy which invariably acts as a uterine invigorator * * * makes for normal activity of the entire reproductive system." He continues "in Helonias we have a medicament which more fully answers the above purposes *than any other drug with which I am acquainted*. In the treatment of diseases peculiar to women it is seldom that a case is seen which does not present some indication for this remedial agent." Dr. Fyfe further says: "The following are among the leading indications for Helonias (Unicorn root). Pain or aching in the back, with leucorrhœa; atonic (weak) conditions of the reproductive organs of women, mental depression and irritability, associated with chronic diseases of the reproductive organs of women; constant sensation of heat in the region of the kidneys; menorrhagia (flooding) due to a weakened condition of the reproductive system; amenorrhœa (suppressed or absent monthly periods) arising from or accompanying an abnormal condition of the digestive organs and Anæmic (thin blood) habit; dragging sensations in the extreme lower part of the abdomen."

If more or less of the above symptoms are present, no invalid woman can do better than take Dr. Pierce's Favorite Prescription, one of the leading ingredients of which is Unicorn root, or Helonias, and the medical properties of which it most faithfully represents.

Of Golden Seal root, another prominent ingredient of "Favorite Prescription," Prof. Finley Ellingwood, M. D., of Bennett Medical College, Chicago, says:

"It is an important remedy in disorders of the womb. In all catarrhal conditions * * * and general enfeeblement, it is useful."

Prof. John M. Scudder, M. D., late of Cincinnati, says of Golden Seal root:

"In relation to its general effects on the system, *there is no medicine to use about which there is such general unanimity of opinion*. It is universally regarded as the tonic useful in all debilitated states."

Prof. R. Bartholow, M. D., of Jefferson Medical College, says of Golden Seal:

"Valuable in uterine hemorrhage, menorrhagia (flooding) and congestive dysmenorrhœa (painful menstruation)."

Dr. Pierce's Favorite Prescription faithfully represents all the above named ingredients and cures the diseases for which they are recommended.

Jessie Chesnut's Party.

As is her custom every year, Miss Jessie, the charming little daughter of Mr. and Mrs. John Chesnut, entertained a number of friends at the home of her parents, North Arredondo street, Friday afternoon, at a birthday party.

Little Miss Jessie, possessed of a most amiable disposition, never fails to entertain her guests properly, and the annual event is always anticipated with a great deal of pleasure by her friends. This was no exception, and those present enjoyed the afternoon thoroughly.

The afternoon was passed in games, etc., and delicious refreshments were served. At a late afternoon hour the little folks departed, wishing their clever hostess many happy returns.

La Grippe and Pneumonia.

Foley's Honey and Tar cures la grippe coughs and prevents pneumonia. Refuse any but the genuine in the yellow package. S. W. McCollum & Co.

Comer Pardons Brooke.

Montgomery, Ala., Feb. 11.—H. Y. Brooke, state examiner, sentenced to jail for ten days and fined at Laverne for criminal libel, has been pardoned by Governor Comer to the extent of the jail sentence. He will have to pay the fine, however. This is the extent of the punishment deserved, the governor thinks.

Cheapest accident insurance—Dr. Thomas' Electric Oil. Stops the pain and heals the wound. All druggists sell it.

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