



NEWSLETTER

JANUARY 1991

**TAMPA BAY CHAPTER of the
RARE FRUIT COUNCIL INTERNATIONAL, Inc.**

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(INCLUDING RENEWALS)

MEETINGS ARE HELD THE 2nd SUNDAY OF THE MONTH AT 2:00 P.M.

NEXT MEETING. JANUARY 13, 1991

MEETING PLACE HILLSBOROUGH COUNTY AGRICULTURAL BUSINESS
CENTER. (COUNTY AG. AGENTS' BUILDING,
SEFFNER) Take I-4 to Exit 8 South, SR 579,
go past traffic light at U.S. 92 inter-
section. Building is less than 1/2 mile
on left (east) side of US 92. Use parking
lot. Meeting room is in rear of building.
Main door will probably be locked. Walk
around.

PROGRAM TOM ECONOMOU WITH HIS "TROPICAL FRUIT
FIESTA" IS BACK. He will present an
exotic array of tropical fruit for us
to see, touch and taste, and helpful
hints on growing these tasty treats.
This promises to be a very interesting
meeting, particularly to new members who
have never met Tom Economou!

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RFCI NEEDS YOU!

Renovation of our new building is progressing nicely. We hope to be there
for our February meeting. However, this is only possible if YOU help.

We will need volunteers to put in electrical outlets, put up electric light
fixtures, and paint the inside of the building. We also need someone to lay
commercial grade carpet and vinyl floor tiles throughout the building.

There is also still much outdoor work to do: cleaning up, trimming trees,
fixing a shed door, etc. We will need assistance over several weekends.
There is work enough for everyone and anyone!

Please talk to Arnold or Bob at the next meeting and volunteer your services.

THANKS!!

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EXCERPTS FROM PRESENTATION BY TOM GOLDSWORTHY at meeting on Sunday, December 9, 1990
 Entitled "FIVE ALTERNATIVES TO PETROCHEMICAL PESTICIDES"

In the recent past, several Deans of Agricultural Colleges have said that organic farming may be okay for the little fellow, but we would all soon starve to death if large growers tried to grow that way. However, at the Florida Grape Growers Annual Meeting several weeks ago in Orlando, I heard Dr. Max Rittgers tell how he is successfully going organic in his commercial U-Pick Muscadine Vineyard near Tallahassee. Also, there is a family that farms about 1,400 acres of grapes organically in California and Arizona, and they have been doing it for many years. In addition to these, Arrowhead Grain Growers in Texas is a very large organic grain producer and Fred Kirschenmann manages a 3,100 acre organic grain and livestock farm near Windsor, North Dakota. So large farms can grow organically.

However, growers may have to revise their thinking a little to grow organically. For instance, don't think that a good bug is a dead bug. If you do, you are overlooking the fact that most of the insects in the world are either harmless or beneficial to growers. Of course, this is of little consolation to the grape grower when some particular insect is ravishing his vines. But if you kill all the insects as you attempt to get the bad ones, you have lost the help which the beneficial insects have been providing to your plants. And while it is harder to calculate in terms of dollars, the work that beneficial insects do does have dollar value. How can we save some of those dollars which the beneficial insects represent?

Our company, Odessa Natural Enterprises, has been a distributor of natural, biodegradable or biological pesticides since 1987. I am not an entomologist, but I believe I can explain in general and simple terms what some of these alternatives are, and how they work. I would like to talk to you about five items.

1. B.t. to kill caterpillars;
2. B.p. to kill some white grubs;
3. A host specific spore disease to kill grasshoppers
4. Beneficial, predatory Nematodes that hunt down and kill the larval and grub stages of over 230 insect pests underground - a biological insecticide.
5. Safer-Mycogen Insecticidal Soap Concentrate.

Let's begin with a way to kill caterpillars, which are all members of the insect family Lepidoptera. How many know of a natural pesticide which will kill only caterpillars, and what it is called? When Abbott Laboratories sells it, they call it Dipel powder or liquid. When Southern Ag sells it, they call it Thuricide. Many of us know it as B.t., which stands for the name of a bacteria: *Bacillus thuringiensis*. The first strain of this bacteria which they discovered killed only caterpillars. More recently research scientists have discovered other strains of B.t. which are host specific to other insects (such as beetles and mosquitoes). But generally today when they talk about B.t. without a following variety name, they are talking about the original caterpillar killer.

The best way to apply B.t. is as a diluted liquid spray, applied to the UNDERSIDE of the leaves in fine mist. With this spray method, you will obtain 5 to 7 days of residual action because the live bacteria is protected from rain, ultraviolet light and sunlight when it is on the underside of the leaf. The caterpillar must eat the bacteria in order for it to work. However, the caterpillar need eat only a tiny bit in order to be effective. That is why the small droplet size is recommended, so that you get a more economical spray. Once the bacteria is ingested, it immediately reacts in the gut of the caterpillar and produces a toxin. The toxin paralyzes the caterpillar, and it stops feeding and doing leaf damage almost immediately. The instructions say that it may take two or three days for the caterpillar to die, but that it does no further damage. In my own personal experience, I have always found them dead the morning after the spraying.

Some of the advantages of using B.t. against caterpillars are:

1. It kills only members of the caterpillar family.
2. It does not accumulate in the food chain - if a bird eats an infected caterpillar, the bird does not get sick. When the B.t. washes into the ground, it does not poison earthworms.
3. It is approved by the EPA for application to fruits and vegetables up to the day of harvest.
4. It has 5 to 7 days residual action after spraying.

The second product which I want to touch on briefly is another host bacteria that kills certain white garden grubs. It is called B.p. It is also known as "Milky Spore Disease", or "Japanese Beetle Spore Disease".

We in Florida do not yet have Japanese beetles, according to entomologists, but this bacteria does seem effective on the white grub stage of certain other beetles. Some of the turf maintenance technical manuals recommend it for grub control. In my experimental blackberry bushes I have used it in a preventive maintenance program.

Milky Spore Disease comes as a white powder. You lay out small quantities in a 4 foot grid pattern in the area that you want to inoculate. Then you water it in, or disc it into the soil. In the moist soil, the bacteria multiplies and spreads throughout the soil area. Once inoculated, a piece of land may remain inoculated for as long as ten years. Grubs in inoculated land become infected and die, if they are a species that is susceptible to this bacteria.

The third product I would like to mention is also a host specific spore disease to kill grasshoppers. This product is a natural grasshopper disease that was recognized and isolated by the U.S. Department of Agriculture Station in Montana. This disease is called "Nosema locustae" and has trade names such as "Semaspore" and "Nolo Bait". The spore protozoas are incorporated into a bran flake bait which can be hand shaken or mechanically blown into areas containing the grasshoppers. This bran flake bait must be eaten by the grasshopper in order for it to be effective. You need to distribute the bait when you expect to have at least 4 hours of hot sunshine for feeding. Also, this bait is most effective when the grasshoppers are very small, up through about 5/8ths of an inch.

What happens once the grasshopper has ingested the bran flake depends upon the age of the grasshopper. The important thing to realize is that the grasshoppers are not all going to drop dead in even a week. What you are doing is introducing a communicable disease into the grasshopper population. The rate at which this disease will begin to spread depends upon how many eat the bait, and of what ages they are. It affects grasshoppers, locusts, and some (but not all) species of crickets.

The Nosema Locustae protozoa begins to reproduce inside the fat bodies inside the grasshopper. In 7 to 10 days, grasshoppers will slow down, and their food consumption will begin to drop. In 10 to 21 days after ingestion, many grasshoppers begin to die. Healthy grasshoppers are cannibals; they eat the sick ones, and then become infected themselves. In this way the disease spreads through new hatches.

The USDA has identified about 250 natural enemies of grasshoppers. If you use a host specific means to reduce the grasshoppers, such as this spore disease, all the other grasshopper predators survive, and help to further keep in check the grasshopper population. But as you can see, with this natural control, the time to apply it is months before your anticipated crop begins to grow. In our part of central Florida,

where we have new grasshopper hatches almost all year round, the time to kill next year's grasshoppers is right now.

The first three things I talked about were host specific; they act against only caterpillars, only white grubs, or only grasshopper family members. The fourth thing I want to talk about is a biological insecticide which is "broad spectrum". I am talking about the beneficial, predatory nematodes. These simple primitive worm like small creatures bore through the soil searching for the grub and larval stages of over 230 different insect pests. Once they encounter a host, they have the ability to penetrate a host's body and lay their eggs inside the host. The eggs hatch inside the host and feed upon it.

I should mention that these beneficial, predatory nematodes occur naturally in the soil in most parts of the United States in very low concentrations. What you buy is a highly concentrated form of this live hunter, which you then apply in the root zone of the plants you want to treat. This is not a new product. One of my laboratory suppliers has been selling nematodes for over 12 years. The nematodes are perfectly safe to humans, and have been exempted by the EPA from the registration required of chemical pesticides.

Among the 230 insect pests that beneficial nematodes attack are the flea beetles, fungus gnats, white grubs, and wireworms. The grape root borer moth larvae is NOT currently on this list. However, some of us feel that this may be an eventual solution to the root damage caused by the grape root borer during his 22 months in the ground in the larval stage. Some citrus growers are experiencing severe tree decline caused by the citrus weevil larvae severely damaging the root system. These citrus growers are treating their trees with nematodes, and seem to feel it is cost effective.

Using a biological is just like using any new product. You need to know about the product before you go out and spread some around. For example, this comes to the grower in a concentrated form, either a liquid or on sponges. You get your best result if you use up all of your nematodes as soon as possible because some are already dying when you receive them. Another thing: this is a live creature. It is easily killed by ultraviolet light, so the best time to apply it is very late in the afternoon when the sun is almost down. Before it is applied, the intended application area needs to be well soaked with water. After the liquid spray application, the ground should be briefly watered again, so that all nematodes are washed into earth contact.

Please be aware that the manufacturers of nematode sprays DO NOT make any claims that the nematodes will reproduce and continue to spread. They want you to look on this as a pesticide application, like any chemical treatment. There may be some residual results, but don't count on it all the time. Soil moisture, soil temperature, and number of host insects in the soil are just a few of the variables which help determine whether nematodes may reproduce further in the soil.

Nevertheless, these nematodes may be one of the most effective ways to safely kill insect pests. The University of Florida has many research studies now underway involving beneficial nematodes against agricultural pests.

The last product which I want to mention is Safer's Insecticidal Soap Concentrate. This product has been known in scientific literature for over 100 years. It has been available commercially for 14 years. As some of you know, this product is still sold in the smaller sizes under the Safer name, but as of last year, the larger sizes such as the 4, 5 and 30 gallon drums are sold under the Mycogen label, as Safer Insecticide Concentrate. It is all the same product.

As you may know, most pesticides kill insects by poisoning them, or interfering with their nerve processes. Safer/Mycogen does neither; its unique way of killing insects is what makes it so safe and so valuable. It is a contact poison, that is, you must spray it on the insect in order for it to work. So the method of application is very important. The Safer/Mycogen concentrate disrupts the cell wall around the thorax of certain classes of insects. This in turn causes their body fluids to drain out of their bodies. The active ingredient is potassium oleate.

Here are some of the advantages of the Safer/Mycogen Insecticide Concentrate (now called Mycogen "M-Pede" in larger sizes):

1. It is safe for human skin contact; you do not need to wear gloves to handle it.
2. This product biodegrades into non-toxic residues, so it will not end up in somebody's drinking water; as it biodegrades, it leaves a little primary plant nutrient (potassium).
3. This product is approved by the EPA for application to fruits and vegetables right up to the day of harvest.
4. It meets the requirements for many organic certification standards, because it comes from natural ingredients.
5. There are no dangerous "inert" products. The inerts are water and a certain amount of naturally distilled grain alcohol to make the concentrate miscible in water.
6. It does not kill all insects; only certain targeted classes of insects; for example, it DOES NOT kill honeybees (which are pollinators), nor adult ladybugs (which are aphid predators). Nor does it kill earthworms in normal concentrations.
7. Field workers may return to work in the field as soon as the product has settled. They do not need protective clothing to return to the field.
8. It does kill many of the insects which are agricultural pests.

The Safer/Mycogen Insecticide Concentrate may be tank mixed with B.t. Caterpillar Killer, with sulfur based fungicides, and with some petrochemical pesticides. This product does not have any residual effect; it works only while it is wet, and only if it gets on the insect. So the best day to apply this product is when it is overcast and cloudy. The smaller the water droplet size the better for this product, as these small particle sizes will drift over, around, and behind vegetation to come in contact with insects.

I should like to conclude my remarks on this insecticide by pointing out that the label instructions which are given on many of the small sizes of the concentrate is for a ratio of 2.5 fluid ounces of concentrate per gallon of water. This yields a 50 to 1 ratio, which is a 2% active ingredient strength solution. Note that this is recommended for home consumers. The commercial rate for people who have professional spray application equipment is one half the consumer rate. That is, they recommend a commercial grower use a 1% active ingredient solution, which is 1.25 fluid ounces per gallon of water, for most situations.

NOTE: The Club is considering purchasing some of these products from Tom for resale to members. Interested members should contact Bob Heath @ 289-1068, evenings.

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With very best wishes for your happiness
in the New Year

PLANT RAFFLE :December

PLANT NAME	DONOR	WINNER
Tamarind	F. Honeycutt	L.B.Simmons
Tamarind	F. Honeycutt	Al Hendry
Surinam cherry	F. Honeycutt	Alice Burhenn
Surinam cherry	F. Honeycutt	?
Spanish Lime	F. Honeycutt	Charles Novak
Hot pepper	F. Honeycutt	Lloyd Shipley
Carambola fruit	F. Honeycutt	Leo Cotter
Guava	RFCI	Leo Cotter
Guava	RFCI	Walter Vines
Spinach	Heath	F. Pupello
Glycosmos	Heath	?
Star Apple	Heath	Nancy McCormack
Butterfly Ginger	Walter Vines	Yuku Tanaka
Butterfly Ginger	Walter Vines	L.B. Simmons
Butterfly Ginger	Walter Vines	F.Puppelo
Butterfly Ginger	Walter Vines	P. Kotapski(3)
Poinsettia	C. Novak	P. Kotapski
Poinsettia	C. Novak	Heath
Chayote	Stark	F. Pupello
Chayote	Stark	L. Shipley
Chayote	Stark	Max Means
Chayote	Stark	? (2)
Surinam Cherry	Frank Tintera	Alice Burhenn
Lemon Grass	L. Shipley	Nancy McCormack
Loquat	L. Shipley	Al Hendry
Loquat	L. Shipley	Wente
Passiflora capsularis	Paul Zmoda	Walter Vines
broccoletto seed	Paul Zmoda	P. Kotapski
atemoya seed	Paul Zmoda	P. Kotapski

Hospitality Table: December

Lottice Shipley: pineapple juice, cheese
 Alice Burhenn: cookies
 Lillian Stark: carambola bread, banana bread
 Joan Murrie: toffee cookies
 Jim & Joan Murrie: mango wine
 Frank Honeycutt: carambola fruit
 Lillie Belle Simmons: ham, cheese, & bread
 Nancy McCormack: fruit Danish

RECIPE OF THE MONTH: CITRUS SHORTBREAD

1 cup confectioners sugar	1 tsp vanilla
2 cups oleomargarine, softened	1/2 cup chopped pecans or walnuts
1/2 cup cornstarch	1/2 cup chopped glazed orange peel
3 cups all-purpose flour	

Cream sugar and oleo with electric mixer until light and fluffy. Beat in cornstarch and vanilla. Gradually add flour, beating until fluffy. Stir in nuts and orange peel. Drop by teaspoonful onto lightly oiled cookie sheets.

Bake at 325° for 20 minutes until golden brown.

UNIVERSITY OF SOUTH FLORIDA BOTANICAL GARDENS PLANT FESTIVAL

On Saturday, April 20, 1991, the Botanical Gardens at University of South Florida will have their first annual Plant Festival. The RFCI has been invited to participate along with the Florida Native Plant Society, the Tampa Fern Club, the Tampa African Violet Society, the Tampa Rose Society, the Tampa Bay Orchid Society, the International Palm Society, and the Tampa Bromeliad Guild.

Participation will include displays and/or sales of typical plants. Hopefully, the Festival will act as an important fund raiser for the Botanical Gardens and may provide some additional funds for the Rare Fruit Council. At this time, they are anticipating a 25% split for the Botanical Gardens, a 25% split for the RFCI and 50% for those who wish to sell plants.

The Gardens are looking for volunteers to help prepare for this Festival on Friday and Saturday mornings. Already, some volunteers are propagating plants, weeding, planting flowers, etc., and some are involved in planning details of the Plant Festival. Any of our members who would like to join the Gardens on Friday and Saturday mornings can simply attend one of these sessions, or call Bob Heath for more details.

At the Festival, tables will be available to display interesting fruit and trees to be sold by members. However, we want to emphasize that the sale of plants at this Festival should not interfere with our monthly raffle or with our own annual Tree Sale. On April 20, we will need several volunteers to man the booth for the Rare Fruit Council. It is interesting to note that the Festival will fall almost exactly 6 months before our next sale and 6 months after our last one. Further discussion will be forthcoming at the next meeting.

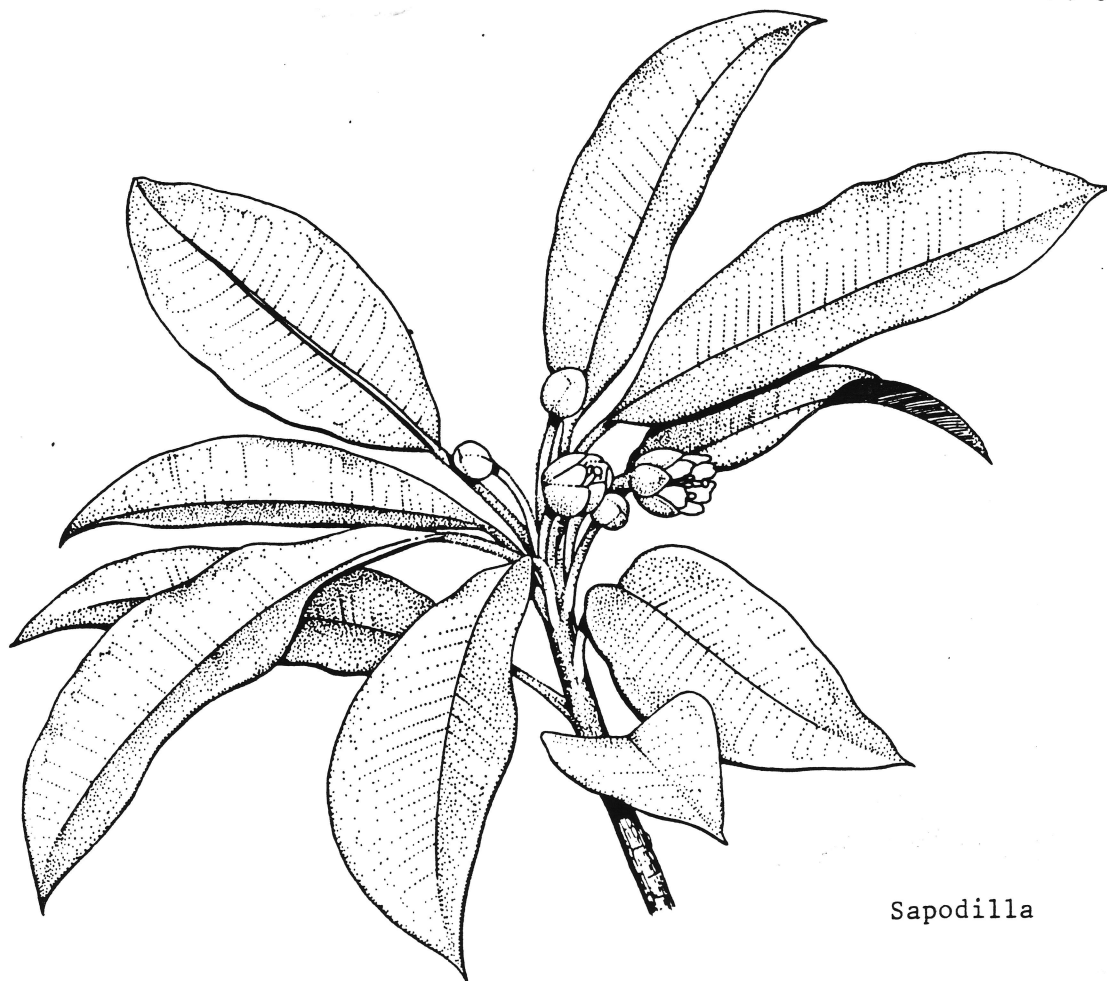
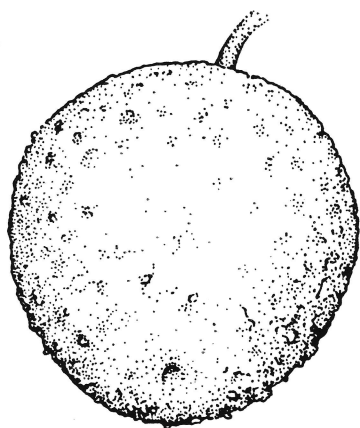
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PLANT PERSIMMON SEEDS

To grow persimmons, one must plant persimmon seeds. In Florida, we use Virginiana root stock grown from seeds from our indigenous persimmon trees. Persimmon seeds need exposure to cold in order to break the seed's dormancy. One way to do this is to plant the seeds in the ground in the fall for exposure to the winter cold, but it exposes the seeds to unnecessary losses from birds, squirrels and disease. Far better and more certain is to stratify the seeds in the refrigerator. To stratify means to expose the seeds to cold to break dormancy.

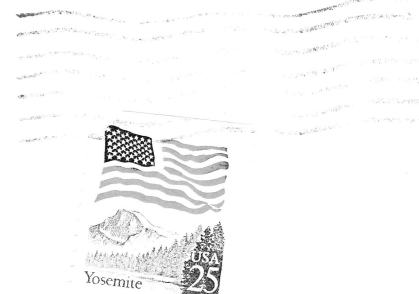
The American persimmon is astringent and must be soft ripe to eat and is well-endowed with numerous seeds. As soon as the seeds are extracted from the fruit and before they dry, put them in water to check for floaters. Seeds which float are nonviable and should be discarded. Persimmon seeds removed from the water should not be allowed to dry. As soon as the seeds are removed from the water, they should be mixed with enough moist peat moss to thoroughly cover and surround them, then placed in a plastic bag and sealed up. Peat moss is one of the best materials for stratifying seeds. It has a natural fungicidal action that prevents rot and mold from growing on the seeds while they're stratifying. It is also cheap, easily available, easy to use, and holds the right amount of moisture. Simply soak the peat moss in water until it is thoroughly wet and then squeeze out the excess until it is moist but not soggy. Then mix with the seeds, at a rate of about 4 tablespoons of peat moss to one teaspoon of seeds. The plastic bags of seeds should then be placed in the refrigerator where the temperature is held between 32° and 45° for proper stratification. It will only take about a month and a half to 2 months in the refrigerator before the seeds are ready to grow. But persimmon seeds will stay dormant as long as they are in the refrigerator and this could be over a year with good germinating success. In early March the peat moss and seeds may be spread out on window screen and the seeds picked out from the peat moss and planted.

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Sapodilla

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