Developing Countries Farm Radio Network

Package 11, Item 7

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**Aphid control at little cost: Part 2: Applying your homemade aphid insecticide**

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Information on this subject area was requested by DCFRN Participants in Argentina, Belize, Bolivia, Chile, Colombia, Dominica, Dominican Republic, Honduras, India, Malaysia, Mexico, Nigeria, Philippines, Taiwan, Thailand, Sierra Leone, and Swaziland.

Presenter: George Atkins

Interviewee: Dr. Allen Knight

**Special note**

Before using the information in this item, please read Note 1 at the end.

**Suggested introduction**

We at this radio station are part of a world‑wide information network that gathers farming information from developing countries all over the world. It's the Developing Countries Farm Radio Network, sponsored by the Canadian International Development Agency, Massey Ferguson, and the University of Guelph.

Through this Network, we bring you information on ways to increase food supplies for your family, or to sell—ways that other farmers have used successfully.

Today we continue our discussion of aphid control at little cost. Here's George Atkins.

**ATKINS:** On our last program, Dr. Allen Knight, who worked in Africa for 34 years, told us about a very low‑cost insecticide that you can make up yourself for dealing with aphids. These are tiny, soft‑bodied insects that suck the juice or sap from the tender parts of your young growing plants and fruit trees.

Dr. Knight's insecticide is made with soap, diesel fuel or kerosene, and water. Very briefly, I'll review for you how it's made.

\* slice up an amount of soap about the size of an egg

\* put it into 3 litres (3 quarts) of water, in a metal container

\* heat up the soap and water until it boils and stir it to dissolve the soap in the water

\* move it a safe distance away from the fire and pour in about 1/4 to 1/2 a litre (1/4 to 1/2 a quart) of diesel fuel or kerosene

\* stir this vigorously as you mix it with the soapy water until it becomes a whitish mixture or emulsion

\* add 7 litres (7 quarts) of cold water and stir again.

You now have 10 litres (10 quarts) of a good aphid insecticide—mind you, it's only good for aphids, the kind of insects that suck the juice from your plants. It's not for insects that bite and chew.

Now let's check with Dr. Knight on how to apply this insecticide to the aphids on your plants. He first mentions a sprayer.

**KNIGHT:** If you have a sprayer, it's very simple, just put your insecticide in a sprayer and spray it.

If you don't have a sprayer, I'm going to suggest to you something that I have used that's even simpler than a sprayer—a broom!

To apply your insecticide by this method, here's what you do:

Put your emulsion spray in a 10 or 15 litre (10 or 15 quart) pail and make up a small broom or whisk. It can be a little broom you can make up with grass—that's quite satisfactory.

Dip your little broom into the emulsion, then shake it several times over the plant and that will apply the emulsion to the aphids just as well as a sprayer. Now it takes a little time to do it, but shake it and that gives you the same effect as a sprayer.

This is a perfectly satisfactory method and I've used it very effectively in the home garden and for aphids on small trees.

**ATKINS:** Now what happens when some of this insecticide gets on the ground? Does it stay in the soil or is it bad for the plants?

**KNIGHT:** It would evaporate from the surface of the ground. You won't be applying enough of it to cause any toxicity (damage by poisoning) to plants.

**ATKINS:** Or will it affect the moisture or water in the ground?

**KNIGHT:** No, there should be almost no spray or emulsion falling to the ground. You don't have to apply that much.

**ATKINS:** Must you apply this to the underside of the leaves?

**KNIGHT:** That's where the aphids like to work, on the underside of the leaves. On a young cabbage leaf, for example, you won't find them on the upper surface of the leaf; look underneath. They seek protection from the sun.

You'll find on certain other kinds of plants, they attack the stem more than they attack the leaf. In our garden right here, I can show you aphids on my tomato plant. They're not on the leaves. They're on the stem.

**ATKINS:** So now we know that you won't see the aphids on top of the leaves. They work on the underside of the tender leaves and on the stem of the plant.

But if we're going to use the little grass broom Dr. Knight told us about, how do we get the insecticide onto the aphids on the underside of the leaves or on the stems?

**KNIGHT:** If you want to apply it from one side, just pull the plant over with your left hand, for example, and shake your broom with the right hand. Then go around and apply it from the other side.

The important thing is to contact, with the insecticide, all of the aphids that are on that plant. It will not be effective if the insecticide is only applied to the top of the leaves; you must get it where the insects are.

**ATKINS:** Well, by just getting the insecticide on the plant, wouldn't the insect come in contact with it by itself?

**KNIGHT:** No.

**ATKINS:** It actually must get onto the aphid?

**KNIGHT:** Yes, it kills by contact with the aphid. You actually must "hit" that insect with the insecticide.

The important thing to know is that the droplets of the emulsion must actually come in contact with the insect's body in order to kill it; because this emulsion blocks up the breathing pores and it actually penetrates the body and even attacks the nervous system of the insect.

**ATKINS:** Well here's another question: is there any special time of day that this emulsion should be applied to your plants?

**KNIGHT:** I would say that it should be applied early in the morning or later in the afternoon. I would not apply it from 10 o'clock in the morning until 3 o'clock in the afternoon. The sun might be so bright that it would burn the leaves of your plant.

**ATKINS:** Now one other thing … say it's going to be a rainy day—would you apply this insecticide on a rainy day?

**KNIGHT:** It would be all right, but be sure that you have one or two hours before the rain starts. Otherwise you won't be giving enough time for the insect to be killed.

**ATKINS:** Now, Dr. Knight, is there anything dangerous about using this emulsion insecticide?

**KNIGHT:** If you were going to be doing this for two or three days in succession, there are some people who might be susceptible to (affected by) diesel fuel. So, in that case, just as a matter of precaution, I would wear a plastic glove to protect my hand from the diesel fuel.

**ATKINS:** If you don't have a pair of gloves, what would you do?

**KNIGHT:** Well, use a small plastic sack. Just put a plastic sack over your hand, tie it over your wrist, and you can go to work.

**ATKINS:** All right now, what if this emulsion gets onto the fruit or vegetable—onto your tomatoes, peppers, brinjal or eggplant or some other thing like that? If the insecticide gets onto what you will be eating, will it be bad for the person who eats it?

Dr. Knight says probably not, but it's a good idea to wash any fruit or vegetable before you eat it, to get rid of any of the insecticide that might still be on it.

**KNIGHT:** I consider this to be one of the safest insecticides that a farmer can apply. He can make it himself, it's cheap, and it's almost non toxic.

**ATKINS:** Thank you very much, Dr. Allen Knight.

Serving Agriculture, the Basic Industry, this is George Atkins.

**Notes**

1. Information in the previous item in this Package, Item 6, Aphid Control at Little Cost (Part 1 ‑ A Homemade Insecticide for Aphids), should be used before this one. It provides all necessary details for the farmer who wishes to make up his/her own soap/diesel fuel emulsion insecticide for killing aphids.

2. Also in association with this item, you might wish to use information from:

Preventing Insect Pest Damage to Crops ‑ DCFRN Package 10, Item 9.