Developing Countries Farm Radio Network

Pack 10, Item 8

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**Knowing insect life cycles helps you control pests**

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Information on this subject area was requested by DCFRN Participants in Argentina, Chile, Colombia, Dominica, India, Palau, Philippines, Senegal, Swaziland, and Taiwan.

Presenter: George Atkins

**Suggested introduction**

We at this radio station are part of a worldwide 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, George Atkins has some basic information for us about insects. Here's George.

**ATKINS:** Have you ever thought about the many different kinds of pests that attack our crops and that bother us and our animals?

Some insect pests have wings and fly around. Others look like worms with legs—we know them as caterpillars. Sometimes we see them crawling on our plants—other times they're like small worms inside the stems or even in the fruit. There are others too in the soil that attack the roots of our crops.

We really do have a lot of pests of these kinds, and we see them in many different forms, colours, shapes, and sizes.

Now did you ever think about where pests like this come from and how they grow?

Actually, you could say that these pests are something like chickens. You know that hens lay eggs, and that if a hen sets on fertile eggs for 3 weeks, baby chicks will hatch from the eggs. Then after a few weeks, a baby chick will become a full grown hen or rooster. So a chicken really has 3 different forms or stages in its life cycle—the adult hen or rooster, the egg, and the baby chick. Then later when that baby chick becomes an adult chicken, the cycle starts all over again. But remember, each one of these different stages—the chicken, the egg, and the baby chick—looks completely different.

Perhaps you never really thought about that before—a chicken, an egg, and a baby chick are really all the same creature, but in different stages of its life cycle.

Well these pests I was talking about are something the same. They have different stages in their life cycle too. You may know that adult flies, moths, or beetles lay eggs. They're not big eggs like hen's eggs, but they are eggs. Perhaps you've seen these tiny eggs on the underside of leaves, under the bark of trees, in the soil—in different places. Each kind of insect usually lays or deposits its eggs in one special kind of place—some on the underside of leaves, some under the bark of certain kinds of trees, some in rotting garbage.

Now maybe you noticed that I've just mentioned two of the stages in the life cycle of these pests—the adult and the egg.

Thinking about the life cycle of a chicken again, you know that the adult hen lays her eggs and that from these eggs come the baby chicks. So baby chicks are another stage in the life cycle of the chicken. With insects, another stage appears when the insect eggs hatch into a form that doesn't look anything like the adult insect—they hatch into a soft-bodied form we call "larva."

Now you may know that one form of insect larva is a caterpillar. There are different shapes and sizes of caterpillars. Some are small and wormlike, others are bigger and fat. Then there are grubs and maggots—all of these caterpillars, grubs, and maggots are larvae and each kind of larva just has certain things that it eats. Many larvae are harmful to us, our crops, and livestock.

So now, I've mentioned three different stages in the life cycle of this type of insect, the adult stage, the egg, and the larva.

Then there's yet another stage—it's called the "pupa." Again, the pupa looks different from the other stages. It's a resting stage—it doesn't eat anything. It can't move around like the adult or the larva—it just rests.

Finally, after a while in this stage, out of the pupa comes the adult beetle, fly, or moth—and that's where we started this insect life cycle. From this adult stage then, the life cycle starts all over again.

So now I've told you about four stages in the life cycle of these insect pests—first the adult, then the egg—after that, the larva, then the pupa, and finally from the pupa comes the adult.

Insects generally are not a problem for us in two of those stages—as eggs and pupa, because they don't eat anything in those stages. It's when they're in their other two stages, as adults and larvae, that some of them may be harmful to us, our animals or our crops.

That's an interesting story, isn't it? And it's really good for us to know. It's especially useful to know when we think about controlling the pests that bother us so much; —the pests that spoil our crops, that eat our food, and that spread bad disease germs.

The reason I say this is that these pests may be easier to control in one stage of their life cycle than in another.

I'll give you an example. We all know that common house flies spread bad germs. Well, what's the best and cheapest way to control them? Is it at the stage of their life cycle when there are thousands of them flying around?—or might it be better at the stage of their life cycle when the adult flies are laying their eggs?

We know that houseflies lay their eggs mainly in human or animal feces or manure and in rotting meat or vegetable material, including all kinds of rotting garbage. We know too that the larvae that come from the eggs these house flies lay, will live and grow where the eggs were laid.

Thinking about the best stage in the house flies' life cycle to control them, the easiest and cheapest thing to do is to prevent the flies from laying their eggs in that rotting manure and garbage. So how do we do that?

Well, the best way is not to leave that stuff lying around. Cover it or bury it so flies can't get into it to lay their eggs in it. Keep your house, yard, garden, and poultry and livestock area clean, dry, and tidy. If you and your neighbours all do that, you'll be preventing flies from finding a place to lay their eggs. By doing this, you'll be preventing new flies from developing. You'll be doing it at that stage of their life cycle when it’s easiest and cheapest to stop them.

Now, finally, today, think once again of all the pests that bother us—the grubs and caterpillars that destroy our vegetables and crops, the insects that attack so much of what we produce—all those pests have life cycles. While there are some that have only three main stages instead of four, it's often easier and cheaper to control them at one stage than it is at another. As we just heard, the house fly bothers us most when it's an adult, but the stage in the life cycle to stop it is at the egg stage. We do this by not providing any places for flies to lay their eggs. This way there'll be no maggots, no pupa, and no more adult flies.

So now you can see why I said that it's useful to know about the life cycles of insects. By knowing about the life cycles of the main insect pests that bother you, you can deal with them at the stage in their life cycle when it can be most effective with the least effort and expense.

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

**Notes**

1. Many people are not aware that caterpillars, grubs, and maggots are actually insects, in an early stage of their life cycle. Many do not know there is any connection between them and their adult stage. Because of this, they do not know that dealing with pests at a stage when they are not bothersome may sometimes be easier and cheaper than dealing with them at the stage when they are the most troublesome.

This item (Item 8) contains an explanation of the different stages in the life cycle (metamorphosis) of insect pests that plague the farmer. It is information that all farmers should know. After they know and understand it, they will be better able to deal with many of their pest problems.

2. This is an item that you could easily break up into two shorter ones. The first would deal with the basic information about life cycles. The second gives an example and why it's important to know about life cycles. If the item is broken into two shorter ones like this and presented in different instalments, an introduction to the second instalment should include a short review/summary of the first one.