

# Pack 116, Item

Type: Two-host

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**Careful, safe, and wise pest management – with and without pesticides**

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Notes to broadcaster

One of the major components of food security is access to safe food. When used carefully and wisely, synthetic pesticides can support access to safe food. But when not used carefully and wisely, pesticides can harm human health and the environment and contaminate food.

This two-host presentation looks at how not using chemical pesticides carefully can create harm, and discusses the importance of following simple guidelines that are often explained on the pesticide label to reduce that harm.

It also discusses wise use of pesticides: prioritizing ways of preventing pest populations from rising to the point where treatment is necessary, using a wide variety of preventive tools, and using the safest and most effective pesticides available only when needed.

You might choose to present this script as part of your regular farmer program, using voice actors to represent the speakers.

You could also use this script as a foundation for creating your own program on the importance of taking a wise, careful approach to pest management, and in particular to the use of synthetic pesticides.

You could interview small-scale farmers, extension workers, and pesticide experts from government, NGOs, and industry. You could ask them:

* What are the potential negative impacts of pesticides on human health, the environment, and farmers’ crops?
* What steps can farmers and consumers take to decrease those risks?
* What place should pesticides occupy in an overall approach to managing pests?

Estimated running time for the script: 20 minutes, with intro and outro music

**HOST 1:** Welcome to the program. Today, we’re going to talk about a subject about which there is a lot of misinformation.

**HOST 2:** That’s right. Today, we’re going to talk about chemical pesticides. We’ll try to clear up some of the many myths about pesticides and give you the facts about these very useful and potentially harmful products.

**HOST 1:** Many people say that chemical pesticides are dangerous—that they can harm people’s health, damage the environment, and contaminate the foods we eat. I understand that you have talked to pesticide experts and experienced farmers about this. What did they say about this?

**HOST 2:** The first thing they say is that chemical pesticides are a powerful tool for farmers to help manage pests. But, like other powerful tools, they must be used wisely and carefully. Otherwise, they *can* cause harm to human health and the environment and contaminate food.

**HOST 1:** So how can farmers use them wisely and carefully?

**HOST 2:** First, to avoid harm, it’s very important to pay attention to the directions on the label of the pesticide. The label tells farmers how much pesticide to apply, how to apply it, when and when not to apply it, and many other useful things.

**HOST 1:** Is using too much pesticide a problem?

**HOST 2:** Absolutely.If a farmer uses too much pesticide, several things can happen. It can harm the farmers’ health while he or she is applying it, it can lead to pests becoming resistant to the pesticide, and it can contaminate food. So it’s important to use just the right amount—as directed on the label.

 Also, if a farmer applies pesticide in the wrong way—for example at the wrong time of day, applied to the wrong part of the plant, then the pesticide will not work as well as it could. And when it doesn’t work as well, pests might devastate your crops. When that happens, many farmers are tempted to use more pesticide. And that causes the kind of damages I just explained.

**HOST 1:** That sounds like a bit of a mess. When the pesticide doesn’t work, you just apply more and more – and it causes more and more damage.

**HOST 2:** Yes, it’s what we call the pesticide treadmill.

 There are some other things it’s important to pay attention to. For example, for many pests, it’s best to apply pesticides at the particular time of day when they’re most active—that might be early morning or early evening. Using a pesticide at the wrong time leads to poor performance and tempts farmers to use more.

 Also, it’s important not to spray pesticides near bodies of water because many pesticides kill fish and other creatures that live in or near water. With many pesticides, it’s important not to spray them when pollinating insects like bees are most active, which is the early afternoon. Many pesticides kill bees. And many crops rely on bees for pollination. If your crops are poorly pollinated, your yields are reduced.

**HOST 1:** That’s a lot of information. If I can summarize everything that you just said, I would say that it’s important to follow the directions on the label—to use just the recommended amount of pesticide, not too much or too little. And also that it’s important to use pesticides at the right time of day, and not to spray near water. And that’s all about using pesticides carefully.

**HOST 2:** Yes, that’s a good summary.

**HOST 1:** You also mentioned that it’s important to use pesticides *wisely*. That’s an interesting word to use. What do you mean by using pesticides wisely?

**HOST 2:** What I mean is that farmers should never consider pesticides to be the only tool they have for managing pests. Pesticides shouldn’t even the first tool they think of for managing pests.

**HOST 1:** So how should farmers think about managing pests?

**HOST 2:** The best approach to managing pests is to use a very wide variety of different kinds of tools. This is the approach that we call Integrated Pest Management or IPM.

Pesticides are a tool we should use when we can’t manage our pest problem with other tools. IPM recommends that we try to reduce our pesticide use as much as possible. This is not only because pesticides are potentially harmful, but because they’re very often quite expensive.

**HOST 1:** You mentioned “a wide range of different kinds of tools.” What do you mean by that?

**HOST 2:** There are different types of tools, including cultural tools, physical or mechanical tools, biological tools, and of course monitoring your field closely for pests. Many of these tools are designed to *prevent* pest buildup rather than to treat or kill pests.That’s another important principle of IPM: It’s best to focus on preventing pests, and only treat them if necessary.

**HOST 1:** Please give me an example of these kinds of tools: a cultural tool, a biological tool, and so on.

**HOST 2:** Sure.Cultural tools are agricultural practices that farmers can use to help crops be healthy and prevent pest and disease problems. For example, changing irrigation practices can reduce pest problems, because too much water can increase root diseases and weeds. If farmers intercrop with plants that are less attractive to a serious pest, the whole field becomes less attractive to the pest. Trap crops are crops that pests like as much or more than the crop you’re trying to protect, but which don’t generate important income for the farmer. You can use trap crops to “lure” pests away from the main crop, and then the trap crop can be uprooted and destroyed.

Crop rotation is another cultural tool. If you rotate your maize with legume crops, you decrease the susceptibility of your maize to pests and diseases. And to manage stem borers, you can intercrop your maize with non-host crops such as cassava and grain legumes.

**HOST 1:** Ok, that covers cultural tools. What other tools should a wise farmers use to manage pests rather than relying too much on chemical pesticides?

**HOST 2:** There are biological tools. Biological pest control involves taking advantage of the natural enemies of pests that are already in your field. Natural enemies include pest predators, organisms that parasitize pests, organisms that cause diseases in pests, and insects that compete with pests. Scientists estimated that natural enemies account for 50-90% of the pest control that occurs in crop fields that are not sprayed with pesticides.

You can modify your field to make it more favourable for natural enemies and/or less favourable for pests. For example, you can plant crops that provide food for the adult stages of natural enemies close to the crop you want to protect. You can plant live fences, for example trees or hedges, that provide shelter for natural enemies. You could add stakes in your field where insect-eating birds can perch. If you add mulch around plants, it provides an attractive environment for ground-living predators like beetles and spiders that eat pests.

**HOST 1:** And these methods are all about preventing pests, not about treating them, right?

**HOST 2:** Exactly. You only treat pests if your preventative methods are not enough to bring pest populations low enough so that they don’t cause a significant problem.

**HOST 1:** So we’ve talked about how important it is to be careful with spraying pesticides by following the directions on the label and, for example, not spraying near water or when bees are active. And we’ve talked about how farmers can act wisely by using a variety of approaches to prevent pest populations from getting too big, instead of relying too much on pesticides. What else should we know about pesticides and treating pests?

**HOST 2:** There are safer pesticides, including biological pesticides made from natural plants and other ingredients. These might include neem seeds and leaves, and the seeds or leaves of other plants. There are many plants that help to manage pests. And though they may not kill a high percentage of pests like chemical pesticides do, when you use these biological pesticides in combination with other preventive approach, you can achieve very good pest control. At the least, this allows you to reduce the amount of chemical pesticide you use.

One other common type of safer pesticide is made from a commonly-occurring bacterium called *Bacillus thuringiensis*, also known as Bt. This may or may not be available and affordable in your area, but it can be highly effective and is quite safe.

**HOST 1:** People sometimes talk about chemical pesticides harming human health. How would that happen and how can we prevent it?

**HOST 2:** It could happen in a few ways. First, as I mentioned before, it’s important to follow the directions on the label. Many pesticide labels advise never to spray pesticides on a windy day. Wind can carry spray droplets a long way, and if a neighbouring farmer, or even a schoolchild, is near, they could be poisoned.

 Also, the pesticide label includes two kinds of intervals. The first is called the pre-harvest interval and it’s the minimum amount of time that must elapse between the last spraying and harvest. For example, the label might say that you need to wait 14 days after last spraying a pesticide before you harvest it. If you harvest before that date, harvesters can be poisoned by getting pesticides on their hands or elsewhere on their body. Or they could be poisoned by inhaling the pesticide from the plant. Also, when consumers eat food that is harvested before the harvest interval, they can be poisoned.

 The second interval is called the restricted-entry interval. This is the amount of time between the application of the pesticide and when farmers can enter to do hand labour tasks on the crops.

 And, of course, if you use too much pesticide, even if you respect the other intervals, the harvester or the consumer could be harmed.

**HOST 1:** Again, this is a lot of information to digest. But if I can summarize, I would say that we talked about two new things. We talked about safer, biological pesticides, such as neem, other plant-based pesticides, and Bacillus thuringiensis or Bt. Secondly, we talked about how farmers and consumers can sometimes be harmed by pesticides, and how we can attempt to prevent that.

 Do you have any final words on this topic?

**HOST 2:** Unfortunately, I must add that, in Africa, there are some pesticides which are still being used which are quite toxic and could poison people even when used in accordance with the label. Governments are slowly phasing these out, but some remain in circulation. And sometimes there are stockpiles of obsolete pesticides, or even fake pesticides. Both obsolete pesticides and fake pesticides can definitely harm people.

**HOST 1:** How do we avoid using these products?

**HOST 2:** The best way is to know your input supplier well, to ask them lots of questions about the authenticity and the toxicity of the products. Ask them which is the safest, effective product you can use. Sometimes the cheapest products are not the safest or most effective, so keep that in mind too. You could also phone in to your local radio station and ask them to have an expert speak about these topics on the air. You and the other farmers in your area have a right to know everything you can about the products you are using to manage pests.

**HOST 1:** This is a very big topic and I think we could talk about it all day. But I want to thank you, \_\_, for bringing us all this knowledge from the farmers and other experts you spoke with.

**HOST 2:** It has been my pleasure. Goodbye to the listeners, and see you next time.

**HOST 1:** Goodbye till next week.

**Acknowledgements:**

Contributed by: Vijay Cuddeford, Managing editor, Farm Radio International, based on interviews conducted by Aboubakar Gakou.

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