

## **Learning by Ear – Environment**

### **02 – Pesticides and Insecticides**

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#### **Intro**

Hello and welcome to Learning By Ear's special series that takes a look at the environment. Today you'll hear about the use of pesticides and insecticides. While they may increase our crop yield, pesticides have potentially devastating consequences on the local environment. Today's Radionovela will tell the tale of how toxic pesticides remain in the environment, seeping into the soil and water supply. Once the chemicals enter the food chain no predator is safe as the poison's concentration levels increase. We'll also hear how the practice of so-called "monoculture" – the production of just one crop over a large area – requires the use of even more pesticides and insecticides. And finally we'll find out more about the so called Dirty Dozen ... Stay tuned!

#### **Music – 0:30**

#### **Radionovela – 5:00**

## **SFX\_Birdsong and SFX\_Rustling\_Branches**

1. Monica: Moses, your farm's crops are looking very healthy.

2. Moses: [proudly] Thank you, Monica. It is well managed by my father.

3. Gladys: It's true Moses, you farm must be so productive! What do you grow?

4. Moses: Mostly we are growing cotton, Gladys. Our farm is ten hectares and that is our main income earner. But we also grow a small amount of vegetables for own consumption. You want to go for a walk through the cotton?

5. Gladys/Monica: Why not.

## **SFX\_Walking\_Through\_Cotton\_Crop**

6. Moses: Look at this cotton here, it is nearly ready for harvest.

7. Gladys: [exclaims] But none of the cotton is damaged! My uncle also produces cotton. But this year he lost his entire crop.

8. Monica: How come Gladys?
9. Gladys: We had an invasion of pests. I don't know what they were but they destroyed everything!
10. Moses: Ah that won't happen here. Every week we spray the entire farm with pesticide...the insects don't stand a chance!!
11. Monica: What's a pesticide Moses?
12. Moses: Pesticides are chemicals that we use to kill pests, particularly insects. We call those ones insecticides. Then there are also chemicals we can use to kill weeds. Those are known as herbicides.
13. Monica: Well they sound the perfect solution to your problems Gladys. Why doesn't your uncle use them Gladys?
14. Gladys: Well there are two reasons. Number one they are expensive and he can't really afford to keep spraying the farm as Moses's father does. But the other reason is that they are harmful to the

environment...and you know my uncle, he is passionate about the environment.

15. Moses: [defiantly] Yes but which is more important: saving the environment or making sure your crop survives so you make a profit at the end of the year?!

16. Gladys: [growing irritated] Moses everything always boils down to profit with you! Don't you care about anything else!

17. Moses: No, I want to be a rich man!

### **SFX\_Spaying**

18. Moses: We should stop here. They are spraying just up ahead. The chemicals will irritate your skin...they can even damage your clothes.

19. Monica: Why is that?

20. Gladys: It is because the pesticides are so toxic, Monica. These pesticides are poisonous...that's how they kill the pests.

21. Monica: Ahhh...But why do you say they are harmful to the environment if they are just

killing the insects that would otherwise damage the cotton?

22. Moses: That one is a good question! I'd like to know the answer...
23. Gladys: I'll tell you why...do you think pesticides only kill the insects that eat your crop?
24. Moses: Uhhhh.
25. Gladys: [Frustrated] No, of course not. They kill any insect that has the misfortune of landing on your cotton.
26. Monica: [sniffing the air] What's that awful smell?
27. Gladys: I can smell it too...it smells like a dead animal...
28. Moses: Oh, we picked up a whole load of dead birds over the weekend. They were scattered all across the farm. It happens every year.
29. Gladys: [angry] Show me!

## **SFX\_Walking\_Through\_Crops**

30. Monica: [horrified] Oh Moses, how many are there?

31. Gladys: There must be more than a hundred! You realise why they are dead, and why this happens each year, don't you Moses?

32. Moses: No I don't.

33. Monica: They haven't eaten the cotton too have they?

34. Gladys: No, but they HAVE fed on the insects that eat the cotton.

35. Moses: Gladys, I don't understand:

36. Gladys: To be honest I don't understand why either. I just know that it happens. But my uncle can explain everything to us...

**X fade SFX\_Birdsong into SFX\_Digging\_vegetables**

37. Gladys: There's my uncle digging up his cabbages. Hello Uncle Julius!

38. Julius: [giving long groan] Well hello Gladys. Excuse my groaning, I'm too old to still be digging up vegetables.

## **SFX\_Throws\_Spade\_to\_Ground**

39. Gladys:                    Uncle Julius, we want to know why pesticides can be so damaging to the environment.
40. Julius:                    [Grunts] Ah, pesticides...my pet hate! Let me tell you this. Nearly all pesticides have the potential to harm the surrounding ecosystem.
41. Monica:                    Yes, but how?
42. Julius:                    You see, they are toxic. That is to say, poisonous. Sometimes, the poison stays in the food-chain. The experts call these substances "bio-accumulative".
43. Monica:                    So you mean that when an insect dies as a result of the insecticide, it then becomes poisonous.
44. Julius:                    Precisely, Monica. And if a bird eats enough of the dead insects it too will then be poisoned...
45. Gladys:                    Just like the ones we saw on your farm Moses!

46. Julius: There's another problem...after a while the insects become resistant to the pesticide, so the farmers have to spray even larger quantities. This means the concentration levels of the poison in the food chain are even higher.
47. Julius: Then if a scavenger eats the dead bird it too will carry the poison. The further up the food chain you go, the more concentrated the poison becomes.
48. Moses: Will the pesticide only affect the animals on the farm?
49. Julius: No, no, no. Unfortunately, most of these pesticides seep into the soil and eventually into our rivers. The chemicals end up harming organisms many miles away from where they were first sprayed.

### **SFX\_Approaching\_footsteps\_Across\_Soil**

50. Julius: Ah, here is Gladys' cousin, Boniface. He has another pet hate, don't you Boniface!
51. Boniface: What's that father?

52. Julius: I was just telling Gladys and her friends your thoughts on Monoculture...
53. Boniface: Don't get me started on that!
54. Moses: What's mono...[hesitates on word]
55. Boniface: Monoculture...it's the practice of growing one single crop over a wide area. For example a farm, which grows only cotton or maize.
56. Moses: Boniface, what's wrong with that? We grow only cotton because my father says it is easier for the cotton to grow if there is no competition from other plant species. And because the cotton plant then grown more efficiently you need less land to produce a much higher yielding crop.
57. Boniface: That may be so, Moses. But monocultures tend to require more pesticide than mixed crops.

[Hummm of agreement from Julius]

58. Gladys: And if what Uncle Julius says is true then that means that monocultures are more harmful to the surrounding ecosystem.

59. Boniface: That's right, Gladys. Monocultures reduce the biodiversity of an ecosystem to an even greater extent. You see there are other species of plant that live on the soil that would want to grow but are destroyed by the pesticide.

60. Monica: But there must be a balance. Moses' farm is very successful but the environment is suffering. Here, the environment is healthy, but your cotton, and therefore your profits, is not.

61. Gladys: It's true, there is always a balance to strike.

### **Music – 0:30**

### **Did you Know? – Dirty Dozen**

Have you ever heard of the dirty dozen? These are twelve of the most toxic substances to be found on the planet. They're all what are called Persistent Organic Pollutants, commonly known as POPs. On the whole these are man-made chemicals and are often used in farming and in industrial processes. Some of these are found in the pesticides we've just been hearing about. Perhaps the best known POP is DDT which we'll come back to in a moment.

They are “persistent” because they don’t break down easily in the environment. And they are “organic” because they all compounds that contain carbon. For this reason they tend to accumulate easily in the bodies of animals and humans, particularly in fat.

POPs are among the most dangerous of all the pollutants released into the environment every year by human-activity. They are highly toxic and are blamed for causing death and disease around the world. Some cause cancer and allergies, while others can damage to the body’s nervous system and lead to birth defects. In fact they are so toxic that at the turn of the century 90 countries signed a treaty designed to curb their use. Environmentalists heralded the move as an important step to make the world a cleaner and safer place.

But the debate is not always so one-sided and straight-forward. Take one of the Dirty Dozen known as DDT. This pesticide is still favoured by many as one of the most effective means to eradicate the world of malaria. Many countries still need DDT to control the malarial mosquitoes that carry the parasite. Malaria is a major killer in many tropical regions and costs African economies hundreds of millions of dollars every year in lost work-days. Supporters argue that the health benefits and DDTs low cost outweigh the environmental costs. No one however doubts the toxicity of DDT. So if it is to be used to fight Malaria in countries like Uganda then experts say it must be used under strict guidelines.

## **Outro**

And that's all for today's Learning By Ear special environment focus on pesticides, written by Richard Lough. Thanks for being with us and remember: there's a balance to be struck between crop yield and environmental damage. If you want to hear the programme again or tell friends about it, go to our website at [www.dw-world.de/lbe](http://www.dw-world.de/lbe). Good Bye.