# Dcfrn-~1Developing Countries Farm Radio Network

# Package 79, Script 3

November 2006

# \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Aflatoxin, Enemy of Food and People

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Notes to Broadcaster**

Unfortunately, humans are not the only species who like to eat the foods that farmers grow. Besides the well-known hunger of insects, birds, and rodents, there are many kinds of microscopic fungi and bacteria that attack food and, very often, make it unfit for human consumption. Aflatoxin is a poisonous substance produced by some types of fungi. It grows on cereals, legumes and tubers, including maize and ground nuts. Aflatoxin not only spoils food; it can also make people very sick. Aflatoxin can also have an economic impact on farmers and on the whole export economy of a nation. The presence of aflatoxins or other contaminants means that food cannot be sold for a good price. Lucrative international markets such as the European Union allow only very low levels of aflatoxins in food imported from Africa or other areas.

In many areas, farmers have never heard of aflatoxin. Radio broadcasters can do a great service to farmers by passing on reliable information about aflatoxin, including the kinds of management and storage practices necessary to prevent aflatoxin contamination.

In the script, there are two ‘clips’ of scientists speaking. There are several ways to adapt this part of the script. Most simply, you could ignore the clip and simply insert a question to which the doctor responds with the quote in the clip. If you are using actors for the scientists, you could make a tape of the actor and insert it at the appropriate place. As always, adapt the script to your local situation and your capacities.

*Signature tune, then fade under narrator.*

Host: In Africa, as elsewhere, poor quality food is sometimes responsible for the

poor health of both people and livestock. Food can be contaminated by insect damage, pesticide residues, or poisons from types of fungus which grow on food. One of the most dangerous contaminants is aflatoxin. Aflatoxin is produced when poor harvesting and

storage techniques lead some kinds of food to develop moulds. In the interview you’re about to hear, Dr. H, a researcher in post-harvest issues, and Dr. K, a medical doctor, will explain the work of a team of scientists who are fighting the aflatoxin problem. Without further delay, I invite you to listen to the show.

*Signature tune up for 10 seconds, then out*.

**Clip of** **Dr. H**: The food that we eat can be contaminated by toxins or poisons such as moulds and fungus. I work on a specific toxin called aflatoxin. Aflatoxin is a substance which is made by a fungus that is found in mould. It grows in foods such as maize, ground nuts, and many other crops.

Host: These sobering words from Dr. H highlight the importance of the topic he will discuss with us today, which are the health impacts of aflatoxin. Aflatoxin grows in the produce harvested by farmers. When people consume food which contains aflatoxin, their health can be seriously affected. (*Short pause*) Dr. H, welcome to the show. Can you give us some specific examples of the health impacts of aflatoxin?

**Dr. H**: People who ingest large quantities of aflatoxin can actually die from intoxication. So far we haven’t had any serious cases in the Republic of Bénin, but in Kenya it’s a different story. In Kenya there have been cases where people have been exposed to high levels of aflatoxins and have died. In the Republic of Bénin, people are usually exposed to smaller quantities over a long period of time. The children we have examined have shown us that continuous exposure stunts their growth. Children living in areas with higher levels of aflatoxin are a lot smaller than children living in areas with lower aflatoxin levels.

**Host**: What are the symptoms of aflatoxin exposure?

**Dr. H**: The symptoms vary, depending on which organ is affected. For instance, if the liver is affected, the person will suffer from jaundice - their eyes will be yellow. If aflatoxins disrupt the absorption of proteins in a child’s body, the child will suffer from kwashiorkor, a serious type of malnutrition. If aflatoxins affect vitamin A absorption, then the child’s growth will be stunted.

**Host:** I understand that the mould that produces aflatoxin grows on cereals, legumes, and tubers. At the moment, however, researchers are mainly focusing on maize, the most important food crop in many African countries. Dr. H, how does aflatoxin affect maize?

**Dr. H:** Maize is often mouldy because farmers lack good storage and drying conditions. People harvest poorly, store poorly, and leave harvested food on the ground, partly because they don’t realize that aflatoxin contamination is serious.

**Host:** How do you explain aflatoxin to farmers, who may not understand what it is?

**Dr. H:** When we speak with farmers, we say that aflatoxin is a poison. Farmers all know what poison is because they use rat poison. We ask them what poison does to rats when it enters their bodies. It destroys organs and kills the animal. Aflatoxin does the same thing.

#### Host: As a doctor, what do you recommend to address aflatoxin poisoning?

**Dr. H:**Unfortunately, my answer may disappoint you. There is no treatment for aflatoxin poisoning. There are only prevention methods. I should make myself clear - there is no medication that can treat aflatoxin.

**Host:** Then, as a doctor, how do you contribute to preventing aflatoxin poisoning?

**Dr. H:** One way is by encouraging farmers to adopt better post-harvest practices. People should harvest at the right date, especially for maize. Also, storage facilities must be sanitary, very clean. And people must take the time to sort the good from the bad produce. Unfortunately, as a result of poverty, sorting produce is becoming more and more difficult. But, without efforts to change this situation, we will continue to experience aflatoxin problems.

**Host:** Do you have any hope that the situation can be improved?

**Dr. H:** I am optimistic. When I go to the field, people are familiar with the word “aflatoxin”. They worry about it. The challenge is to maintain this level of awareness so that it results in behaviour change - in other words, better post-harvest practices.

**Host:** Thank you, Dr. H. (*Pause*) Dr. H’s optimism cannot hide the fact that modern medicine cannot cure aflatoxin poisoning. But if science cannot cure it, what will happen to rural people and consumers? One answer, as Dr. H mentioned, is better post-harvest technologies. Dr. K is a specialist in post-harvest issues.

**Clip of Dr. K:** While aflatoxin problems begin in farmers’ fields, storage conditions can greatly increase aflatoxin levels. Often, because of the way that produce is stored in Africa, people forget about stored produce until the day they want to sell it. This is a dangerous policy when you’re dealing with aflatoxin. Other kinds of storage systems require farmers to examine stored crops each month and ask them to take certain actions based on what they observe.

**Host:** Welcome, Dr. K. What does your project recommend for post-harvest practices?

**Dr. K:** Our project shows farmers how to treat their crops with chemicals which do not pose high risks to human health. We suggest that, at harvest time, farmers should sort out the ears of maize that have been attacked by insects and put them aside, keeping only the good ears in traditional granaries. We also recommend that, after three months of storage in traditional granaries with the husks still on, a second treatment is necessary. Farmers should shell the maize and treat the kernels with a safe storage insecticide, then store the treated kernels in sacks for three to six months before selling or eating them. In some cases, produce treated in this manner can be stored for nine to 12 months.

**Host:** What is the reaction of farmers when you speak with them about aflatoxin?

**Dr. K:**The majority of them do not believe that aflatoxin exists. Aflatoxin has long-term health implications but no immediate symptoms, except when people are exposed to very high levels, such as have occurred in Kenya. But after awareness campaigns have been carried out, we’ve seen that there is behaviour change, particularly amongst traders.

**Host:** Thank you for your time and expertise, Dr. K. (*Pause*) As the researchers say, if our brave farmers would practice better and more sanitary post-harvest techniques, contaminants would have no opportunity to ruin our lives and poison us through the food that we eat. Storage facilities must be very clean and sanitary. Also, produce must be sorted after harvest so that insect-damaged crops are not stored with undamaged crops. Once these changes are made, we can expect quality food, better health and better commerce in tropical markets. This is particularly true in Africa, where humidity is synonymous with mould, the source of all our aflatoxin troubles.

*Signature music up for a few seconds, then fade under speaker*

**Host:** Thank you for listening to this program about public health, and please be careful not to buy mouldy produce when you next go to market. Goodbye until next time.

## Acknowledgements

Contributed by : Emmanuel S. Tachin,Service de l’Information et de la Communication IITA-Ibadan.

Reviewed by Ranajit Bandyopadhyay, Plant Pathologist, International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria.

Note: This script is adapted from interviews conducted by Emmanuel S. Tachin with Dr. Hounsa and Dr. Hell of the International Institute of Tropical Agriculture in Bénin.

Program undertaken with the financial support of the Government of Canada provided through the Canadian International Development Agency (CIDA)