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## Black Sigatoka, Water Purification

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### Black Sigatoka

Some time ago, we received an e-mail request from Bruce Robinson. He wrote, "I am an engineer working in Northwest Haiti....most of the plantains and bananas out here have gotten the sickness that the Haitians call Sigatoka. We are about to lose a very important source of revenue and calories. We have heard that there is a treatment that they are doing in the Dominican Republic where they immerse the entire small banana plant in a solution before planting it. Do you know anything about it?" Danny Blank, ECHO's farm manager, had the following response. "Black Sigatoka is a fungus that in recent decades has devastated the banana industry. The fungus colonizes the leaf and is spread through wind and infected material.

"Dipping the corm in a fungicide and/or insecticide solution, previously mentioned as a practice in the Dominican Republic, is a standard procedure for planting non-tissue culture bananas. I think this procedure is more for controlling the spread of the banana corm weevil and panama disease, a widespread soil-borne fungus, than Black Sigatoka. Nonetheless, in my opinion this is a good procedure to follow though it may not help in the control of Black Sigatoka. According to the late Dr. Phil Rowe, once an area has Black Sigatoka it is not possible to rid the area of the disease. However, different strains of the fungus and other diseases and insects may be prevented by this treatment.

"The only recommended control for current plantings that I know of is repeated fungicide applications on highly susceptible cultivars (such as the Cavendish group) or planting resistant cultivars. Since the former is expensive and impractical in smaller noncommercial settings, the planting of tolerant varieties seems to be the only real solution to this particular problem. The FHIA cultivars are recommended as they demonstrate good tolerance to the incidence of both panama disease and Black Sigatoka.

### Water Purification

ECHO staff member Bob Hargrave recently participated in an e-seminar on water purification (participants in many locations communicated by e-mail). Here we summarize a few of the items that were discussed during the seminar. Jacky Foo, moderator of the e-seminar, wrote, "I read [on ECHO's website] about the feedback from Drissa Kone in Mali about 6 years of experience in 15 school gardens in growing and using Moringa as food and medicine. World Vision has also reported on work in Mauritania. Do these local people use Moringa seed powder for clarification of their drinking water?"

Bob asked Beth Doerr if she had done any work with moringa as a coagulant in Mauritania when she and her husband Stan worked there. Beth responded, "I developed the Moringa project for World Vision, Mauritania. The focus of the project was using Moringa as a nutritional supplement but it also covered the water treatment aspect. The staff members were trained in how to use Moringa to treat water and the project planned to begin teaching this aspect to the communities in the second phase of the project (we didn't share that in the first phase because we wanted communities to save all of the seeds for planting). I left before the second phase of the project but I do know that the staff members were very impressed with the results and would use it on occasion when they traveled to communities that didn't have a good water source. It has a lot of potential, especially for countries like Mauritania where water is very scarce. When I lived in Malawi, the government was using Moringa on a large scale to treat the water supply for several of the cities. From what I understand it was a study through a grant and when the people who were doing the study left, the cities went back to using chemicals for their water treatment."

Jacky Foo also quoted the following from our website: "Seed powder can also be used to harvest algae from waste water, currently an expensive process using centrifuges. Spirolina algae is farmed in Mexico and Israel with minor production in other countries. The spiroolina is used in health food and cosmetic products, and it is a common fish food ingredient. Seed powder will cause the algae to sink to the bottom." Foo added, "The lack of simple and cheap methods for harvesting microalgae has been a major constraint in the use of algae in feeds. Moringa seed powder could be the answer to this problem."