



Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program

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Trip Report: Zambia

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Purpose of Trip:

The purpose of the trip was to gather baseline data on poultry health and management in some of the areas where the COMACO (Community Markets for Conservation) program is operating in Zambia. Information on current feeding, housing, and general husbandry was collected, as well as information on the causes of poultry mortality (disease, predation, poor management, etc).

Sites Visited: Eastern Province, Zambia

Description of Activities:

In summary, I compiled a training manual to implement specific improvements in poultry management in the Valley. Training workshops were carried out with over 500 local villagers. In addition, I set up a small laboratory and trained 6 COMACO extension officers more intensively, so that they can function as veterinary para-professionals.

My work was based in Mfuwe, at the Mambwe branch Conservation Farmer Wildlife Producer Trading Center (CTC). Upon arriving and discussing the project with the Regional Extension Coordinator, it was decided that I could both gather and disseminate information most effectively by meeting the poultry farmers in large groups. I designed a 12-page manual, entitled “Poultry Health and Management,” containing information on nutrition, housing, disease prevention, and common poultry diseases. I utilized pictures from an excellent FAO manual, entitled “Keeping Village Poultry.”

(http://www.poultry.kvl.dk/upload/poultry/training%20material/keeping%20village%20poultry%20-%20eng_version.pdf), to assist with this activity.

This manual was given to each of the 6 area Extension Officers for the Mambwe CTC, as well as local community trainers, depot managers, and the leaders of each poultry farmer group that attended one of my training sessions. Our goal was to stage at least one training session in each of the 6 chiefdoms in the Mambwe CTC area. I completed 11 training sessions before I left Zambia. I began each training session by asking the attending poultry farmers a set of questions about their flocks and the sorts of problems they face when raising chickens. I then went through the information in my manual and entertained questions, comments, and concerns. I trained a

total of **522** poultry farmers, of which **259** were men and **263** were women. In addition, I asked the farmers at each session if they had any presently sick chickens - if so, I performed a necropsy and related the results to the farmers. Four necropsies were performed, with pathology consistent with poor nutrition, GI parasitism, and possible *Salmonella* infection.

My meetings with the farmers revealed that they had very limited knowledge of poultry husbandry. Housing was not ideal, as it was difficult to build a spacious and well-ventilated chicken house due to limited resources and the danger of predation by wild animals. Every farmer group complained of mortality due to predation, especially by wildcats and birds. In addition, the farmers were not aware of the many options available in terms of feed supplements to improve the nutrition of their chickens. My survey revealed that the majority of chicken mortality due to disease occurs in the hot season and early rainy season (October to December). The signs described by the farmers point to Newcastle Disease Virus as a large player in this mortality, but I believe that other agents are present as well. External parasites and fowl pox are other widespread and important causes of high mortality and poor health.

Finally, before leaving, I conducted a more extensive training session with the Regional Extension Coordinator and 6 area Extension Officers. In this session, I discussed in more detail the common bacterial, viral, fungal, nutritional and parasitic diseases of poultry. I also explained, with the aid of photographs, the process of a post-mortem examination. The Extension Officers practiced using the new digital camera that I brought and left for their use in photographing post-mortem lesions. I demonstrated the procedure for fecal flotation analysis with fresh chicken feces, and the Officers practiced using a field microscope to identify parasite eggs. Finally, I made sure that they were familiar with all of the resources that would remain at the CTC (textbooks, CD's, computer files).

I left the Mambwe CTC a fully equipped laboratory, with all of the materials needed for necropsy (knives, shears, scissors, scalpel blades, gloves, formalin, specimen cups, etc) and fecal flotation analysis (centrifuge, field microscope, sugar and salt solutions, hydrometers for mixing solutions, glass slides and cover slips, paper cups, cheesecloth, mixing sticks, test tubes, etc). I also left a new digital camera for their use, in the hopes that visual communication will continue to flow between the extension officers and the Cornell College of Veterinary Medicine.

Suggestions and Recommendations:

If possible, it would be highly informative if a veterinarian were present during the hot and early rainy season to determine the exact causes of the high mortality during the season when the majority of health problems occur. I would also recommend trial runs of a heat-stable Newcastle Disease Virus vaccine, as well as drugs for ectoparasites and perhaps internal parasites. Since predation is a large source of mortality, improved housing through the distribution of chicken wire would be highly advantageous.

List of Contacts Made:

Name	Title/Organization	Contact Info (address, phone, email)
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