



**IFAR 2007 Professional Development Program
Completion Report
[800 words]**

Instructions:

Please submit the completion report by email, using this form, through the sponsoring CGIAR Center to ifar@ifar4dev.org within three months after the completion of the fellowship.

Please check if Thalwitz Scholarship

Yes

Name of Applicant Dr. Kassaye Aragaw

Sponsoring CGIAR Center International Livestock Research Institute (ILRI)

I. Work Program goals achieved (maximum length: 200 words)

The objective of the grant was to help analyze the data collected on the effect of strategic treatment of sheep with anthelmintics against gastro-internal parasites in the central highlands of Ethiopia, and dissemination of the information obtained to farmers and agricultural extension agents in the study area.

The study was carried out in two localities (Tsehay Sina and Geragn in Gera Keya district) in the central highlands of Ethiopia. The study involved traditionally managed farmers' indigenous Menz sheep flocks with uncontrolled year-round mating and grazing on natural communal pastures throughout the year. The animals were monitored in a longitudinal study from August 2002 to July 2005. The project started with 413 ewes, randomly selected from 31 smallholder sheep flocks. Later the number of ewes increased to 903 and all lambs born to these ewes were weighed, ear-tagged and included in the study group and followed up for the rest of their life for growth, survival and reproduction.

The study animals were grouped into three: control group which did not receive anthelmintic treatment; the second group, which was treated twice a year (mid-January and mid-June) for nematodes and Fasciolosis; and the third group, which was treated four times a year (in July for nematodes, in August/September for nematodes and trematodes, and in November/December and January/February for Fasciolosis)

A total of 675 lambs were assessed for birth weight between the treatment groups. Treatment with anthelmintics had no significant effect on birth weight of lambs. However, at 90 and 180 days age lambs of the twice treated group were significantly heavier than the control group ($P < 0.05$). At 270 days of age both treated groups were significantly heavier than the control group ($P = 0.001$). At yearling, the weight advantage of the anthelmintic treated groups was lost, and there was no significant difference between the three groups. Average daily gain of lambs up to 90 days of age was larger for the two times treated lambs compared to the control group ($P = 0.041$). Average daily gain of lambs up to 180 days was not affected by anthelmintic treatment. ADG of lambs up to 270 days was significantly higher for 4 times treated animals to the controls ($P = 0.026$); when analyzed at yearling the growth advantage was lost. Mortality up to 90, 180, 270 and 365 days of age was not affected by anthelmintics treatment.

II. Plans for follow-up (maximum length: 200 words)

The results of this study will be communicated to sheep raising farmers of the study area and those living in similar agro-ecology through agricultural extension staff. The advantage of dosing sheep with anthelmintics at certain times of the year will be described to the farmers. Dosing of sheep two times a year, in January and June, for both nematodes and Fasciola might suffice to reduce losses from helminthosis in the study area and similar agro-ecology in the region. This process will involve communicating the results of this work to local agricultural extension staff; which will be done by sending copies of the research result. This was thought to be done during the fellowship, but could not be achieved due to unplanned delay in the analysis of the data. For wider reference and application the results of this study will be published in peer-reviewed journals.

**III. Report budget utilization including whether budget was spent as planned
(maximum length: 100 words)**

The budget was spent as planned in the following manner:

Biometrics support	2,000
Training (farmers, development agents, technicians).....	3000
Per diem	3000
Publication cost.....	870
Books, journal, equipments etc	1,000
Travel expense (mileage)	300
Stationery	200
Miscellaneous (internet access, photocopy).....	500
Total	10,870

**IV. Assessment of the fellowship experience and general comments.
(Maximum length: 300 words)**

The research fellow benefited from the experience and expertise ILRI has in data management and analysis. Not only has the fellowship generated new research information in strategic dosing of sheep with anthelmintics in central highlands of Ethiopia, but also equipped the fellow with the skills of data management. The research fellow hopes that the skill obtained during the fellowship would be of use in the future.