93/0030 (8)

PROJECT SUMMARY

PD-AAF-359-A1

Major Type of Activity: Key Problem Area - Livestock

Project Title: Research on the Sterility Method of Tsetse Fly Control

Contractor: Agricultural Research Service, USDA

Contract Number: TA(AJ) 1-00 6-28-71

Contract Coordinator: Dr. Claude Schmidt
Title: Chief, Insect and Animal Research Division

Project Number: 130-030

Project Duration: Started 6/14/63 Termination Date 6/30/70 (Phase I)

Budget:

TA/AGF Project Manager: Mr. Carrol F. Deyoe

TA/AGF Project Specialist: Dr. Nels Konnerup

Purpose: As a result of transmission of diseases to man and animals, tsetse fly infestation hampers cultivation of over 4 million square miles of highly productive agricultural land in Africa. To validate the findings in Phase I that this insect can be eliminated, or at least effectively controlled through sterilization of the male species, it is proposed to extend the laboratory research on cage rearing and sterilization of the tsetse fly and to expand the limited initial test to a full-scale field trial. This second phase envisages the release of sterilized males on about 200 square miles of infested land to determine if such releases will permanently eradicate the natural fly population and to compare the cost per unit area of alnd with other methods of fly clearance. (The first phase, now completed, was conducted in Rhodesia; the proposed site for the second phase is Tanzania.)

Description of Activity: The initial stage of Phase II will involve establishing a fly colony of sufficient size to make the release of suitable numbers of sterile males possible. The release rates will be governed by predetermined fly population levels in the field. Periodic fly counts in the entire area will determine the sequential releases required and, after final release, the area will be monitored for a six-month period.

Accomplishments to Date: Cage rearing of flies under laboratory conditions was achieved in the earlier phase. New techniques developed at the initial research site, and in cooperation with other research institutions in Europe, have increased pupae survival and a new membrane feeding technique to supply blood meal promises to reduce operational costs. As a result in part of the fly rearing work in Rhodesia, laboratories in Bristol, U. K., Lisbon, Portugal, Maisson-Alfort, France and Sieberodorf, Austria have now established successful rearing colonies. These laboratories have perfected sterilization techniques for certain species

and are now shipping sterile flies for release programs in Africa.

Future Plans: Arrangements are contemplated for tie-in of this project with the newly developing International Institute of Animal Sciences in Kenya. Consultant services will be established with Dr. Nash's laboratory in England and the International Atomic Energy Agency in Vienna. A new field test area in Tanzania has been identified and an agreement with the Government of Tanzania has been negotiated for a large-scale (200 sq. miles) area field test. Collaboration with other research institutions is continuing. Research will be conducted to perfect mass rearing techniques for Glossina morsitans, the dominant tsetse fly species in Tanzania.

TA/AGF:NKonnerup:revised 6/16/71:flm:6/28/71