WORLD HEALTH ORGANIZATION
REGIONAL OFFICE
FOR THE EASTERN MEDITERRANEAN

ORGANISATION MONDIALE DE LA SANTE
BUREAU REGIONAL
POUR LA MEDITERRANEE ORIENTALE

INTER-REGIONAL SEMINAR ON
ANTI-LARVAL OPERATIONS

Alexandria/Cairo/Asswan/Abu Simbel
3-21 July 1972

IR/SEM.ANT.LARV.OPR/26.7

8 June 1972

ENGLISH ONLY

ANTI-LARVAL OPERATIONS AS APPLIED TO WELLS AND AN APPRAISAL OF ABATE 500E

by

Mr. S.E. Matta
WHO Technical Officer, Malaria, EMR

Vectors

The main vectors in Syria are A.sacharovi and A.superpictus. A.claviger in Aleppo Province, and A.sergenti in Dera'a Province are the secondary vectors.

Methods of Control

The methods used for the vector control were mainly two:

a. The application of insecticide for adults control (A.sacharovi and A.superpictus).

b. The use of solar oil (diesel oil) as a larvicide in very limited areas (A.claviger).

It is planned in 1972 to use Abate 500E as a larvicide where needed.

Anti-larval Measures

A. Diesel Oil

Diesel oil was used in 1970 and 1971 as a larvicide in limited areas in Aleppo province (Hy-Ballora of Aleppo city and Anadan village) against A.claviger.

1. Dosage: 5 cc of diesel oil/sq.m. was applied in wells and underground reservoirs.
2. Frequency and Period of Application: at weekly intervals for a period of 8 months (April - November).
3. Formulation: Diesel oil.
4. Treated Breeding Places:
   a. Type: wells and underground reservoirs
   b. Surface Area: 2-3 sq.m.
   c. Depth: 2-5 meters.
5. Equipment Used: Tin measure.
6. Manpower and Organizations: One man was assigned to cover a total of 200 wells and underground reservoirs (in Hy-Ballora and Anadan village) on weekly bases for a period of 8 months, supervised directly by a junior inspector.
7. Ecology: A.claviger is a breeder in wells and underground reservoirs, and is chiefly a domestic species; adults were found resting mainly on the walls of wells and underground reservoirs, and were noted not to travel far from their breeding place; it feeds on available host with preference to animals (in the only house where there was cattle, no cases could be detected). It is thought to breed and mate almost throughout the year, and found its density to be highest in August

and September. A.claviger was responsible for an outbreak in 1970 in Hy-Ballora of Aleppo city, as a result of which 64 cases were detected out of 113 people living in a compound of 13 houses. And out of 17 adults of A.claviger caught and dissected, two were found positive for sporozoites.

8. Transmission Period: Presumably throughout the year with transmission peak in June-October.

9. Methods of Evaluation:

   a. Entomological: Bi-weekly checking for adults and weekly checking for larvae presence.

   b. Parasitological: Through blood surveys repeated as often as possible, and by blood examinations of fever cases.

10. Results: The results of using diesel oil against A.claviger breeding places in wells and underground reservoirs had given excellent result, and it was so perfect to the extent that no A.claviger adults or larvae could be found, even for testing purposes, after a period of 6 months of regular larviciding at weekly intervals. However, the only disadvantage faced when using the diesel oil, was that a number of refusals were met where water was used for human consumption.

B. Abate 500 E

1. It is planned this year to use Abate 500 E as a larvicide in Syria, mainly in Dera'a Province (a) Dera'a Stream (b) Harir River (Yarmouk Valley) and (c) Seepage branches of rivers and water collections, against A.superpictus and A.sergenti.

2. Dosage to be applied : 62.5 gm. a.i./ha.

3. Frequency and Period of Application: At weekly intervals for a period of 6 1/2 months (mid-April to October).

4. Formulations: Abate 500 E containing 500 grams active ingredient per liter.

5. Treated Breeding Places:

   a. Type: River, streams and water collections, the banks of which are covered with vegetations, gravel, and stones.

   b. Surface area: 64000 sq.m.

   c. Depth: Less than half a meter.

6. Equipment to be used: Hudson X-pert sprayers with jet nozzle tip No. 8001.

7. Manpower and Organization: One squad leader with 3 workers to work weekly for a period of 6 1/2 months (468 Man/days), supervised daily by a junior inspector. The entomologists shall also keep close contact with the larviciding work. (Annexed are two maps showing the areas to be larvicided in Dera'a province).

8. Ecology:

   a. A. superpictus: It breeds in exposed, slow fresh running water in the presence of gravel and stone under favourable climate (April-November). It feeds usually indoors on available host.

   b. A.sergenti: It has the same habits of A.superpictus except that it prefers to breed in slow fresh running water covered with short vegetation in the presence of stones and gravel. It usually feeds and shelters outdoors.

9. Transmission Period: May - October.

10. Methods of Evaluation:

a. Entomological:

1. Larval fixed stations for weekly checking and adult fixed stations for bi-weekly checking.

2. Spot checks in different places at fortnightly intervals

b. Parasitological: Through mass blood and special survey as needed

11. Results:

Assessment of results shall be done in due course and soon after the work is done.