

**REPORT OF THE**

Held in Jeddah,  
Saudi Arabia  
12-16 September 1974

**FIFTH SESSION OF  
THE COMMISSION FOR  
CONTROLLING THE DESERT LOCUST  
IN THE NEAR EAST**



**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS**

Meeting Report No.  
AGP: 1974/M/4

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FIFTH SESSION OF THE COMMISSION FOR  
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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS  
Rome 1974

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## INTRODUCTION

The Director-General of the Food and Agriculture Organization of the United Nations, at the kind invitation of the Government of Saudi Arabia, convened the Fifth Session of the Commission for Controlling the Desert Locust in the Near East in Jeddah from 12 to 16 September 1974. He invited all the Member Governments of the Commission to be represented by delegates and the Government of Turkey and the League of Arab States, the Arab Organization for Agricultural Development and the Desert Locust Control Organization for Eastern Africa (DLCO-EA) to be represented by observers.

The Session was opened by H.E. Mr. Tahir Obaid, Under Secretary to the Ministry of Agriculture, Government of Saudi Arabia, who welcomed, on behalf of his Government, all the participants to the Session. He pointed out that since this was the first Session being held in Saudi Arabia after the establishment of this Commission, his Government attached particular importance to this Session and hoped that the deliberations would take place in the usual friendly manner and the Commission would be able to formulate concrete proposals for keeping the Desert Locust under control. He pointed out that since the last few years, his country was invariably infested during the winter/spring period but with energetic control operations undertaken with the assistance of FAO, the locust swarms were not allowed to escape from this area. He believed that the anti-locust operations undertaken in Saudi Arabia and the adjoining countries were not only for the benefit of the countries concerned but for the Near East region as a whole. He, therefore, emphasized the importance of control operations in the Arabian Peninsula and the continued cooperation of the Member Countries to deal with this age-old enemy of the farmer. He wished the delegates a pleasant stay in his country.

In reply, Mr. Gurdas Singh, Senior Officer, Locust Control and Emergency Operations Group, Plant Protection Service, FAO, on behalf of the Director-General of FAO, welcomed the participants and conveyed the thanks of the Director-General to the Government for inviting FAO to convene this Session in Jeddah and for providing numerous facilities for the same. He pointed out that the FAO is following rigorously its policy of plague prevention by promoting and assisting in controlling locust populations, wherever these may be, in their initial stages. This has helped to keep the recession in being, although there were quite serious infestations in the Indo-Pakistan region which he hoped would be controlled in time in order to avoid any eastward movement of swarms in the autumn.

### Officers of the Session

<u>Chairman</u> :	Mr. Tahir Obaid (Saudi Arabia)
<u>Vice-Chairman</u> :	Mr. Ahmad Sulaiman El-Ghaithiy (Oman)

The work of preparing the draft report was entrusted to the FAO Secretariat. Mr. Gurdas Singh and Mr. A. Khasawneh of the FAO Secretariat acted as Technical Secretaries.

### Acknowledgements

At the conclusion of the Session, the delegates expressed their cordial thanks for the hospitality provided and the facilities placed at the disposal of the Commission by the Government of Saudi Arabia. They also wished to place on record their keen appreciation of the efficient and tactful manner in which the Chairman and the Vice-Chairman had conducted the proceedings. They also thanked the FAO Secretariat for their efficient and prompt service.

PARTICIPATION IN THE SESSION

The following delegates from Member Countries of the Food and Agriculture Organization of the United Nations, observers and members of the FAO staff participated in the Session and contributed to the discussions summarized in this report :

Delegates from FAO Member Countries

Arab Republic of Egypt

Mostafa El Nahas  
Director General, Locust Research, Control and  
Agro-Aviation Department, Ministry of Agriculture  
Cairo

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Senior Researcher, Locust Research  
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Iraq

Abed Alabbass Aljaberi  
Agricultural Engineer  
Crop Pest Control Division  
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Saadi Alalawi  
Assistant Agricultural Engineer  
Crop Pest Control Division  
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Jordan

Jawad Dajani  
Director, Plant Production and Protection  
Ministry of Agriculture  
Amman

Kuwait

Gharib Khamis Gharib  
Head of Plant Protection  
Agriculture Department  
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Oman

Dawood Ahmad Ali  
Deputy Director, Plant Protection  
Ministry of Development, Department of Agriculture  
Oman

Ahmad Sulaiman El-Ghaithiy  
Deputy Director, Extension  
Ministry of Development, Department of Agriculture  
Oman

Qatar

Ibrahim Al-Bader  
Head of Horticulture Section  
Ministry of Industry and Agriculture  
Doha

Saudi Arabia

Tahir Obaid  
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Ministry of Agriculture and Water  
Riyadh

Salem Bamefleh Hadramy  
Director-General, Research Station  
Ministry of Agriculture and Water  
Jeddah

Ali Hazah  
Director-General  
Agricultural Extension Service  
Ministry of Agriculture  
Riyadh

Ibrahim Mokim  
Director, Plant Pest and Locust Control  
Ministry of Agriculture  
Riyadh

Ibrahim Abdulla Madini  
Director, Locust Control and Plant  
Quarantine, Locust Research Station  
Jeddah

Fuad Ramadan Kalkuttawy  
Director, Desert Locust Research and Survey  
Locust Research Station  
Jeddah

Yaqoob Ashore  
Director, Reporting and Forecasting  
Desert Locust Research Department  
Jeddah

Ahmed Ibrahim  
Locust Officer  
Desert Locust Research Department  
Jeddah

Sudan

Hassan Abbas  
Director, Plant Protection Directorate  
Ministry of Agriculture  
Khartoum North

Syrian Arab Republic

Raja Mouayad Azem  
Chargé d'Affairs  
Syrian Embassy  
Jeddah

Yemen Arab Republic

Nasser El Muafa  
Counsellor  
Ministry of Agriculture  
Sana'a

Ahmed Aawadh  
Ministry of Agriculture  
Sana'a

Ali Masaaod  
Ministry of Agriculture  
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Observer

Desert Locust Control Organization for Eastern Africa (DLCO-EA)

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Aden

AGENDA

1. Opening of the Session
2. Election of the Chairman and Vice-Chairman of the Commission
3. Adoption of the Agenda
4. Election of the Drafting Committee
5. The Desert Locust Situation during 1973/74 and Forecast
6. (a) A Review of the Desert Locust Survey and Control Activities carried out by Member Countries during 1973/74 and Plans for the Future  
(b) Role of aircraft in anti-locust operations in the Southwest Arabian Peninsula
7. Special Survey and Control Operations carried out in strategic areas
8. Consideration of the Report of the Executive Committee
- 9.(a) Anti-Locust Survey and Control Potentials Available in Member Countries of the Commission  
(b) Use of Organo-chlorine insecticides
10. Special assistance to countries of strategic importance for the control of the Desert Locust
11. Any Other Business
12. Date and Place of Next Session
13. Adoption of the Report



## SUMMARY OF DISCUSSIONS

### Desert Locust Situation during 1973/74 and Forecast

1. The Commission received from the FAO Secretariat a report on the Locust Situation. This was brought up-to-date by additional information supplied by delegates and observers.
2. In Saudi Arabia isolated and scattered adults were reported from Najran, Asir, and the Jizan and Quinfida Tihamas, in October/November, 1973. However, groups were reported in December, and by early January 1974, several mature swarms were seen on the Tihama as far north as Quinfida. Winter rainfall had produced suitable conditions for breeding on the Saudi Arabian Tihama, and by late December, gregarious breeding was in progress. During January a number of mature swarms of varying sizes and densities ranging from 2 to 6 kilometers were observed coming from the west into Quinfida and Jizan area. Due to favourable ecological conditions prevailing in this area, the swarms laid eggs in several instalments resulting in heavy hopper infestation by the end of this month. Control operations by ground teams were initiated. In February there were further reports of swarms ranging from 3 to 4 kilometers in size from the same area. At the same time, a large number of hopper bands of varying sizes were reported all over the area. In order to cope with the situation, an aircraft was obtained from DLCO to supplement the ground operations. This helped considerably to control the infestation in time. Although no more swarms were reported during March in Saudi Arabia, hopper bands of high intensity continued to be found during the month in Quinfida and Jizan area against which control operations concluded by the middle of the month. By the end of March, there were only scattered locust populations present in Southern Tihama, Asir and a few solitary locusts were also observed in Dawadmi, Kariq, Janbou areas. During April and May, some concentrations of adults and hoppers were reported in Quinfida and Jizan areas which were controlled. Although the ecological conditions were favourable in most of the parts of Saudi Arabia, only a few scattered locusts were seen elsewhere. Again in July good rainfall was received, this was followed by increase in locust population along the Southern Tihama and a further influx of adults was reported in August. Conditions in general were very suitable for breeding.
3. In the People's Democratic Republic of Yemen scattered hoppers and adults were reported until October. Scattered mature and immature adults were reported from several places on the Tihama of the Yemen Arab Republic in August and September 1973, but no breeding of any importance took place. In the People's Democratic Republic of Yemen a swarm of mixed maturity was reported from Al Ghaydah on 8 November and from Sayhut on 13 November, following a short spell of northerly winds starting on 8 November. Groups of mixed maturity adults were reported in coastal areas between Shihr and Abyan, and in the interior from Thamud to Beihan during November. In the Yemen Arab Republic an immature swarm was reported from Sana'a on 26 November, and a group of immature adults was seen at Kaheda on 22 November. Two immature swarms were reported near the border with Saudi Arabia in the first week of December, one on the Tihama and one in the interior. Due to drought conditions prevailing in the People's Democratic Republic of Yemen and failure of winter rains in Yemen Arab Republic most of the locust populations moved further north with the exception of a small number of adults which concentrated in the cultivated fields and subsequently laid eggs. Low density hoppers were detected during January and February 1974 in these areas with the exception of Wadi Shabia, Wadi Meifa, and Ahwar where thick concentrations of I to V instar hoppers were observed against which control had to be undertaken. Again in July a rise in adult population and low density solitary hoppers was noticed in Qusayir and Sayhut over about 500 square kilometers. During the same period thick hopper concentrations including marching bands were observed in Wadis Tamnod and Sakhof. Hoppers and fledglings were also located at Mayfash and were controlled. All instar hoppers were further noticed at Al-Hamiyah, Atiq, Nisab and Markha against which control was organized. A rise in population of both adults and hoppers was noticed in August and control was organized where hopper concentrations were found. In Yemen Arab Republic sudden rise of locust number was observed in July and by mid-August a loose yellow swarm covering about 20 square kilometers was observed and

controlled. Again in September concentration of early stage hoppers was observed over an area of 30 square kilometers in Wadi Habel area. Ecological conditions both in the People's Democratic Republic of Yemen and the Yemen Arab Republic were very favourable and breeding on a scattered scale was in progress.

4. One influx of adults was recorded on the east coast of the Sultanate of Oman in early November, and another in mid-November. In the United Arab Emirates a low density population was observed on the Batinah coast on 27 November and a group of immature adults was seen at Sharjah on 3 December.

5. In eastern Sudan scattered locusts were reported during October and November. In early December there was a sudden rise in populations found in parts of the coastal plains of Sudan. In the first week of December large groups of copulating adults covering about 5.2 square kilometers and an egg-field were reported at Dabbat Salim in the Tokar Delta, and control measures began. There was a report of a swarm on 15 December at Khawr Karora near Hamal Girba where an egg-field was found, and groups of adults as well as the swarms were reported heading southwest across the border with Ethiopia on 17 December. Hopper bands were reported in January 1974 near Jebel Meithtub (17.45N-38.25E) and Tokar Delta against which control was undertaken. By the end of February concentrations of green and black I to IV instar hoppers were reported near Karora and isolated adults at Khor Ashat. In April infestations were reported in Tokar Delta area, Hore Balatat and at Khashm El-Giba against which control was undertaken. With the exception of scattered locusts which continued to be observed in eastern Sudan from May onwards the country remained free from any gregarious infestations.

6. Other countries of the Region reported to be free from any locust activity with the exception of a few scattered locust observed in south eastern desert of the Arab Republic of Egypt in early February, 1974.

#### Forecast

7. Due to very favourable ecological conditions prevailing in the People's Democratic Republic of Yemen, in Jizan area of Saudi Arabia and in the Tihama of Yemen Arab Republic, the locust population present in these areas is likely to multiply further. If not controlled in time, and in the wake of favourable rainfall, a serious situation could develop during the winter months.

#### Control Operations undertaken in various countries

8. From October 1973 to August 1974 locust breeding and swarms were observed in the People's Democratic Republic of Yemen, Yemen Arab Republic, Kingdom of Saudi Arabia and Sudan, whereas other countries of the Near East were reported free from any swarm movement or any significant breeding. Among the above-mentioned countries, the Tihama of Saudi Arabia had the largest infestations where the ground operations had to be supplemented by a spraying aircraft for a period of 4 weeks during February and March.

9. The gross infested area of about 10,173 square kilometers was cleared by using approximately 224 tons of bait and BHC dust, 11,940 litres of dieldrin and 8,408 litres of malathion. The details are given in Appendix I.

#### Special Survey and Control Operations in Strategic Areas

10. In accordance with the recommendation of the Fourth Session of the Commission for Controlling the Desert Locust in the Near East (report paragraph 14), the FAO secured the services of two locust officers each from Egypt and Jordan to work in Saudi Arabia starting from early December 1973. All four officers worked along the Red Sea coastal plains of Saudi Arabia for a period of 4½ months. During this period they undertook extensive survey of the area and also participated in the control operations in Southern Tihama where infestations occurred from January onwards. In order to support the ground operations, an aircraft was obtained from DLCO for survey and control purposes in Jizan and Quinfida area.

The aircraft operated for a period of 4 weeks in this area and assisted in clearing the infestations well in time before these could escape to other countries in the Near East.

11. A locust officer from Egypt was also sent to survey the strategic breeding areas of Oman and Muscat. He arrived in Muscat on 1 April and surveyed the Batina coast till the end of May. During this period he made detailed observations on physical features, topographical and climatic factors prevailing in that part during that period. Only three locusts were observed. Advantage was taken to train local personnel during the course of the above surveys.

12. The Government of Pakistan sent a special mission to the United Arab Emirates to undertake survey of that area. The mission worked in this territory from February to May and the area was reported free from any locust populations during that period.

13. The Commission noted with appreciation that the prompt action taken against the infestations in the coastal plains of Southern Tihama of Saudi Arabia had prevented the spread of swarms to the neighbouring countries. This was made possible by the support of supplementary assistance provided under the aegis of the Commission. The Commission also expressed satisfaction for the arrangements made for special surveys in Oman and Muscat and recommended that such operations should be made a permanent feature and efforts should be made to assist the Government of Muscat and Oman to establish an anti-locust service in order to enable the Government to obtain regularly information on locust incidence during the appropriate seasons.

14. The Commission noted with appreciation that the Government of Pakistan sent this year an anti-locust mission to the United Arab Emirates for Desert Locust survey and control operations in that area. The mission regularly kept informed Jeddah and FAO Hqs about the results of its survey. This helped to cover this important area in which no other arrangements for this work so far exist. The Commission hoped that the Government of Pakistan would continue this cooperation in future.

#### Plans for future

15. Recognizing the importance of Red Sea Coastal Plains and the Gulf of Aden area as potential breeding places and the important role which the territories in the eastern Arabia can play in checking the upsurge of the Desert Locust populations, the Commission recommended that :

- (a) all possible steps should be taken to control the locust populations now present in the People's Democratic Republic of Yemen and Yemen Arab Republic and preparations should be made for a campaign in Southern Tihama of Saudi Arabia to combat any infestation which might occur during the coming winter/spring months;
- (b) depending upon the locust situation and in consultation with the Government of Saudi Arabia, the services of some senior locust experts should be secured for a period as might be required to assist the national Saudi Arabian anti-locust service in survey and control operations;
- (c) the Government of Saudi Arabia and the FAO Locust Officer should arrange to provide necessary transport to the above officers and ensure that sufficient quantity of insecticide and adequate control equipment was available. Such support should be supplemented to the extent possible by the FAO Regional Locust Secretariat;
- (d) adequate stocks of insecticide and funds should be available both in the People's Democratic Republic of Yemen and the Yemen Arab Republic;
- (e) arrangements should be made to obtain from DLCO one or two aircraft, as the need may be, to supplement ground survey and control operations in Saudi Arabia, People's Democratic Republic of Yemen and Yemen Arab Republic;

- (f) a special survey to be arranged in Oman by obtaining the services of some experienced locust officers from within the member countries of the Region. Such officers should avail this opportunity to provide in-service training to local staff so as to establish a regular reporting system in Oman. It would be useful if survey officer deputed to Oman establish contact with the Pakistan anti-locust mission, which normally operates in the neighbouring state of United Arab Emirates;
- (g) there was need for a post of an FAO Locust Officer to be established within the country IPF of Oman to assist the Government to establish an anti-locust service and to train local staff in survey and control operations.

#### Role of Aircraft in anti-locust operations in Southwestern Arabian Peninsula

16. The Commission discussed the importance of the Near East region due to its strategic geographical position in relation to the Desert Locust invasion area and pointed out that a large part of Southern Tihama of Saudi Arabia together with areas to the South fall within the general area in which important Desert Locust populations normally occur during recession periods and where gregarization had been repeatedly observed. There was a need for systematic seasonal surveys and control operations at an initial building-up stage if further plague upsurges were to be prevented. It further noted that this policy of survey and control had been followed in the past with considerable success and countries lying in the north of the Arabian Peninsula were invariably saved from any locust invasion.

17. The Commission, however, observed that during the years of heavy infestations the resources with the anti-locust services of Saudi Arabia, Yemen Arab Republic and People's Democratic Republic of Yemen were not adequate to cope with the situation in time. In most of the cases, assistance from outside was sought particularly in the form of aircraft which enabled control of the locust infestations before these could escape to invade the neighbouring countries. The use of aircraft in these countries in the recent past had, therefore, demonstrated that it was an essential component of the anti-locust operations if success was to be achieved to prevent the plague upsurge in future.

18. In view of the above, the Commission recommended that the Government of Saudi Arabia should give serious consideration to the establishment of an aerial unit for Desert Locust survey and control in the country. For this purpose there will be need to obtain at least three aircraft, out of which one may be a twin engine aircraft which would be used for transport and long distance surveys. The other two aircraft will be mainly for survey and control operations. It was considered that two pilots and one maintenance engineer with some subordinate staff should be sufficient to operate these three aircraft. At the same time there was need for immediate purchase and storage of sufficient quantity of appropriate insecticides for locust control. This is important in view of the general shortage of insecticides supply which could not be obtained easily and at short notice. The Commission recommended that since its present budget is not adequate to meet the extra cost of above mentioned proposals, it would be necessary that the Government of Saudi Arabia should purchase three aircraft with necessary spare parts and spray equipment and the Commission might take the responsibility of recruiting appropriate staff to operate the aircraft. For maintenance either the Government will make arrangements directly or request the Commission to do it on their behalf. FAO will also help to buy and store insecticides. For this purpose the Government of Saudi Arabia would provide allocation of funds over and above their usual annual contribution to be deposited in the Trust Fund with FAO, and requested FAO to prepare an appropriate project within the provisions of the agreement establishing the Commission and submit to the Government of Saudi Arabia for its consideration and approval. Such a unit, when established, will not only operate within Saudi Arabia but will be of great assistance to control the locust in other member countries of the Commission with the mutual approval of the Government of Saudi Arabia and the recipient Government. Till such time as the Government makes arrangements for having its own aircraft, it was suggested that, depending upon the locust situation, a necessary number of aircraft should be obtained from DLCO and other neighbouring countries for survey and control purposes. Wherever possible the recipient Government should be requested to pay for aircraft charges.

It further recommended that such visits of DLCO aircraft should be utilized in training local staff as airborne observers. This would facilitate the future aerial operations when the Government decides to have its own fleet.

19. The Commission recognized that the Governments of the People's Democratic Republic of Yemen and the Yemen Arab Republic cannot possibly afford at present to have their own aircraft. It therefore recommended that these countries should continue to utilize the services of aircraft which might be offered by other neighbouring countries or arranged by FAO for anti-locust operations in their respective areas. In order to facilitate such operations, the Governments should prepare temporary landing strips in their respective strategic breeding areas.

20. The Commission expressed its appreciation for the assistance provided by the Desert Locust Control Organization in Eastern Africa (DLCO-EA) in providing their aircraft for survey and control operations in the Arabian Peninsula and hoped that this cooperation would continue in future in the mutual interest of all concerned.

#### Report of the Executive Committee

21. The Commission considered the report of the Executive Committee (Appendix II) and adopted the recommendations contained therein and formally adopted the budget for 1975 and accounts for 1973.

22. The Commission noted that the Government of Yemen Arab Republic had paid a part of the arrears of their contribution and the balance would be paid soon.

#### Anti-Locust Survey and Control Potentials

23. The Commission reviewed the available anti-locust survey and control potentials with the Member Countries and prepared an up-to-date statement (Appendix III).

#### Use of Organo-Chlorine Insecticides

24. Under the existing control policy, control operations have to be rapidly instituted by applying the insecticide against the hoppers wherever possible. For these activities, the organo-chlorine insecticides dieldrin and gamma-BHC have been almost exclusively used. There are several reasons for the use of these chemicals.

25. The various locust organizations have experience in using these materials and their efficiency in killing locusts when properly applied is beyond doubt. Direct harmful effects on control personnel or man and his animals within the treated areas have rarely been experienced. The price of these materials is low and this enables locust control to be carried out at an acceptable cost. Formulations are available that prove very suitable for the spraying gear available and these can be stored for many years without any significant deterioration. This property is highly important: upsurges in population are unpredictable and if they occur large amounts of insecticide may be required at short notice and stocks must therefore be maintained against such emergencies.

26. There are differences in the properties of dieldrin and gamma-BHC which render each particularly suitable for specific kinds of application. Dieldrin is less volatile and more persistent. It is particularly valuable for application to areas where locust hoppers are feeding or are expected to feed. Because of the practical difficulties, including costs of covering large areas that may need to be treated some persistence is essential if these hoppers are to be dealt with prior to reaching the swarming stage. This kind of treatment is basic to locust control campaigns and at present there is no satisfactory alternative to dieldrin for the purpose. The insecticide is particularly toxic to locusts when applied in this way and the doses used, in most cases no more than 10g/ha, are much smaller than those needed against most other agricultural pests.

27. A considerable technology for the use of the pesticide against hoppers has been built up, including the introduction of special formulations. Equipment has been obtained for applying it accurately. Arrangements have also been made in many countries to apply this material at short notice if need be. As suitable alternative compounds to dieldrin are not available these forces would be immobilized if it ceased to be available and these undoubtedly beneficial activities would have to be put in abeyance.

28. During recent years, considerable thought has been put into possible alternative approaches to locust control. This has included investigations into the possible use of non-persistent pesticides. The subject is currently under study in a FAO project financed by the Swedish International Development Authority (SIDA) with counter-part contributions by the Desert Locust Control Organization for Eastern Africa, with whom the project is housed.

29. The substitution of organo-chlorine compounds by relatively non-persistent organo-phosphorus compounds and others does seem possible for dealing with adult swarms. Fenitrothion, for example, has already been used for this purpose. For the more important task of killing hoppers before they reach the adult swarming stage, however, no compound with properties approaching those of dieldrin has been found.

30. The Commission having noted the above (paragraphs 24 to 29) and referring to the recommendations made to the Fourteenth Session of the FAO Desert Locust Control Committee (Report paragraphs 52 to 54) recommended that dieldrin in oil solution and gamma-BHC in dust should continue to be used against hoppers and Fenitrothion and BHC dust be used against swarms until such time as alternative insecticides equally effective and economical for large-scale application were found. The Commission, however, emphasized that all necessary safety precaution should be taken in proper handling and application of these insecticides.

31. Considering the world shortage of supply of insecticides, the Commission recommended that Governments should take appropriate steps to secure adequate supplies of insecticide for future use. Recognizing the possible deterioration in storage of insecticide potency in its efficiency, the Commission noted that if the insecticide is stored properly the chances of retrogression of its active ingredient could be reduced to the minimum. Examination of some of the DLCO insecticide stocks, varying from 8 to 10 years old, had revealed that neither their concentration nor the active ingredient had retrograded more than 8 to 10 percent. The Commission recommended that apart from improving storage standards all stored insecticides should be analysed after every 4-5 years in the case of organo-chlorine insecticides and 1-2 years in the case of organophosphorus compounds and containers remarked according to the results obtained so that application dosage could be increased proportionately to obtain desired kill.

32. The following compounds were tested against the Desert Locust under the FAO/SIDA project and had given promising results :

<u>Name of Insecticide</u>	<u>Suppliers</u>	<u>Rate per litre in US\$</u>	<u>Remarks</u>
Fenitrothion	1. Bayer A.G. 5090 Leverkusen Bayerwerk West Germany	6	Concentration - 50% EC Rate of application - 500g/ha of active ingredient Could be applied with standard Micronair spray gear against swarms or hopper bands for direct hit.
	2. Plant Protection Ltd. Fernhurst, Haslemere Surrey GU273JE England		
Fenitrothion/ Sumithion	3. Sumitomo Chemical Co. Ltd. 15 5-Chome, Kitahama Higashi-ku, Osaka, Japan		

<u>Name of Insecticide</u>	<u>Suppliers</u>	<u>Rate per litre in US\$</u>	<u>Remarks</u>
Biazinon	CIBA-Geigy S.A. Agro-Chemical Div. CH-4002 Basel Switzerland	5-6	Same as Fenitrothion
Chlorpyrifos	Dow Chemical Co. Agriculture Chemicals P.O. Box 1706 Midland, Michigan 48640, U.S.A.	8	Available in 40% solution
Cyanophos	Sumitomo Chemical	6-7	Available in 50% EC Highly toxic to birds in general
Phoxin	Bayer A.G.	6-7	Available in 80-85% active ingredient
Propoxur	Bayer A.G.	10	Available in 20% solution highly toxic to locust

33. Recognizing the general shortage of insecticide and the difficulties experienced in obtaining it, the Commission recommended that FAO should supply to all the Member Countries the list of insecticide manufacturers and suppliers of commonly used insecticides and requested Governments to stock pile sufficient quantities of insecticides for their use in future.

34. Recognizing the world-wide shortage of supply of insecticides, particularly in the years to come, the Commission suggested that some of the oil producing countries within the region should consider establishing insecticide manufacturing or at least formulation plants for insecticide production to meet the growing needs of the countries of the region and even for export.

#### Assistance to People's Democratic Republic of Yemen

35. The Commission considered the request received from the Government for providing additional assistance namely : BHC dust 10% - 100 tons, dieldrin 20% oil concentrate 3000 gallons, BHC oil concentrate 15% or equivalent - 6000 gallons, hand dusters - 100, Power dusters - 6, Exhaust nozzle sprayers - 6 and Ten Land Rovers. Recognizing the strategic importance of this area where breeding took place almost continuously throughout the year in the recent past and against which control operations had to be almost carried out continuously, and realizing that the cost of POL and other operational elements had increased considerably, the Commission recommended that there was justification for providing further assistance to the People's Democratic Republic of Yemen.

36. Noting that during the past two years the actual operational cost amounted to approximately \$ 18,000 per year as compared to \$ 10,000 approved by the Commission and further noting that there was widespread breeding during the current year, the Commission agreed to increase the annual operating cost to \$ 20,000. At the same time recommended that depending upon the availability of funds in the Commission's budget, additional supplies of insecticide, equipment and transport might be supplied to the extent possible.

37. To meet the total needs of the Government of the People's Democratic Republic of Yemen, the Commission requested the Member Countries to consider providing assistance on bilateral basis wherever possible.

38. While agreeing to the above, the Commission emphasized the need for maintaining the existing Desert Locust and Plant Protection Project under the country IPF during 1975 and at the same time its continuation thereafter.

#### Assistance to Yemen Arab Republic

39. The delegate of the Yemen Arab Republic informed that his Government has established a Locust Section within the Ministry of Agriculture and based it at Hodeidah. The staff of this section was working in close cooperation with the FAO Locust Officer there but mainly dependent upon the equipment and supplies available at the FAO base. It had been noted that during the active season the FAO resources were not found adequate to meet the needs of the national anti-locust service and at times the operations suffered. He, therefore, requested that the Member Governments should give consideration for supply of the following equipment and material either from the budget of the Commission or under bilateral arrangements :

- 1 - 7 Land Rovers
- 2 - 3 Lorries 4 Wheel Drive
- 3 - 10 Exhaust sprayers
- 4 - 50 Hand dusters
- 5 - 20 Knapsak sprayers with dusting attachments
- 6 - 50 Tons BHC dust
- 7 - 1000 Sacks of bran or any other carrier for baiting
- 8 - 500 IGS of oily acrodel 15%
- 9 - 500 IGS of oily dieldrin 20%
- 10 - 20 complete field units for camping each for 5 persons
- 11 - good stores and garages in Hodeidah costing about 200,000 YR.

40. The Commission discussed the importance of the geographical position of the Republic in relation to Desert Locust breeding areas in the Arabian Peninsula and noted that the request for assistance was fully justified. It was pointed out that the FAO Project had 7 to 8 vehicles in good condition, some quantities of insecticide, a limited number of application machinery and a provision of about \$14,000 per year for operational cost. This was considered just adequate under normal years of infestations and could not possibly support the needs of the national anti-locust service. At the same time the budget of the Commission was heavily committed for training and other activities and there were not adequate funds to meet the above request. The Commission, therefore, strongly recommended that FAO should pass on this request to the possible donor countries for their favourable consideration.

41. The Commission agreed that establishment of a radio link between Sana'a, Hodeidah and Jeddah would certainly improve rapid transmission of information on locust situation between Saudi Arabia and the Yemen Arab Republic and requested that both Governments should take up this matter with their respective appropriate authorities and obtain formal agreement. The FAO will then assist in establishing this vital link.

42. The Commission noted with satisfaction that the Desert Locust Project in the Republic has been extended till 1976 and requested to UNDP to further extend it for another five years by which time, it was hoped, that the national anti-locust service would be fully trained and properly established.

#### Qatar Reserve and Assistance to Oman

43. The Commission considered the request made by the delegate of Qatar for supply of additional vehicles, insecticides and in particular spares for the existing transport for the Reserve, and from the delegate of Oman for further supply of insecticides. It was agreed that depending upon the availability of funds necessary assistance should be provided to the extent possible.



FAO Regional Locust Secretariat Jeddah

44. The Commission expressed its appreciation of the work done by the FAO Regional Secretariat at Jeddah and recommended that consideration should be given to further strengthen this office.

DATE AND PLACE OF NEXT SESSION

45. The Commission proposed that its next Session be held, during 1975, on a date and at a place to be decided by the Director-General of FAO in consultation with the Host Government. This Session of the Commission would be preceded by the next Session of the Executive Committee of the Commission.

CONTROL DATA FROM OCTOBER 1973 TO AUGUST 1974

LOCALITY	MONTH AND YEAR	TYPE OF INFESTATION (SHARMS, SCATTERED ADULTS, HOPPERS)	INFESTED AREA IN SQ. KMS.	INSECTICIDE USED				METHOD OF APPLICATION (AIR OR GROUND)
				BHC DUST IN KGS.	MALA-THION ULY	BHC DIELDRIN	OTHERS IN LIT.	
<b>People's Democratic Republic of Yemen</b>								
Wadi Sohabia 1310N4505E	Jan. 1974	Hoppers I-V	1/50	100	-	-	-	Ground
Wadi Meifa 1415N4730E	Jan. 1974	Hoppers I-V	1/25	150	-	-	-	-do-
Ahwar 1325N4643E		Hoppers I-V	1	1500	-	-	-	-do-
Mayfaah	July 1974	Fledglings and Hoppers I-V	4	1500 1000 (Bait)	-	-	-	-do-
Sayhut, Wadi Tasunn	Aug. 1974	-do-	50	2500	-	200	-	-do-
Nisab Markha	Aug. 1974	-do-	75	5000 7000 (Bait)	-	60	-	-do-
Wadi Arma, Shabwa	Aug. 1974	Fledglings and Hoppers IV-V	2	-	-	40	-	Ground
Al-Hamiyah	Aug. 1974	Fledglings and Hoppers III-V	2	400	-	-	-	-do-

LOCALITY	MONTH AND YEAR	TYPE OF INFESTATION (SWARMS, SCATTERED ADULTS, HOPPERS)	INFESTED AREA IN SQ. KMS.	INSECTICIDE USED				METHOD OF APPLICATION (AIR OR GROUND)
				BHC DUST IN KGS.	MALA-THION ULV	BHC LIQUID IN LITRES	DIELDRIN OTHERS IN LIT.	
<u>Saudi Arabia</u>								
Quinfida	Feb. 74	Adults, Swarms Hoppers		-	5400	-	5000	Air
Jizan	Feb. 74	-do-		-	1280	-	3840	Air and Ground
Quinfida and Jizan	March 1974	-do-	10,000	-	-	-	2800	-do-
Quinfida and Jizan	Feb. March Apr. 74	-do-		90,000 100,000 (Bait)	-	-	-	Ground
<u>Sudan</u>								
Red Sea Coast Tokar Delta		Adults, Hoppers		960 13160 (Bait)	1728	-	-	Air and Ground
<u>Yemen Arab Republic</u>								
Wadi Habel	July 74	Adults, Hoppers	6	100	-	-	-	Ground
-do -	Aug. 74	-do-	26	200 800 (Bait)	-	-	50	-do-