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المتحدة

Via delle Terme di Caracalla, 00100 Rome, Italy

Cables: FOODAGRI ROME

Telex: 610181 FAO I

Telephone: 57971

AGP Division

Locusts, other migratory pests and emergency operations group

DESERT LOCUST SITUATION SUMMARY AND FORECAST

No. 115 MARCH-EARLY APRIL 1988

SUMMARY

There was a large scale swarm invasion of Morocco and Algeria and, to a lesser extent of Tunisia and Libya, during March following unprecedentedly widespread gregarious breeding in Western Sahara, northern Mauritania, southern Morocco and western Algeria. At first, the swarms stayed south of the Atlas mountains but later some reached the Mediterranean littoral. Intensive aerial and ground control campaigns treated nearly 3,000,000 ha but the surviving swarms matured rapidly and laid and widespread breeding was in progress in Morocco and northern Algeria at the end of April. Breeding is also in progress in south-east Algeria but the scale is not yet known.

In late March further swarms produced in Western Sahara and possibly northern Mauritania moved south across Mauritania and reached Senegal, Gambia and western Mali. Others moved south across eastern Mali.

There were considerable escapes from breeding in north-eastern Sudan resulting in the formation of swarms which were reported from south-east Egypt and north-west Saudi Arabia.

For technical reasons the map which should accompany this summary will be distributed with summary No. 116

W/S 7475

WEST AFRICA

Meteorology

At the end of February and during the first and second decades of March there was substantial rain in northern Mauritania, extending as far east as the frontiers with Algeria and Mali. Tessalit in the Adrar des Iforas recorded 20.5 mm on 3-4 March. From about 20 March an extreme Azores anticyclone resulted in strong north to north-easterly winds and dust storms over Mauritania and the eastern Atlantic, reaching 50 knots over Cape Verde.

The Intertropical Convergence Zone lay around 10°N during March, but extended to 12-13° in mid-April.

Breeding conditions

By the end of March ecological conditions were becoming unfavourable for breeding in Tiris-Zemmour, except in wadis and areas near the Algerian and Malian borders.

Conditions were favourable in the Tessalit area.

Locusts

MAURITANIA

Breeding continued during March in Tiris-Zemmour. In the first half of the month the swarms which formed moved north but in the second half of the month there was a major southerly migration.

Tiris-Zemmour

In early March some 90-95% of the population had fledged. Most hoppers were in the fifth instar but some further hatching was also recorded. By mid-March there were still pockets of late instar hoppers around Tourassine, and hoppers at densities of 30 per sq. metre and adults at densities of 3-5 per sq. metre over an area of 5,000 hectares north-east of Bir Moghreïn, but over most of the area only isolated adults were present. By 20 March the situation was reported to be calm, but on 27 March scattered adults were reported from east of Rhallamane (2330N/0955W), in the Hank (23N/7W) and Iguidi (26N/6W) and swarms were reported from Oued El Mar (2516N/1048W) and Argoudeuil (2541N/1148W).

Dakhlet Nouadhibou

A maturing swarm at densities of up to 40 per sq. metre arrived in the Nouadhibou area from the north on 17 March. An immature swarm was seen in the same area on 18-19 March and another swarm 140 km to the north-east was reported on 23 March. On 26 March a swarm covering an area of 240 sq. km was reported at Aouietal (2114N/1655W). These swarms were observed moving south, south-east, and south-west. On 27 March, second to fifth instar hoppers mixed with copulating adults at a density of 40 per sq. metre covered an area of 3,000 hectares 30 km south-east of 2115N/1519W. Yellow and yellow-gray adults at a density of 5-10 per sq. metre covered an area of 1,000 ha on 28 March at Oum Agleina (1821N/1248E). Control operations were in progress over 3,000 ha. By 12

April, the situation was reported calm in the region.

Inchiri

By the end of March, swarms were reported at Akjoujt and Benichab. On 9 April, a swarm was seen over Khat El Temadi (1944N/1416W) flying south. On 11 April, a 42 sq. km swarm left Akjoujt heading south-east, and on the 12th, a swarm was seen 15 km east of Akjoujt.

Adrar

From 11-14 April, numerous mixed immature and mature swarms were seen between 2000-2130N and 1130-1400W. By 12 April, dense swarms were reported from Aoujeft, Ouadane, and Atar moving south. One swarm measuring 60 sq. km, was seen at Ain El ATaya (2025N/1315W) on 14 April moving south. Eggs were seen at El Medda (1955N/1319W). By 19 April only scattered groups were present.

Tagant

Swarms reported in many areas by 19 April and control was in progress.

Trarza

On 28 March, a mixed swarm measuring 100 m by 30 km was seen flying south 50 km north of Nouakchott, density 80 per sq. metre. On 3 April, a small swarm settled on Nouakchott. From 7-9 April, immature swarms were seen for 90 km between Oued Naga (1758N/1550W) and Boutilimit, moving south. On 11 April, a 1 sq. km swarm passed over Rosso (1640N/1550W) moving south-west. By 12 April, six dense swarms had been seen at Keur Mour (1631N/1549W), Lekselba (1455N/1227W) and on the coast near Rosso (1630N/1549W). Control operations were in progress and by 19 April, 525 ha had been treated, and the situation was reported to be calm.

Assaba

From 10-12 April, swarms were present between 1600-1700N and 1000-1300W. A very dense swarm was seen at Tagate Ghird (1652N/1122W). On the 11th, adults were reported from Barkeol (1645N/1225W) and on the 12th, swarms were seen in Kiffa and Tintane (1623N/1011W). By 19 April the situation was reported to be calm.

Brakna, Guidimaka, and Gorgol

During the first half of April, numerous immature and mature swarms were reported in Brakna at Magta Kahjar and in Guidimaka near Selibary (1510N/1210W). On the 5th, a swarm was seen over Kaedi (1609N/1330W) flying to the south east. Control operations were in progress.

Hodh Gharki and Hodh Charki

Swarms were reported between Nema and Oualata and along the axis Timbedra (1614N/0809W) in Djigueni (1544N/0840W). On 19 April swarms were reported 28,35 and 80 km north of Nema, and other swarms were reported at Kankossa and Bassikonou.

Up to 19 April a total of 284,304 hectares had been treated with

92,050 l Fenitrothion 50%, 17,180 l Fenitrothion 96% and 128 tonnes of dust. 14,408 ha were treated in March.

SENEGAL

On 23 March, swarms from the north reached St. Louis. From 26 March to 8 April, additional swarms were reported in the Senegal River Valley at Dagana, Podor, and Matam. Mixed swarms arrived in central Senegal on 9 April at Linguere (1524N/1507W) and at Doli (1443N/1520W) on the 10th. On the 11th, a swarm was seen at Diam-Diam (1351N/1440W), and on the 12th, one at Ndoffane (1355N/1540W), one at Kidira (1428N/1213W) on the Mali border, and 200-2000 ha were reported infested 55 km north of Tambacounda (1347N/1340W). By 14 April, the entire Senegal River Valley was infested with swarms from Ross-Bethi (1616N/1608W) to Bakel (1454N/1227W). Control operations were in progress.

MALI

Western region

On 10 April, a 45 sq. km swarm consisting of 70% immature and 30% mature adults at densities of up to 200 per sq. metre was seen 5 km west of Kayes (1424N/1128W). On the 11th, a swarm was seen 20 km west of Kayes, and on the 12th, three swarms were seen in the region at Dibokori (1440N/1159W) over 2000 ha at a density of 150-200 per sq. metre, at Faleme (1446N/1214W), and one at Yelimane (1517N/1037W) moving south-east. On 14 April a very dense 5 sq. km swarm was reported at Yelimane heading south. On 17 April a high flying swarm was reported between Hamdallaye (1456N/1056W); three others were reported at Kenieba (1342N/1144W) and Gogui (1501N/0920W) and at 1503N., 1136W., settled over 18 sq. km. On 19 April a high flying swarm was seen at Nioro, heading north-east. In north-central Mali a 10 sq. km swarm was reported 10 km west of Nara.

Adrar des Iforas

From 30 March, immature gregarious adults at densities of up to 20 per sq. metre were scattered over 500 ha in all the oueds from Tessalit (2012N/0100E) north to the Algerian border. Scattered adults were seen on 9 April at Tilemsi (1925N/0033E). On 12 April four swarms were seen in Oued Tirharhar (2004N/0120E-2006N/0134E) and Tadjedjoumet (2014N/0134E) moving south. These reached the vicinity of Gao on 15 April.

GAMBIA

Swarms were reported to have arrived on about 18 April.

CAPE VERDE

On 22 March, swarms arrived from the north-east on winds gusting up to 50 knots. All islands were reported infested. Control operations began on 26 March.

ATLANTIC OCEAN

As reported in Summary No. 114, groups of pink and yellow locusts were seen on 25-26 March by a ship between positions 2052N/1758W and

1235/1750W. A second ship reported isolated flying locusts between 2231N/1850W and 1846N/2030W on the same days. A third reported yellow locusts 800 km south-west of Cape Verde at 0828N/2700W on the 26th. On 28 March, five locusts came on board a ship at 2028N/1750W-2057N/1700W from 1415 to 1700 hours GMT, surface wind N 10 knots.

NORTH-WEST AFRICA

Meteorology

There was good rainfall during March in many areas. On 2 March, Essaouira received 15 mm and in Algeria, 28 mm fell at Bechar, 13 mm at Timimoun, and 11 mm at Adrar. Tamanrasset also received heavy rain in early March. Light rain fell in Tunis and Jendouba in mid-March. In Libya, Nalut 35 mm, Gariat El Sharqia 18 mm, Misuruta 13 mm and Tripoli 12 mm. By mid April, warm southerly winds had raised temperatures to 24° C in the Atlas and up to 36° C in the Algerian Sahara.

Breeding Conditions

Breeding conditions were extremely favorable to the south of the Atlas mountains in Morocco and Algeria. NOAA/AVHRR imagery confirmed the presence of localized vegetation in the Hamada al Hamra of Libya. Less favourable conditions prevailed in Tunisia.

Locusts

MOROCCO

Numerous swarms were present throughout March in south and south-eastern Morocco as new generation adults moved north and east. These consisted of swarms of up to 60 sq. km, which remained to the south of the Atlas mountains. The main areas infested were : Guelmim, Zagora, Tata, Laayoune, Dakhla, Errachidia and Bouarfa. On 30 March, a swarm was seen at Tafraout (2943N/0858W). By 30 March, a total of 725.523 ha had been treated since 1 January of which 480.289 ha were by aircraft and 154.585 ha were against hoppers, mainly in the Laayoune and Dakhla areas.

Further swarms were reported during the first and second decades of April. On the 3rd, a small dense swarm was treated north of Errachidia, and scattered high flying mature adults were seen from Boulmane (3122N/0559W) to Skoura (3105N/0633W). On the 4th, a moderate size high flying swarm and low flying fledglings were seen over Tazenakat (3035N/0712W), and scattered high flying adults were seen about 50 km from Tallouine (3117N/0731W). In early April swarms reached the Oujda area of north-east Morocco. By 12 April, 324,713 hectares had been infested with swarms concentrated between Zagora and Oujda, and also to the west between Ouarzazate and Fom Zguid.

In early April, numerous egg fields and new generation hoppers were present over a large area in Guelmim, Errachidia and Ouarzazate regions. 50,000 ha of egg fields were reported south and west of Ouarzazate. Young instar hoppers were seen over 1,000 ha between Taskala (2827N/1003W) and Torkoz (2830N/0950W), and 35 km south-west of Fom Zguid mixed with older generation fifth instar hoppers.

An intensive control campaign, treating about 30-35,000 ha per day in early April with a maximum of 60,000 ha on 5 April but declining to about 20,000 ha in late April, continued using 18 aircraft, 12 helicopters, over 300 vehicles, 1,000 sprayers and dusters, and 1,500 personnel. By the second half of April, most control was against the new generation hoppers. From 1 January to 25 April a total of 1,357,845 ha had been treated in Morocco and Western Sahara.

WESTERN SAHARA

In March and April, control operations continued against hoppers in the Laayoune areas.

ALGERIA

Swarms continued to arrive from the west in March, moving east-north-east to south of the Atlas mountains where some matured and laid by late March, in the area between Tindouf, Ain Sefra and Ouarga.

Tindouf

Three swarms were treated in the Tindouf area on 16 March. On 3 April, two swarms were seen at Tindouf moving northeast. Widespread hatching began south of Tindouf on 13 April.

North Central

Throughout March, swarms were present south of the Atlas between Bechar (3137N/0213W) and Biskra (3451N/0535E) and as far south as Ghardaia. By 9 April swarms were mainly concentrated near Ain Sefra (3245N/0035W), over 100,000 ha, and near Laghouat (3348/0253E) over 100-150,000 ha. Swarms reached within 100 km of the Mediterranean by the 9th at Bouira (3623N/0354E) and on the 11th at Sidi Bel Abbas (3512N/0038W). From 9-19 April, numerous immature and mature swarms were seen near Ain Sefra at Djebel Boudaoud (3311N/0005E), Mecheria (3333N/0017W), and flying east from Bousseghroum (3253N/0001E); Near Tlemcen (3452N/0119W), at El Aricha and Ras Elma; near Maret (3522/0119E), Medea (3613N/0245E), in Oued Touil and flying east from Medrissa (3443N/0115E); near Laghouat flying northeast from El Bayadh (3341N/0101E), Hassi R'Mel (3255N/0316E), Tadjrouna (3330N/0207E), and Oueled Djellal (3425N/0504E); and north of Biskra at Tadjnet (3607N/0559E) and El Euch (3603N/0438E). On 24-25 April, swarms were reported from the following districts: Bejaia (3645N/0505E), Ghrarem (3631N/0620E), Medea (3616N/0245E), Bouira, Batna (3534N/0611E). Further south, a small swarm was seen at Adrar moving north-east on 12 April and an unconfirmed swarm was seen in Ghardaia on the 18th.

The swarms reported during the period were initially immature but later mature and ranged in size up to 50 sq. km at densities of 20-100 per sq. metre. Damage to crops occurred with 43,200 ha destroyed in the Saida area (3450N/0009E), Ain Skhouna, and El-Maamoura.

Widespread hatching of new generation hoppers began at Bechar on 4 April, at Abadala (3101N/0244W) on the 13th, and at Djenane and Bousseghroum on the 14th, where egg-pod densities reached 1500 per sq. metre. At Bousseghroum there were second instar hoppers on 15 April. Further hatching was reported in the Tindouf, Bichar, Adrar, Laghouat, Djelfa and Bayadh areas on 24-26 April.

Illizi

Small populations were reported near Illizi (2630N/0830E) on 17 March. On 14 April, a swarm was seen copulating in Oued Add 70km south of Djanet on 15 ha at 350 per sq. metre.

From 27 February to 25 April, 1 116 006 ha had been treated throughout the country including 911 973 ha using 44 aircraft.

TUNISIA

Immature swarms began reaching southern Tunisia on 8 March from the west. On 14-15 March, swarms reached Gafsa and by the 18th they had reached the sea between Sfax and Gabes. On 21 March, swarms entered the country near Kasserine and by the next day had reached Le Kef, Kairouan and Sousse. By the end of the month, swarms had infested the central region (Siliana and Kairouan governorates), the coastal region (Sousse, Monastir and Mahdia governorates) and the southern region (Medinine and Tataouine governorates). On 30-31 March, a swarm was seen flying out to sea from Sousse.

No new swarm infestations from the west were reported in April. However, by 3 April, small medium-density swarms had reached the northern governorates of Jendouba, Beja, Bizerte, Le Kef and Ariana. The following day, swarms were reported further east in Zaghouan and Nabeul governorates. On 8 April, swarms were seen at Tebourba (3650N/0950E).

Control operations by 7 April had treated 139,980 ha including 105,592 ha using 17 aircraft. By the 13th, the situation was reported calm and no further control operations were undertaken.

LIBYA

On 7 March, scattered adults were reported 200 km east of the Algerian border in Libya. The following day, a swarm was seen at Darj (3010N/1027E) and small swarms were seen in the Hamada Al Hamrah on the 14th. A swarm reached Tripoli on 18 March and scattered locusts were found at Jebel Akhdar (3230N/2130E) on 19-20 March.

By 13 April, small swarms were at Mizda (3127N/1258E), Gariyat Al Shargiya (3025N/1335E), Beni Walid (3147N/1401E), and Shwayrif (2959N/1416E). Control operations were in progress in all affected areas.

Laying was reported in three areas on 26-29 March.

MEDITERRANEAN

As reported in Summary No. 114, locusts were seen 70 km off the Tunisian coast on 18 March between positions 3412N/1624E and 3338N/1651E. The surface wind was WNW 30 knots.

EUROPE

ITALY

Large numbers of dead immature locusts were washed ashore between Anzio and Ostia on 1 April.

EASTERN AFRICA

Meteorology

Light rain fell over Eritrea in early April. No significant rainfall was reported from Sudan. There was heavy rain over northern Somalia during April.

Breeding Conditions

Conditions were becoming less favourable on the Red Sea coast of Sudan.

Locusts

SUDAN

Small scale breeding and hatching from February continued into March in subcoastal areas of the northern Red Sea coast. As reported in Summary No. 114, scattered first to fourth instar hopper bands of low to medium density and scattered immature and mature adults were present during March over an area of 2,250 ha in Wadi Diib near Khor Mafdeib, Jebel Karaiaweb, Khor Adarem, and Jebel Hargineb. Additional low to medium densities of mixed hoppers were seen in the Sufiya (2139N/3606E) area on 27 March to 9 April.

Mixed hopper bands were reported further south in Wadi Oko at Gabatit (2029N/3550E) by the end of February and at Garamait (2022N/3551E) over 1200-1400 hectares on 8 March. By 15-25 March, hoppers in the fourth-fifth instar were present over 660 hectares at Garamait and Khor Shatt (2025N/3551E).

The southern Red Sea coast remained free of locusts during the period. Ground control operations were in progress in all infested areas in the north.

ETHIOPIA, DJIBOUTI and SOMALIA remained clear up to 6 April.

NEAR EAST

Meteorology

As a result of frequent Mediterranean and Sudan depressions, scattered rain fell in Saudi Arabia and coastal areas of Yemen in March. Meteostat imagery indicated that there was persistent cloud cover and additional rain over Saudi Arabia during the first half of April.

Breeding Conditions

Due to rainfall during the last three months, ecological conditions continued to be favorable in the Tihamas of Saudi Arabia and Yemen.

Locusts

KINGDOM OF SAUDI ARABIA

Isolated adults were reported from the Jizan, Qunfidah and Lith

Tihamas during March.

In early April, a few scattered solitary adults were seen north of Jizan and in the area, Lith and ten gregarious mature adults were captured in the Umm Lajj (2502N/3716E) area. On 18 April, a 20 sq. km mature swarm was seen at Tebuk (2823N/3635E) and was sprayed from the air the next day. On 22 April a small swarm was reported north of Sakaka, heading north-west. By the first week of April, over 2,500 small bands had been controlled over an area of about 100 sq. km.

EGYPT

During March, numerous small hopper bands were seen in the South-Eastern Desert. On 2 April, fourth and fifth instar hopper bands and an immature swarm were seen at Abu Ramad (2220N/3628E) near the Sudan border. A further swarm settled at Wadi Ekwan (2210N/3600E) on 9 April and a third swarm was seen flying west at Sheikh Shadli (2410/3001E) on 13 April. The swarms were reported to the 20-40 sq. km in area.

IRAQ was clear in February. YEMEN ARAB REPUBLIC, KUWAIT, OMAN and UNITED ARAB EMIRATES were reported clear in February and March.

SOUTH-WEST ASIA

Meteorology

Light to medium rain fell in the southern regions of Pakistan in early March. Quetta received 93 mm. In the north, rain fell throughout the month, primarily at Rawalpindi, Peshawar, and Lahore. On 11 March, Jhelum received 29 mm and Zhob received 51 mm on the 25th. Isolated rain fell in Rajasthan and Punjab during March.

Breeding Conditions

Ecological conditions continued to remain unfavorable for breeding.

Locusts

PAKISTAN and INDIA were clear in March.

FORECAST FOR MAY-JUNE 1988

The forecast period is traditionally one of long range movements by swarms as they leave the spring breeding areas and migrate to summer breeding areas. Breeding in North-West Africa will be widespread initially but should decline by the end of May. Breeding in West Africa is likely to commence in May and further swarms will probably arrive from the north during June. Breeding may commence in northern Arabia and may start in South-West Arabia and northern Somalia, Pakistan and India will remain clear. It is possible that some swarms could reach Italy and Spain in the middle of the forecast period.

In North-West Africa widespread breeding will continue in Morocco and north-west Algeria during May but should decline in scale due to control operations. If these are not very effective new generation adults will start to appear from mid-May and some swarms may start to form in late May-early June. These will probably move south across the Sahara but if there are southerly winds when the swarms are forming, the swarms will move north and may reach Spain and Italy. The extent of breeding in south-eastern Algeria is not known but it could be quite widespread and give rise to swarms in June.

In West Africa the swarms which reached southern Mauritania, Senegal, Gambia and western Mali are likely to continue to move south until they reach the vicinity of the Intertropical Convergence Zone and areas where it has rained. Although not previously recorded, breeding could commence in the Sudan-Guinea savannah zone during May extending from Guinea to as far east as Nigeria, as significant rains have fallen up to 12° N. The swarms in eastern Mali will move further south and may also reach the Sudan-Guinea savannah zone, and also start to breed.

A further invasion of swarms from the north is likely in June but its scale cannot as yet be predicted.

In Eastern Africa breeding will terminate in north-eastern Sudan. Some adults will move directly with the interior of Sudan during May but it is possible that swarms reach the interior from Arabia in mid to late June. Initially low density breeding will occur in north Somalia if adults are present.

In the Near East breeding will commence in north-west Saudi Arabia, Jordan and Iraq if the swarms which reached the area in late April are not effectively controlled, and if hopper control is not effective, some small swarms could be produced towards the end of the forecast period. These will most probably move south-west over south-east Egypt and across the Red Sea. No invasion of the area from North-West Africa is likely.

In South-West Area, the situation will remain calm.

Rome, 29 April 1988

Desert Locust Situation Summary No. 115 MARCH-EARLY APRIL / MARS-DEBUT D'AVRIL 1988

