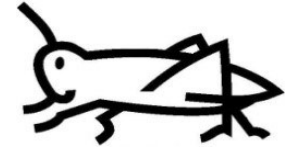




LOCUST BULLETIN No. 98



FAO - Plant Production and Protection Division (NSP)
FAO - Locusts and Transboundary Plant Pests and Diseases Team (NSPMD)

26 August 2024

Situation level: **THREAT** in Russian Federation (CIT and LMI)

Situation level: **CAUTION** in Russian Federation (DMA), Georgia (DMA and CIT), Kyrgyzstan (CIT) and Kazakhstan (CIT and LMI)

Situation level: **CALM** elsewhere and for the other locust pests

General situation during July 2024

Forecast for August 2024

Moroccan Locust (DMA) natural cycle completed in Azerbaijan and in all Central Asian (CA) countries while mating and egg-laying continued in Georgia and the Russian Federation. Italian Locust (CIT) started fledging and mating in Caucasus and Central Asia (CCA). Asian Migratory Locust (LMI) fledging and mating started in most parts of Kazakhstan and Russian Federation, while its hopper development continued in Kostanay region of Kazakhstan. The situation with DMA was considered *caution* in the North Caucasus Federal District of the Russian Federation and in Georgia. Similar *caution* was considered for CIT in Georgia and Kyrgyzstan, as well as for CIT and LMI in Kazakhstan. A *threat* situation was mentioned in the Russian Federation as the movements of swarms of these two species, which started in some parts, could further threaten the crops. The situation became *calm* for other species and elsewhere. Countries continued summer surveys of adults and egg-laying sites. Overall, 1 117 352 hectares (ha) were treated in July, for a total of 4 087 435 ha since the start of campaign in CCA, which is 58% higher than in 2023 at the same period (2 590 326 ha). In the forecasted period, DMA life cycle will be completed in all areas, as well as for CIT in Caucasus and in the southern part of CA. CIT and LMI mating and egg-laying will continue in Kazakhstan and the Russian Federation.

Caucasus. DMA life cycle ended in **Azerbaijan**, mating and egg-laying was in progress in **Georgia**. In Georgia the situation with CIT required attention due to mass fledging. It was *calm* in **Armenia**. Similarly to 2023, no LMI was observed this year in Azerbaijan. In the **Russian Federation**, situation was qualified as *caution* for DMA and as *threat* for CIT and LMI. Mass fledging of the two latter species started by the end of month in several districts and will continue in August; movement of migrating swarms may threaten crops. Control operations in Caucasus and the Russian Federation were conducted on an area of 50 440 ha in July, reaching 167 775 ha from the start of the campaign, which is 22% lower than 2023 at the same period (217 411 ha). There were no locust treatments conducted this year in Armenia, and other Caucasus countries and the Russian Federation reported a decrease of treated areas compared to previous year. In August, DMA will complete its lifecycle in all remained areas, CIT breeding will continue in the Caucasus countries as well as both CIT and LMI egg-laying in the Russian Federation.

Central Asia. DMA natural cycle came to an end in all countries. CIT hopper development continued and its fledging and mating started in **Kazakhstan** and **Kyrgyzstan**. In **Uzbekistan**, CIT and LMI mating and egg-laying continued in Karakalpakstan. Control operations were completed in **Afghanistan**, **Tajikistan**, **Turkmenistan** and **Uzbekistan**. Treatments against locusts and grasshoppers covered 1 066 912 ha in July, reaching a total of 3 919 660 ha since the start of campaign, which is 65%

higher than in 2023 at the same period (2 372 915 ha). The most significant increase occurred in Kyrgyzstan (95%) and Kazakhstan (92%), while there was slight increase in Tajikistan (6%) and Uzbekistan (2%); in Turkmenistan and Afghanistan, the treated area decreased by 10 and 4% respectively. For the forecast period, CIT mating and egg-laying will continue in Kazakhstan and Kyrgyzstan, as well as LMI egg-laying in Kazakhstan. Life cycle of LMI will come to an end in Uzbekistan.

Weather and Ecological Conditions in July 2024

In **Caucasus**, the average temperature was generally lower than the norm in Armenia and Georgia, while it was close to the norm in Azerbaijan; precipitations were higher than the norm in all three countries. In the **Russian Federation**, the weather was generally close to the norm, except in Siberia and Ural where the precipitations were higher than the norm.

In Armenia, the temperature in July was lower than the annual norm. During the first half of the month and at daytime it was 25-29°C in the mountainous areas and 35-37°C in the valleys; during the last decade, it decreased to 24-27°C in the mountainous areas, and to 34-36°C in the valleys. The precipitations in general were higher than the multiannual average. Harvesting of winter cereals started in the mountainous areas.

In Azerbaijan, the temperature was generally close to the annual norm, but the precipitations were higher than the norm, including in Kudri and Djeyranchel steppes, the main locust breeding areas. Natural vegetation dried out in the steppes and harvesting of winter cereals was close to its end.

In Georgia, higher than the norm precipitations occurred at the beginning of the month resulting in the decrease of the average temperature, which was unusual. These conditions slowed down the survey and control activities. The natural vegetation was still green and the scattered locust hopper bands remained in the natural habitats. Starting from the last decade of July the temperature started to rise again and reached 37°C at daytime, which allowed faster development of locusts.

In the Russian Federation, the weather conditions in all Federal Districts (FD) were mainly close to the annual norm and suitable for locust development, except in the Siberian and Ural FDs, where higher than the norm precipitations slowed down locust development. In the Central FD, the average temperature was 24-29°C, reaching 33°C at maximum. Low rainfall was observed during the first half of



the month and some heavy rainfall during the second half. In the South FD, the temperature at daytime was 34-37°C, reaching 40°C maximum. Precipitations were lower than the average. In North Caucasus FD, the temperature at daytime was 29-32°C, with a maximum of 36°C, and precipitations were lower than the norm. In Volga FD, the average daily temperature varied from 22 to 27°C with a maximum of 33°C. The rainfall was lower than the norm. In the Ural FD, the daily temperature averaged 21-28°C, reaching 34°C during some hot days. Higher than the norm rainfall was observed in this FD. In the Siberian FD, the average daily temperature was 24-27°C, with a maximum of 31°C. Precipitations were higher than the norm. In the Far East FD, the temperature at daytime ranged from 24 to 31°C with a maximum of 36°C. Rainfall in this period was lower than the norm.

In **Central Asia**, the weather conditions were generally close to the norm in all countries, but the temperature was lower in Tajikistan and in mountainous parts of Uzbekistan. Higher than the norm rainfall was observed in Tajikistan and some parts of Kazakhstan.

In Afghanistan, the temperature, reached more than 38°C at daytime, and precipitations were close to the norm in most of the locust breeding areas.

In Kazakhstan, the temperature was close to the norm while higher precipitations were registered in most regions. In the South, the daily temperature ranged from 14.7 to 36.5°C with a maximum of 41°C and a minimum of 12.8°C. Monthly precipitations varied from 6 mm (in Kyzyl-Orda) to 82 mm (Almaty). In the East, the average daily temperature was 20.5°C with a maximum of 35.9°C and a minimum of 11.4°C. Precipitations in this period were generally higher than the norm and ranged from 85 mm (Abay) to 121 mm (East Kazakhstan). In the West, the average daily temperature ranged from 14.9°C to 38.5°C, with a maximum of 42.2°C and a minimum of 10.3°C. Rainfall ranged from 7 mm (Mangystau and Atyrau) to 43 mm (Aktobe). In the North, the daily temperature ranged from 13.5°C to 30°C, with a maximum of 37.1°C and a minimum of 10.7°C. Precipitations varied from 16 mm (Ulytau) to 94 mm (Pavlodar).

In Kyrgyzstan, the average monthly temperature was close to the norm but at the beginning of the month a heavy rainfall resulted in floods in the south. In Chuy region, the average daily temperature was 23-25°C, ranging from 24 to 39°C at

daytime and from 11 to 29°C at night. Precipitations were close to the norm, 20-23 mm in the valleys and 55-57 mm in the mountainous areas. Natural vegetation was of medium density and started to dry out.

In Tajikistan, the temperature was lower than the norm while the precipitations were higher than the norm, especially during the first half of July. The average monthly temperature was 21-25°C, ranging from 9-24°C at nights to 19-41°C at daytime. Heavy rains at the beginning of the month resulted in floods in several mountainous districts of the country.

In Turkmenistan, the weather conditions were close to the norm, with sunny and hot days most of the time and rain during only three days. The daily temperature ranged from 30 to 42°C.

In Uzbekistan, the temperature was generally close to the norm, while the precipitations were higher than the norm, especially in mountainous areas. In the Autonomous Republic of Karakalpakstan, Khorezm and northern part of Navoi regions the average temperature was 26-33°C. During the days it reached 35-40°C in desert areas, dropping to 17-22°C at nights. In Tashkent, Syrdarya, Jizzakh, Samarkand, Bukhara and southern part of Navoi regions, the average temperature was 27-31°C and up to 34-39°C at daytime. Average temperature in Kashkadarya and Surkhandarya regions during the days reached 38-41°C and 18-22°C at nights. In Fergana valley, the average monthly temperature was 27-29°C, varying from 16-21 °C at night to 34-39°C during daytime.

Area treated in July 2024

Information on chemically treated areas since the start of the 2024 campaign is provided in brackets.

Afghanistan	0 (40 870) ha
Armenia	0 (0) ha
Azerbaijan	900 (5170) ha
Georgia	10 040 (21 925) ha
Kazakhstan	1 019 615 (3 102 127) ha
Kyrgyzstan	22 176 (94 410) ha
Russian Federation	39 500 (140 680) ha
Tajikistan	0 (137 175) ha
Turkmenistan	2827 (40 532) ha
Uzbekistan	22 294 (504 546) ha
Total	1 117 352 (4 087 435) ha



Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

- SITUATION**

During the surveys, which covered more than 60 000 ha in June and July, no CIT was observed. Only grasshoppers with densities below the economic threshold (1 to 4 individuals/m²) were reported in some areas. This is the second year in a row that no CIT is observed and thus no treatment conducted in Armenia.

- FORECAST**

Non-swarming grasshoppers will continue their lifecycle, and it is expected that mating and egg-laying will start in August.

Azerbaijan

- SITUATION**

DMA and CIT lifecycle came to an end in most areas at the end of the reporting period. No LMI was observed in 2024, as it was the case in 2023. Chemical treatments in July covered 900 ha against CIT only. Overall treated area since the start of the campaign reached 5170 ha, which is 36% lower compared to the same period in 2023 (8151.5 ha). Chemical treatments were carried out by applying insecticides with active ingredients (a.i.) alpha-cypermethrin (ultra-low volume - ULV), cypermethrin (Emulsifiable Concentrate - EC) and bifenthrin (EC) with sprayers mounted on vehicles (for ULV) and on tractors (for EC).

- FORECAST**

DMA and CIT lifecycle will come to an end in all areas and natural die off will occur in August.

Georgia

- SITUATION**

Locust survey was conducted on 115 280 ha in July and on 203 670 since the beginning of 2024. CIT started egg laying at the end of the reporting period. Treatments covered an area of 10 040 ha in July, and 21 925 ha since the start of the

campaign, which is 45% lower than in 2023 (40 480 ha). Decline of infested and treated areas over the past two years happened mainly due to unfavourable weather conditions during hopper development as well as intensive control in the previous years. Chemical control was carried out using 12 vehicle-mounted sprayers, such as Micron AU8115 (ULV) and Elite 21S-300 (LV), using insecticides with a.i. teflubenzuron ULV and a.i. lambda-cyhalothrin, both in ULV and EC formulations.

- **FORECAST**

CIT mating and mass egg-laying will be completed and die-off will start by the end of August. Treatments will continue till mid of the month.

Russian Federation

- **SITUATION**

Locust surveys were conducted on 633 540 ha, out of which 94 730 ha were found infested. More specifically, DMA survey was conducted on 18 360 ha, out of which 4340 ha found infested, mainly in the North Caucasus FD (4320 ha). CIT survey covered 403 040 ha, out of which 79 120 ha were infested, including 41 490 ha by adults. Main infested areas were in Volga (35 610 ha, including 12 530 ha by adults) and South FDs (26 170 ha, including 21 260 ha by adults). LMI survey was conducted on 212 140 ha, out of which 11 270 ha were found infested in the South, North Caucasus and Siberia FDs, including 7290 ha by adults. In addition, 869 750 ha were surveyed for various grasshoppers, out of which 365 660 ha were found infested, both with hoppers and adults. As per preliminary information received, treatments were conducted on 39 500 ha in July and 140 680 ha since the start of campaign, which is 16% lower than at the same period in 2023 (168 780 ha).

- **FORECAST**

DMA die off will occur in August. CIT and LMI mass fledging and movement of swarms are expected on wider areas, threatening the crops; the situation will require close attention and control will continue. Mating and egg-laying of these two species will take place towards the end of the month.

CENTRAL ASIA

Afghanistan

- **SITUATION**

DMA natural life cycle was completed in all areas. Summer survey of egg-laying sites covered more than 3000 ha so far,



in the following provinces: Kunduz, Takhar, Baghlan, Samangan, Badakhshan, Faryab, Sari Pul, Balkh, Herat, Badghis and Ghor.

- **FORECAST**

DMA eggs will remain in the soil until next spring. The survey of egg-laying sites will continue and be completed in early August.

Kazakhstan

- **SITUATION**

Locust summer survey was carried out in all regions. DMA adult survey during mating and egg-laying was completed in July covering a total area of 1 155 940 ha since the start of the campaign, out of which 550 829 ha were infested. An average density of up to 1 individual/m² was recorded on 35 376 ha, up to 5 individuals/m² on 125 249 ha, from 5 to 10 individuals/m² on 233 314 ha and more than 10 individuals/m² on 156 890 ha. CIT hopper survey covered an area of 12 985 157 ha in 2024, out of which 4 022 648 ha were found infested, with a density of up to 3 individuals/m² on 1 465 656 ha and from 3 to 10 individuals/m² on 919 831 ha. CIT adult survey during mating and egg-laying covered an area of 2 956 400 ha, out of which 881 673 ha were infested, including up to 5 individuals/m² on 457 451 ha and more than 10 individuals/m² on 454 177 ha. LMI hopper survey was conducted on 2 946 400 ha, out of it 277 718 ha were infested. Survey of adults covered 246 800 ha, with 15 547 ha found infested. Control operations were carried out on 1 019 615 ha against CIT and LMI in July. They have reached 3 102 127 ha since the start of the campaign, which is almost twice as high as at the same period in 2023 (1 612 045 ha). This increase is mainly due to higher DMA and CIT infestations in 2024. Indeed, 399 350 ha were treated against DMA (78 797 ha in 2023, i.e. +506%), 2 556 991 ha against CIT (1 334 251 ha in 2023, i.e. +48%) and 145 785 ha against LMI (198 997 ha in 2023, i.e. -36%).

- **FORECAST**

DMA eggs will remain in the soil till next spring. CIT mating and egg-laying will continue in August. LMI hopper development will continue in Kostanay region, while mating and egg-laying will start in other areas. The treatments of LMI will continue during the first decade of August.

Kyrgyzstan

• SITUATION

DMA egg-laying started in July, followed by natural die-off. CIT survey in July covered an area of 29 423 ha, out of which 26 507 ha were found infested, with an average density of 6-35 individuals/m² in Naryn (16 510 ha) and in Chuy (9997 ha). CIT populations in Chuy region were in their 5th instars and fledging started, while in Naryn they were mainly in 3rd and 4th instars at the end of the reporting period. In Suusamyr valley, where the largest pasture of the Chuy region is situated, mass infestation of CIT was observed in July, threatening both pasture lands and the crops nearby. A similar situation had been recorded in 2009. Control operations were carried out on 22 176 ha in July, including 14 610 ha in Naryn and 7566 ha in Chuy. The total area of treatments reached 94 410 ha since the start of campaign, which is almost twice as high as in 2023 (48 280 ha). Treatments were carried out using six ULV vehicle-mounted sprayers AU8115M, with pesticides with a.i. alpha-cypermethrin EC, a.i. chlorpyrifos ULV and a.i. deltamethrin ULV. In addition, 180 ha of CIT infested area in At-Bashi district of Naryn region were successfully treated using biopesticides *Metarhizium acridum* on 4 July.

• FORECAST

DMA natural die-off will come to an end. CIT fledging followed by mating and egg-laying will continue. Control operations are planned to take place in Naryn region in early August against CIT.

Tajikistan

• SITUATION

DMA and CIT natural lifecycle completed in all areas. In 2024, a total area of 189 465 ha has been surveyed, out of which 130 078 ha were found infested. Control operations were completed in all areas by the 1st of July, covering 137 175 ha in total (*final corrected*) since the beginning of the campaign, which is 6% higher than in 2023 (129 021 ha). Treatments were carried out on 126 940 ha against DMA, on 6035 ha against CIT, and on 4200 ha against non-swarming grasshoppers. Control operations were carried out using EC sprayers, TOS-600 and 2000, Agromaster, and ULV sprayers Micron AU8115 and Micron AU8000. Chemical pesticides with a.i. lambda-cyhalothrin, alpha-cypermethrin and chlorpyrifos+cypermethrin were used. In addition, and for the first time, 195 ha were operationally treated using biopesticides *Metarhizium acridum*.



• FORECAST

DMA and CIT completed their life cycles and eggs will remain in the soil till the next season. Analyses and reporting of summer surveys will take place in August.

Turkmenistan

• SITUATION

Locust surveys continued in four regions, Akhal, Balkan, Dashoghuz and Lebap, covering 10 944 ha in July and 106 886 ha since the start of campaign. Chemical treatments were carried out on 2827 ha during the month and were completed. The total treated areas since the start of the campaign reached 40 532 ha, which is 10% lower compared to last year (44 952 ha). Treatments were carried out on 21 825 ha against DMA, on 15 782 ha against saxaul grasshopper (*Dericorys albidula*) and on 2925 ha against other grasshoppers. EC insecticides with a.i. alpha-cypermethrin and lambda-cyhalothrin, and Suspension Concentrate (SC) with a.i. imidacloprid + alpha-cypermethrin were applied using ULV vehicle-mounted sprayers Micron AU8115, as well as EC sprayer "Wind 634 Flexigun" operated by the tractor Class 340 Axoss.

• FORECAST

Locust eggs will remain in the soil till next spring. Survey of egg-laying sites will be completed in August.

Uzbekistan

• SITUATION

DMA natural cycle came to an end in all areas. CIT and LMI mating and egg-laying continued in Karakalpakstan. Control operations were conducted on 22 294 ha in July, reaching 504 546 ha since the start of the campaign, which is similar (2% higher) than at the same period in 2023 (495 891 ha). Most of the treatments were against DMA (305 701 ha), followed by CIT (88 196 ha), saxaul grasshopper (74 432 ha) and other grasshoppers (36 217 ha). No treatment was carried out against LMI in 2024, similarly to 2023. EC Insecticides with a.i. lambda-cyhalothrin, lambda-cyhalothrin + imidacloprid, alpha-cypermethrin and imidacloprid were used during the 2024 campaign. In addition, 1600 ha were treated with *Metarhizium acridum* during the campaign, against saxaul grasshoppers mainly (1400 ha) and, in July,

against CIT in Bozatau district, Karakalpakstan (200 ha).

- **FORECAST**

DMA eggs will remain in the soil till next spring. CIT and LMI life cycles will come to an end in Karakalpakstan.

Announcements

Locust warning levels. A color-coded scheme indicates the seriousness of the current situation for each of the three main locust pests: green for calm, yellow for caution, orange for threat and red for danger. The scheme is applied to the Locust Watch web page dedicated to the current locust situation ("Locust situation now!") and to the regional monthly bulletin header. The levels indicate the perceived risk or threat of current locust infestations to crops and appropriate actions are suggested for each level.

Locust reporting. During calm (green) periods, countries should report at least once/month and send standardized information using the national monthly bulletin template. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks and upsurges, updates should be sent at least once/week. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to CCA-Bulletins@fao.org. Monthly information received by the 5th of each month will be included in the CCA Locust Bulletin to be issued by mid-month; otherwise, it will not appear until the next bulletin. Reports should be sent even if no locusts were found or if no surveys were conducted.

Events and activities in July 2024

- **Technical Workshop on Locusts in CCA, 11-15 November 2024, Ashgabat, Turkmenistan:** invitations dispatched
- **National trainings session in Armenia** held in Jermuk on 3-5 July to the benefit of 17 participants from regions.
- **Publications:**
 - **Monograph on the Moroccan Locust:** handed over to the Russian Federation.
 - **Leaflets and posters**, i.e. leaflet and poster on biopesticides use, posters on safety measures associated with locust control: handed over to the Russian Federation.



- **E-Committee on Caucasus and Central Asia Locust Management System (CCALM)** held on 25 July with all CCA countries.
- **National Contingency Plan Workshop in Tajikistan** held in Dushanbe on 16-18 July with the participation of more than 35 stakeholders.
- **Demonstration/Trial on the use of biopesticides in locust control:**
 - **Georgia:** treatments continued against CIT during the first half of July in Kvemo Kartli.
 - **Kyrgyzstan:** treatments carried out against CIT in early July At-bashi district of Naryn region.
 - **Uzbekistan:** treatments carried out in mid-July against Large Saxaul Humpback Grasshopper in Karakalpakstan.
- **Human Health and Environmental Monitoring Teams:**
 - **Georgia:** second mission (out of three) carried out on 26 June-12 July in Kakheti, Mtskheta-Mtianeti and Kvemo-Kartli.
 - **Tajikistan:** last mission (as part of the third set) carried out on 1-5 July in Sughd.
- **Locust - Pesticide Management System (PMS) in Georgia:** second mission (out of three) carried out on 26 July-2 August in Mtskheta-Mtianeti, Kvemo Kartli, and Kakheti.
- **Procurement (GCP/GLO/917/USA; GCP/INT/384/JCA):**
 - **Procurement** in progress, at various stages (above-mentioned projects and OSRO/AFG/132/NOR): pesticides for Afghanistan; PPE for Armenia and Azerbaijan; camping equipment for Armenia; tablets for Kazakhstan; pick-up vehicles for Azerbaijan, Kyrgyzstan and Turkmenistan.
- **Questionnaire on Programme implementation and the way forward:** sent to all participating countries for filling.

Forthcoming events and activities in August 2024:

- **Technical Workshop on Locusts in CCA, 11-15 November 2024, Ashgabat, Turkmenistan:** replies expected by 10 September 2024.
- **Publications:**
 - **Monograph on the Moroccan Locust:** will be delivered to Kazakhstan.
- **Human Health and Environmental Monitoring Teams:**
 - **Georgia:** third and last mission scheduled on 29 July-9 August in Kakheti, Mtskheta-Mtianeti and Kvemo-Kartli.
 - **Uzbekistan:** third and last mission scheduled on 19-20 August in Navoi, 21-22 August in Kharezm and 23-25 August in Karakalpakstan.
- **Locust - Pesticide Management System (PMS) in Georgia:** third and last mission scheduled on 23-30 August in Mtskheta-Mtianeti, Kvemo Kartli, and Kakheti.
- **Procurement** ongoing, with expected delivery of pick-up vehicle for Kyrgyzstan.
- **Maintenance plan of delivered equipment:** requested to Central Asian countries.
- **Questionnaire on Programme implementation and the way forward:** replies expected by 30 August 2024.

