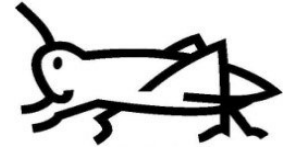




LOCUST BULLETIN No. 92



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

20 September 2023

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

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

General situation during August 2023 Forecast for September 2023

While the locust campaign is approaching the end, the situation was still classified as *caution* for Moroccan (DMA), Italian (CIT) and Asian Migratory Locusts (LMI) in the Russian Federation, for LMI in Kazakhstan and CIT in Kyrgyzstan. It was *calm* in other countries and for other species. Control operations covered an area of 89 536 hectares (ha) in Caucasus and Central Asia (CCA) in August. Overall, 2.68 million ha were treated during 2023 campaign. This represents an increase of 38% with respect to 2022 (1.94 million ha treated), which concerns Central Asia, but not Caucasus and the Russian Federation. Overall, the treated areas in CCA in 2023 remain lower than the average annual figures for the past 15 years (average 3.7 million ha). During the forecast period, CIT and LMI natural life cycles will come to an end.

Caucasus. DMA lifecycle completed in the region, CIT and LMI finished mating and egg-laying. Situation was calm for **Armenia, Azerbaijan** and **Georgia** but required *attention* for all three species in the **Russian Federation**. Control operations were completed in August in Azerbaijan, Georgia and in the Russian Federation, covering 70 928.5 ha. During the 2023 campaign, 288 340 ha were treated in Caucasus and the Russian Federation, which is 13% lower than in 2022 (324 985 ha). No control operations took place in Armenia in 2023.

Central Asia. LMI and CIT mating and egg-laying continued in **Kazakhstan** and **Kyrgyzstan** where natural life cycle was close to an end. Locust control operations have finished in June in **Afghanistan** (89% higher than in 2022) and **Tajikistan** (+10%), in July in **Turkmenistan** (+16%) and **Uzbekistan** (+22%) and were completed in August in **Kazakhstan** (+66%) and **Kyrgyzstan** (+22%). Hence, 18 608 ha were treated in August in two latter countries. In total, control operations in Central Asia (CA) against locusts and grasshoppers covered 2 391 523 ha during the 2023 campaign, which is 48% higher than in 2022 (1 611 314 ha).

Weather and Ecological Conditions in August 2023

In **Caucasus**, the weather was hot, with temperatures higher than the norm in some areas, while the precipitation in general was lower than the norm in the region. Natural vegetation dried out.

In **Armenia**, the temperature during the first and second decades of the month was higher than the norm, reaching 42°C in the day-time in the valleys and 34°C in foothill areas. Starting from the middle of the third decade, the weather was close to annual norm and temperature at daytime was 32-35 °C in the valleys and 28-30°C in the foothills. Lower than the norm precipitation was observed. Harvesting of fruits and grapes, as well as potatoes, started.

In **Azerbaijan**, the weather conditions were close to the norm. The temperature in Djeyranchel was 28-31°C at

daytime and 25-27°C at nights, reaching 40°C in some days. The precipitation was lower than the norm.

In Georgia, the weather was hot and dry, with temperature higher than the norm and precipitation lower than the norm. The average monthly temperature ranged from 22°C up to 43°C in some hot days.

In the Russian Federation, the temperature was close to the climatic norm in most of the Federal Districts (FD), but lower than the norm precipitation was observed in some areas. The weather was favourable for the development of locusts in all areas, except Siberian FD, where it was cooler than the norm. In the Central FD, the average temperature varied from 17 to 21°C, raising up to 28° C, and precipitation averaged 48 mm. In the South FD, the average temperature was 26-29°C, reaching 37°C during some hot days. The precipitation averaged only 2 mm. In North Caucasus FD, the weather was warm and average monthly temperature was 24-27°C, with a maximum of 34.2° C, and precipitation averaging 8 mm. In Volga FD, the average daily temperature was 20-25° C with a maximum of 33°C and precipitation of 9 mm. In the Ural FD, the average daily temperature was 20-25°C, reaching 31°C in hot days, and average precipitation was 25 mm. In the Siberian FD, the monthly temperature varied from 15 to 20°C, with a maximum of 24°C and precipitation averaging 35 mm. In the Far East FD, average temperature was 18-22°C, with a maximum reaching 28°C in some days; the average precipitation was 25 mm.

In **Central Asia**, the weather conditions were generally close to the annual norm with prevailing hot and dry days. However, in some parts of the region, high rainfall was recorded, especially during the last decade.

In Afghanistan, the temperature and precipitation were close to the norm. Generally, it was hot and dry with temperatures from 35 to 42°C during the day time.

In Kazakhstan, the weather conditions varied among the geographic areas but generally they were close to the norm and higher than the norm rainfall was observed in Kostanay. In the South, the average temperature ranged from 16 to 32° C with a maximum of 39°C and a minimum of 9.7°C. Precipitation varied from 10 mm (Shymkent) to 65 mm (Almaty). In the East, the average daily temperature was 20.3°C, with a maximum of 33°C and a minimum of 10°C. Precipitation was 39 mm in Abay and 53.3 mm in East Kazakhstan oblast. In the West, the temperature varied from 13°C to 34.5°C, with a maximum of 42°C and a minimum of 9°C. Precipitation varied from 2.6 mm (Aktobe) to 34 mm (Mangistau). In the North, the average daily temperature ranged from 12.2°C to 25.9°C, with a maximum of 33.8°C and



a minimum 5.3°C. Higher than the norm precipitation was recorded in Kostanay (104 mm), while in other parts it averaged 34 mm.

In Kyrgyzstan, the temperature and precipitation were in general close to the climatic norm. In Naryn region, the average monthly temperature was 16-18°C, ranging from 15 to 30°C at daytime and from 2 to 15°C at night. The precipitation ranged from 13 to 28 mm. Natural vegetation in the locust infested areas was of medium density and 4 to 7 cm high.

In Tajikistan, the monthly temperature was close to norm, varying from 21 to 35°C on average. However, higher than the norm precipitation was recorded during the second half of August, especially on 27 and 28 August; such high rainfall resulted in temperature drop and high floods in the foothills causing fatalities among local population.

In Turkmenistan, the weather was changeable, it was hot and dry at the beginning of the month with temperature reaching 35-41°C. However, daytime temperature dropped down to 29° C by the end of the month, when heavy rainfall occurred on 26 August.

In Uzbekistan, the weather was hot and dry, with temperature close to the norm and precipitation higher than the norm. The average temperature in the Autonomous Republic of Karakalpakstan, Khorezm and northern part of Navoi regions was 33-38°C at daytime while it ranged from 17 to 22°C at night; the temperature started to drop down by the end of the month. In Tashkent, Syrdarya, Jizzakh, Samarkand, Bukhara and southern part of Navoi regions, temperature varied from 35 to 40°C at daytime and from 17°C to 22°C at night. Temperature in Kashkadarya and Surkhandarya regions varied from 36 to 41°C at daytime and from 20 to 25°C at night during the first and second decade, but dropped down in average for 3-5°C during the third decade of the month. In the Fergana valley, temperature varied from 33 to 38°C at daytime and from 17 to 22°C at night.

Area treated in August 2023

Information on areas chemically treated since the start of the 2023 campaign is provided in brackets.

Afghanistan	0 (42 726) ha
Armenia	0 (0) ha
Azerbaijan	2468.5 (10 620) ha
Georgia	43 380 (83 860) ha
Kazakhstan	3878 (1 615 923) ha
Kyrgyzstan	14 730 (63 010) ha
Russian Federation	25 080 (193 860) ha
Tajikistan	0 (129 021) ha
Turkmenistan	0 (44 952) ha
Uzbekistan	0 (495 891) ha
Total	89 536.5 (2 679 863) ha

Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

- **SITUATION**

No CIT was observed in 2023; grasshoppers started mating and egg-laying in August. No control operations were conducted in 2023.

- **FORECAST**

Egg-laying of grasshoppers will be completed.

Azerbaijan

- **SITUATION**

DMA and CIT natural lifecycle came to an end and control operations were completed in August. They were carried out on 2468.5 ha in August and, in total, on 10 620 ha during the 2023 campaign, which is 64% lower than in 2022 (29 195 ha). This included 3643 ha against DMA and 6977 ha against CIT in 2023. No LMI was observed.

- **FORECAST**

DMA and CIT eggs will remain in the soil until hatching next spring. Autumn surveys of locust egg-pods, including in historical breeding areas of LMI, will start from September.

Georgia

- **SITUATION**

CIT egg-laying started in August and was close to its end by the end of month. In total, 246 300 ha have been surveyed



since the start of the campaign. Control operations were completed by the end of month, with 43 380 ha treated in August. Overall, 83 860 ha were controlled during the 2023 campaign, which is 16% lower than in 2022 (99 700 ha). Treatments were carried out using 20 sprayers, including 11 units of Ultra-low volume (ULV) and 9 low volume (LV), with insecticides having active ingredients (a.i.) lambda-cyhalothrin and diflubenzuron.

- **FORECAST**

CIT egg-laying will be completed and die off will start. The eggs will remain in the soil till next spring.

Russian Federation

- **SITUATION**

The situation with DMA, CIT and LMI was classified as “caution”, since the risk of adult locusts invading the crops was high. DMA natural life cycle came to an end while CIT and LMI egg-laying started in most areas. Surveys of locusts and grasshoppers were conducted on 977 280 ha in August, out of which 204 940 ha were found infested, including 174 780 ha by adults and 30 160 ha by hoppers. Control operations against locusts and grasshoppers were carried out on 25 080 ha in August. During the 2023 campaign, a total of 193 860 ha were controlled, which is almost equal to the total treated area in 2022 (193 760 ha). Control operations were carried out using mainly the insecticide with a.i. imidacloprid and other neonicotinoids and pyrethroids.

- **FORECAST**

CIT and LMI egg-laying will be completed in all areas and natural die-off will start.

CENTRAL ASIA

Afghanistan

- **SITUATION**

DMA annual cycle ended in mid-summer in all areas. The total treated area has remained unchanged since the end of June, with a total of 42 726 ha chemically controlled during the 2023 campaign, which is 89% higher compared to 2022 (22 595 ha). Locust egg-pod survey was conducted in August in 11 north and north-east provinces, with the support of an FAO emergency project.

- **FORECAST**

DMA populations will remain in the soil in the egg stage till next spring. Final results of summer survey conducted in 11 north and north-east provinces are expected by the end of September.

Kazakhstan

- **SITUATION**

DMA and CIT situation became calm in all regions. DMA egg-pod survey was conducted on 6900 ha in August, out of which 540 ha were found infested. CIT egg-pod survey covered 200 ha, with eggs recorded in all these areas. LMI adults' surveys covered an overall area of 3 080 850 ha during the month, out of which 383 275 ha were found infested with various density of individuals.

Control operations have been completed for CIT in July and ended in August for LMI, with 3878 ha treated during the reporting period. In total, treated areas reached 1 615 923 ha during the 2023 locust campaign, which is 66% higher than in 2022 (975 450 ha). Such increase in 2023 is mainly due to the DMA and CIT higher infestations; as a result, 78 797 ha were treated against DMA (against 16 620 ha in 2022) and 1 334 251 ha against CIT (against 763 590 ha in 2022). The treated area against LMI, of 202 875 ha in 2023, was close to previous year (195 240 ha).

- **FORECAST**

CIT and LMI natural life cycles will come to an end in all regions. Egg-pod survey will be continued in autumn.

Kyrgyzstan

- **SITUATION**

DMA natural lifecycle came to an end. CIT populations were in their last instar and started fledging. In August, CIT survey were conducted on 15 126 ha. In total, survey in 2023 have been conducted on 90 780 ha, out of which 63 310 ha were found infested. While control operations have been completed in July against DMA, they ended in August for CIT, with 14 730 ha treated in Naryn region. Overall, control operations covered 63 010 ha in 2023, which is 22% higher compared to 2022 (51 480 ha). The operations took place using four ULV vehicle-mounted sprayers AU8115M and applying insecticides with a.i. alpha-cypermethrin, lambda-cyhalothrin, chlorpyrifos and deltamethrin.

- **FORECAST**

CIT natural die-off will end in most infested areas.



Tajikistan

- **SITUATION**

No additional areas were surveyed in August and the total surveyed area in 2023 thus remained unchanged, of 203 705 ha, including more than half of it in Khatlon region (116 750 ha). Control operations, which have been completed in June, covered 129 021 ha during the 2023 campaign, which is about 10% higher than in 2022 (117 070 ha).

- **FORECAST**

DMA and CIT eggs will remain in the soil until hatching next spring. Surveys in egg-laying sites of DMA and CIT as well as analyses of data will continue in the autumn.

Turkmenistan

- **SITUATION**

DMA annual cycle ended in July in all areas. During the 2023 campaign, a total of 171 396 ha were surveyed (against 148 654 ha in 2022), the majority of it in Lebap (70 345 ha) and Balkan (51 770 ha). Control operations were conducted on 44 952 ha, which is 16% higher as compared to 2022 (38 701 ha). A significant part of the treatments in 2023 was done in Lebap (20 710 ha) and Balkan (14 040 ha) regions.

- **FORECAST**

DMA and other locust species will remain in the soil in the egg stage till next spring.

Uzbekistan

- **SITUATION**

CIT and LMI mating and egg-laying completed in all regions. Locust control operations have been completed in July, and the total treated area thus remained unchanged: 495 891 ha were treated in 2023, which is 22% higher than in 2022 (406 018 ha).

- **FORECAST**

Eggs of all three locust species will remain in the soil until hatching next spring.

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 August 2023

- **Technical Workshop on Locusts in CCA, 20-24 November 2023, Bishkek, Kyrgyzstan:** invitations dispatched.
- **Country-to-country visit:** mission of Uzbek experts to Tajikistan, from 1 to 4 August in Sughd, to take part in field activities of the Tajik Human Health and Environment monitoring Team.
- **Human Health and Environmental Monitoring Team, Tajikistan:** as part of the second set of mission, last mission carried out on 1-4 August in Sughd.
- **Locust- Pesticide Management System (Locust-PMS), Georgia:** first field mission carried out on 3-10 August for inputs' inventory in pesticide warehouses in Kakheti, Kvemo Kartli and Mtskheta-Mtianeti.
- **Procurement (GCP/GLO/917/USA & GCP/INT/384/JCA):**
 - **Equipment delivered/handed-over:** GPS to Azerbaijan and pick-up vehicles (in country) for Uzbekistan.



- **Procurement in progress,** at various stages, for: vehicles for survey/control operations, water-tank lorry, camping equipment, PPE kits.

Forthcoming events and activities in September 2023:

- **Technical Workshop on Locusts in CCA, 20-24 November 2023, Bishkek, Kyrgyzstan:** nominations expected by 15 September 2023.
- **Automated System for Data Collections (ASDC):** comments from CCA countries on newly proposed Human Health and Environmental Monitoring Form and on revised Spray Monitoring Form expected by 15 September.
- **Country-to-country visit:** mission of Tajik experts in Uzbekistan, scheduled on 26-28 September in Tashkent, to visit the Laboratory for quarantine and plant protection of the Agency for Quarantine and Plant Protection (AQPP), Ministry of Agriculture.
- **Egg-pod survey for humpback saxaul grasshoppers in Uzbekistan:** scheduled from 11 to 20 September by NSPMD and national locust experts from AQPP.
- **Locust- Pesticide Management System (Locust-PMS), Georgia:** second field mission scheduled on 30 August - 6 September for inputs' inventory in pesticide warehouses in Kakheti, Kvemo Kartli and Mtskheta-Mtianeti.
- **Procurement** ongoing, with expected delivery of IT equipment for Armenia and Georgia and of pick-up vehicles to Turkmenistan.