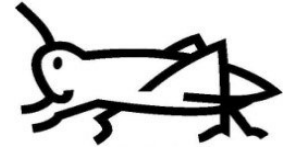




LOCUST BULLETIN No. 77



FAO - Plant Production and Protection Division (NSP)

18 August 2021

Situation level: **DANGER** in Georgia (CIT)

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

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

General Situation during July 2021

Forecast for August 2021

Moroccan Locust (DMA) natural cycle completed in all Caucasus and Central Asian (CCA) countries, while mating and egg-laying continued in Russian Federation. Italian (CIT) and Asian Migratory Locust (LMI) started mating and egg-laying in most countries. A *dangerous* situation with CIT still remains in Georgia while in other countries the situation was classified as *caution* or *calm*. During the forecast period, CIT breeding will continue in Caucasus, Kazakhstan, Kyrgyzstan and Russian Federation. LMI mating and egg-laying will continue in Kazakhstan and Russian Federation. In total, control operations in July covered more than 250 000 ha in CCA, reaching for about 1.9 million ha since the beginning of the 2021 campaign, which is about the same as in 2020. Summer surveys continued in most CCA countries, except Afghanistan, where security situation did not allow conducting activities.

Caucasus. DMA mating and egg-laying completed in the region. Serious situation for CIT continued in **Georgia** for the third month in a row, while in **Armenia** it was classified as "caution" and in **Azerbaijan** as "calm". Control operations covered 52 098.5 ha in July, the major part being in **Georgia** (38 175 ha).

Central Asia. DMA natural cycle came to an end in all countries. LMI and CIT fledging, mating and egg-laying

continued in **Kazakhstan, Russian Federation** and **Uzbekistan**. Control operations have ended in **Tajikistan, Turkmenistan, Uzbekistan** and will be continued in **Kazakhstan, Kyrgyzstan** and the **Russian Federation**. According to received reports, 197 914 ha were treated in July in Central Asian (CA) countries and Russian Federation against locusts and grasshoppers, which makes an overall treatment area over 1 765 087 ha, by the end of July 2021.

Weather and Ecological Conditions in July 2021

In **Caucasus**, the weather conditions were hot and within the norm. Natural vegetation was drying out.

In **Armenia**, average temperature in July was 25-30°C and there was no precipitation. Natural vegetation in Ararat valley and mountainous areas was dense and 10 to 45 cm tall and started drying out.

In **Azerbaijan**, typical for summer hot days, prevailed in July and average temperature and precipitation were close to the annual norm. Average monthly temperatures in Ganja-Kazakh zone were 22-24°C (18-20°C at night, 28-30°C at day, up to 38°C in some days), which is about the climatic norm. Natural vegetation in Djeyranchel, Kudri and Ajinohur dried up. Harvest of cereal crops continued.

In **Georgia**, the weather was generally hot and without any precipitation, average monthly temperature ranged from 22°C to 41°C. Vegetation in most locust infested areas had medium density and started to dry up.



In **Central Asia**, the weather was generally hot and dry, with temperatures and rainfall close to the annual norm. However, precipitation higher than the norm fell in some oblasts of Kazakhstan.

In Afghanistan, the weather was dry and hot with only scattered precipitation in some foothill areas. Natural vegetation dried up in all provinces.

In Kazakhstan, the weather was hot in most areas, but higher than the norm precipitation was observed in some oblasts. In the South, the weather was unstable, with mainly sunny and some cloudy days with rains close to the norm. Average daily temperature ranged from 18.4 to 40°C with a maximum of 45°C and a minimum of 12.5°C. Relative air humidity varied between 10 and 85%. Monthly precipitation was 0.8 to 23 mm, with maximum in Almaty oblast, where it was 53% higher than the norm. In the East, the weather was changeable with sunny and cloudy days and some precipitation. The average daily temperature was around 22.6°C with a maximum of 38°C and a minimum of 8°C. Average air humidity was 61.5%. Precipitation was 54 mm, which is 15% lower than the norm for this period of the year. In the West, the weather was in general very hot and with some rainy days. Average daily temperature ranged from 14.3°C to 40.5°C, with a maximum of 45°C and a minimum of 11.3°C. Precipitations in the form of rain ranged from 6 mm up to 150 mm in Aktobe oblast, where it was 505 % of annual norm. Relative air humidity varied from 23 to 81%. In the North, the weather was hot, but with gusty winds. Average daily temperature ranged from 11.5°C to 28.3°C, with a maximum of 39.2°C and a minimum of 6.4°C. Wind speed was on average 1-3 m/sec, reaching 28 m/sec at gusts. Precipitations were overall lower than the norm in most areas, except Kostanay oblast, where 104 mm rain fell (200% higher than the norm).

In Kyrgyzstan, in Batken, Chuy, Jalal-Abad and Osh oblasts the average temperature was higher than the annual norm by 1°C, but in Issyk-kul, Naryn and Talas oblasts it was about the norm. The precipitation was close to the annual norm. In Chuy oblast, average temperature was 24-26°C, with day temperatures ranging from 25 to 39°C and at nights from 13 to 24°C. Precipitation was 18-23 mm in valleys and 50-62 mm in mountainous areas. In Naryn oblast, average temperature was 18-20°C, with day temperatures ranging from 19 to 34°C and at nights from 4 to 16°C. Precipitation was close to the annual norm (24-41 mm). Natural vegetation in the locust infested areas was of medium density and started to dry out.

In the Russian Federation, the weather was generally hot, varying between geographic areas and mostly suitable for locust development in all Federal Districts (FD). In the Central FD, the temperature was abnormally high ranging from 22.4 to 33.7°C. Rainfall ranged from 10 to 40 mm. In the South FD, the weather was warmer than usual with an average monthly temperature of 27-28°C, reaching 41°C in some hot days. Rainfall ranged from 10 to 24 mm. In North Caucasus FD, average monthly temperature was 24.7-25°C, with a maximum of 41°C, and precipitation ranged from 40 to 70 mm. In Volga FD, the weather was warm, average temperatures varied from 19.6° to 22°C with a maximum of 35°C and rain ranged from 20 to 70 mm. In the Ural FD, the weather was warmer than the norm. The average temperature was 19-22°C reaching 38°C and rainfall varied from 30 to 50 mm. In the Siberian FD, the temperature in July varied from 11 to 23°C, with a maximum 37.1°C during the hottest day and rainfall ranged from 20 to 70 mm. In the Far East FD, average temperatures ranged from 15° to 21°C and at maximum of 34.2°C. Precipitation ranged from 20 to 110 mm.

In Tajikistan, the weather was hot and dry, with dusty storms occurring in the southern and central parts of the country. Average daily temperature was 27-29°C, with a maximum 44°C. Precipitation fell only in foothills and mountainous areas, where it caused local flooding.

In Turkmenistan, the weather was hot and dry, without precipitation. Average temperature during the daytime was 35-38°C, reaching up to 44°C.

In Uzbekistan, air temperature was high and the weather was hot and dry. Average temperature in the Autonomous Republic of Karakalpakstan, Khorezm and northern part of Navoi oblasts ranged from 18 to 29°C at nights and 37 to 40° C during the days. In Tashkent, Syrdarya, Jizzakh, Samarkand, Bukhara and southern part of Navoi oblasts, temperature varied from 17°C to 28°C at nights and from 36° C to 40°C at days. Temperature in Kashkadarya and Surkhandarya oblasts varied from 18-29 °C at night to 38-40°C at days. In Fergana valley, temperature varied from 17-28°C at nights to 22-38°C at days. Precipitation was very low (5 mm), which is usual for this time of the year.

Area treated in July and since the beginning of the 2021 campaign

Afghanistan	600 / 78 983 ha
Armenia	498 / 1 398 ha
Azerbaijan	13 425.5 / 27 779.5 ha
Georgia	38 175 / 104 035 ha
Kazakhstan	77 460 / 625 900 ha
Kyrgyzstan	14 308 / 42 908 ha
Russian Federation	75 0000 / 339 530 ha
Tajikistan	4 626 / 130 503 ha
Turkmenistan	114 / 43 387 ha
Uzbekistan	25 806 / 503 876 ha
Total	250 012.5 / 1 898 299.5 ha

Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

• SITUATION

By the end of July, 62 455 ha were surveyed in total. CIT hoppers were in their 4th and 5th instars in foothill zones, while in Ararat valley they were mainly in 5th instar. Control operations were conducted on 1 398 ha against CIT in Tavush and Ararat regions. Insecticide with trade name “Triumph” (active ingredient: cypermethrin) was applied against the locust.

• FORECAST

CIT mating and egg-laying will take place in August

Azerbaijan

• SITUATION

DMA and LMI lifecycles came to an end, while CIT egg-laying was also close to finishing. Treatments against DMA covered 5 275.5 ha in July, reaching 16 936 ha since the start of campaign. Treatments against CIT covered 8 150 ha in July and 10 580 ha from the start of campaign. No treatments against LMI were carried out in July. In total, control operations were carried out on the 27 779.5 ha since the start of the campaign, which is lower than the same period of 2020 for about 17%.

• FORECAST

CIT will finish egg-laying and die-off will take place in August. Control operations against CIT will be continued in some areas and eventually come to an end.



Georgia

• SITUATION

In total, 295 000 ha have been surveyed since the start of campaign. The survey revealed that situation with CIT remains dangerous by the end of July, especially in the border areas between Georgia, Armenia and Azerbaijan. In some areas CIT started mating and egg-laying. Control operations against CIT continued and concerned 38 175 ha in July, with significant areas treated in Kvemo Kartli (17 200 ha) and Kakheti (11 100 ha) regions. Since the start of the campaign, 104 035 ha have been treated, which 1.6 times higher than in the same period of 2020. Control operations were carried out by ULV sprayers Micronair AU8115, using insecticide “loxley” (active ingredient: chlorpyrifos).

• FORECAST

CIT mass fledging and mating followed by egg-laying will be continued in early August and by the end of month egg-laying will be finished.

CENTRAL ASIA

Afghanistan

• SITUATION

Locust campaign has finished in the majority of provinces of Afghanistan, except Ghor and Faryab, where in total 600 ha were treated. By the end of July, the total treated area since the campaign start reached 78 983 ha. Due to the problems with security in most areas, locust control activities, including summer survey and control operations against the DMA and grasshoppers in Dasht-e-Shiwa pasture areas of Badakhshan province were not possible.

• FORECAST

Locust control operations have finished in all provinces, however implementation of the summer survey of egg-laying sites will depend on the security situation.

Kazakhstan

• SITUATION

DMA adult survey during mating and egg-laying continued in July on a total area of 1 487 500 ha, out of which 119 200 ha were infested, including 104 100 ha with densities up to 5 adults/m², 14 200 ha with densities up to 10 adults/m² and 900 ha with more than 10 adults/m².



CIT hopper surveys were finished on 16 July covering a total area of 12 004 800 ha, out of which 962 600 ha were found infested. All areas with CIT densities exceeding the economic threshold, representing 404 500 ha, were treated. Summer surveys of CIT egg-laying sites started on 15 July in southern oblasts. By the end of July, 5 581 500 ha were surveyed, out of which 338 300 ha were found infested, with an average density of up to 5 adults/m² on 219 200 ha, from 5 to 10 adults/m² on 85 200 ha and more than 10 adults/m² on 33 900 ha.

With regard to LMI, hopper surveys covered a total area of 3 786 000 ha, out of which 229 400 were infested. Control operations against the LMI hopper bands covered all areas with densities exceeding the economic threshold, or 131 800 ha. Summer surveys during mating and egg-laying started so far covering 671 880 ha, out of which 9 703 ha were found infested. Average density of up to 1 adult/m² was found on 5 103 ha, up to 10 adults/m² on 2 600 ha and more than 10 adults/m² on 2 000 ha.

• FORECAST

CIT mating and egg-laying will continue, while its die-off shall start in southern oblasts. LMI mating and egg-laying is expected to start in August.

Kyrgyzstan

• SITUATION

DMA natural lifecycle came to an end, while CIT development continued in July. DMA adult survey covered 1 100 ha in July, out of which 700 ha were infested with the average density from 6 to 17 adults/m². CIT surveys were conducted on 18 760 ha in July, out of which 13 645 ha (in Naryn oblast) were found infested with an average density from 14 to 25 hoppers/m². Most of the hopper populations were in their 4th and 5th instars.

Control operations covered a total area 42 908 ha since the start of campaign, out of which 29 200 ha have been treated against DMA and 13 708 ha against CIT. Control operations in July were carried out by six ULV vehicle-mounted sprayers AU8115M and six EC sprayers driven by tractors using the same pesticides as the previous months.

• FORECAST

Control operations against CIT will continue in Naryn and Talas oblasts. Warning message was received from Bakay-Ata district of Talas oblast at the end of July on an outbreak of CIT, where control operation will continue in August.

Russian Federation

• SITUATION

Surveys of locust and grasshoppers have been conducted on a total area of 7 215 300 ha since the start of the campaign out of which 1 141 140 ha were found infested. Locust survey concerned 5 130 890 ha, out of which 904 420 ha were found infested with hoppers of various instars and 67 910 ha with adults. Highest average density of LMI hoppers (75/m²) and adults (256/m²) were observed in Krasnodar area. So far, control operations against locusts and grasshoppers have been carried out on a total area of 339 530 ha from the start of campaign (significantly lower than last year), using 504 sprayers, including 475 ground sprayers and 29 small aircraft.

• FORECAST

In August, in all areas locust fledging will continue and it mating and egg-laying will start. Surveys of adult individuals, as well control operations will continue in most regions.

Tajikistan

• SITUATION

By the end of July a total area of 148 320 ha was surveyed, and 130 382 ha were found infested. Control operations were completed in all areas and covered 130 503 ha or 10% higher than the planned area. Treatments were carried out using EC and ULV sprayers, such as TOS-600 and 2000, Agromaster, Micronair AU8115 and knapsack sprayers Micronair AU8000. Chemical pesticides Karate (active ingredient: lambda-cyhalothrin), Fastak (active ingredient: alpha-cypermethrin) and Nurelle-D (active ingredients: chlorpyrifos+cypermethrin) were applied .

• FORECAST

Natural life cycle of CIT will come to an end in August. Summer surveys will continue in egg-laying sites.

Turkmenistan

• SITUATION

Summer surveys covered 1 457 ha in July, including in foothill areas of Akhal (1 028 ha) and desert areas of Dashoguz (429 ha), for a total of over 224 179 ha since the start of the campaign. Control operations were carried out on 114 ha in Dashoguz region and on a total of 43 387 ha since

the start of campaign, which is significantly lower than in 2020. Chemical treatments were carried out using ULV vehicle-mounted sprayers “Wind 634 Flexigun”, AU8115, Ulvamast V4, by applying insecticides Fascord EC (active ingredient: alpha-cypermethrin) and Demond (active ingredient: deltamethrin). Campaign against DMA finished in July.

- **FORECAST**

CIT, LMI and grasshoppers survey will continue in August.

Uzbekistan

- **SITUATION**

DMA natural cycle came to an end. CIT and LMI mating and egg-laying continued mainly in Karakalpakstan.

By the end of July, control operations covered a total area of 503 876 ha, including against the DMA on 304 920 ha, against CIT on 83 485 ha, against LMI on 5 300 ha, against saxaul humpback grasshopper (*Dericorys albidula*), on 69 480 ha and against other grasshoppers on 40 691 ha. Among the oblasts and regions, largest control operations were conducted in Kashkadarya oblast (113 970 ha), Autonomous Republic of Karakalpakstan (110 000 ha) and Surkhandarya oblast (101 760 ha). In 2021 campaign, 153 tractor sprayers, 201 backpack sprayers, 3 ultra-light aircraft, 1 large aircraft, 38 different ULV sprayers and 50 water lorries were used. Insecticides based on the following active ingredients were applied: lambda-cyhalothrin, imidacloprid, alpha-cypermethrin and fipronil.

- **FORECAST**

In Karakalpakstan, CIT and LMI life cycle will come to an end.

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 1st 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 2021

- **National sessions on locust management (for staff) and Briefing sessions on spraying and pesticide risk reduction (for staff/local manpower):**
 - Afghanistan: two briefing sessions further postponed due to in-country Covid-19 travel restrictions;
 - Azerbaijan: fourth and last training session delivered to the benefit of 19 Plant Protection/Locusts Experts in Ajinohur steppe (Sheki region) on 6 July.
- **Practical Guidelines (PG):**
 - PG on three Locusts Pests in CCA: Russian version handed-over to Azerbaijan; Georgian version: layout under review; Azeri version: editing/review of technical terminology finalized;
 - PG on pesticide risk reduction for locust control in CCA: English/Russian versions handed-over to Azerbaijan; Georgian version: layout under review; Azeri and Uzbek versions: editing/review of technical terminology finalized.
- **Two posters on Italian and Moroccan Locusts** (biology, ecology, monitoring) to be published in Georgian, Turkmen and Uzbek.
- **Human Health and Environmental Monitoring Teams:**
 - Azerbaijan: fourth and last monitoring missions carried out in Ajinohur steppe (Sheki, Gakh) on 2-7 July 2021;
 - Georgia: second monitoring mission carried out in Kakheti, Mtskheta-Mtianeti and Kvemo-Kartli on 1-18 July (out of the three missions until August);

- **Procurement** in progress, at various stages, for: entomological kits and binoculars, motorbikes, vehicles for survey/control, tractors, ULV and EC sprayers, water tank lorries, minibus, camping equipment, Personal Protective Equipment (PPE) and test-mate kits.



Forthcoming events and activities in August 2021:

- **Annual Technical workshop on locusts in CCA:** invitation letter to be issued (23-25 November 2021, online)
- **Practical Guidelines (PG):**
 - PG on three Locusts Pests in CCA: Azeri, Georgian, Kyrgyz and Tajik versions to be finalized;
 - PG on pesticide risk reduction for locust control in CCA: Azeri, Georgian and Uzbek versions to be finalized; Translation into Turkmen to be started.
- **Two posters on Italian and Moroccan Locusts** (biology, ecology, monitoring) published in Turkmen, to be finalized in Georgian and Uzbek.
- **Human Health and Environmental Monitoring Teams:**
 - Georgia: third and last monitoring mission scheduled in Kakheti, Mtskheta-Mtianeti and Kvemo-Kartli on 6-16 August;
- **Procurement** - ongoing, with expected delivery of: tablets to Turkmenistan (GCP/INT/384/JCA); ULV sprayers to Uzbekistan (GCP/INT/384/JCA); motorbikes to Afghanistan (GCP/INT/384/JCA); reagents for test-mate kits for Tajikistan (GCP/INT/384/JCA); PPE kits to Georgia (TCP/GEO/3801) and Uzbekistan (GCP/ INT/384/JCA).