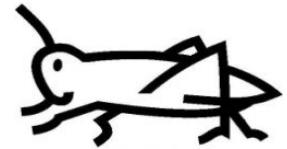




## LOCUST BULLETIN No. 71



FAO - Plant Production and Protection Division (NSP)

19 August 2020

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

**Situation level: CAUTION in Kyrgyzstan (CIT)**

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

### General situation during July 2020 Forecast for August 2020

Moroccan Locust (DMA) completed its natural cycle in all countries. Italian and Asian Migratory Locusts (CIT and LMI) were mating and egg-laying in most countries. Generally, the situation became calm. Control campaigns were winding down, except for Kazakhstan, the Russian Federation and Uzbekistan where treatments continued against CIT and LMI, as well as in Georgia and Kyrgyzstan where CIT infestations threatened crops and required protective insecticide treatments. An area of almost 300 000 ha was treated in July 2020. In total, about 1.8 million ha have been treated since the beginning of the campaign, which is close to 2019 level but slightly lower than the forecast for 2020. In most countries, COVID-19 pandemics created serious difficulties in implementing locust monitoring and control activities.

**Caucasus.** DMA mating and egg-laying continued in **Azerbaijan** where treatments were applied to a small area of 1 339 ha. CIT late-instar hoppers and adults were the main target of anti-locust treatments in **Armenia**, **Azerbaijan** and **Georgia**; in the latter country CIT infestations threatened crops requiring treatments on over 38 000 ha. In total, about 48 000 ha were treated in Caucasus in July.

**Central Asia.** DMA completed its natural cycle in the southern CA countries while CIT and LMI continued mating and egg-laying in **Kazakhstan**, **Kyrgyzstan**, **Russian**

**Federation, Tajikistan** and **Uzbekistan**. A total of almost 246 000 ha were treated, mostly against CIT and LMI.

### Weather and Ecological Conditions in July 2020

Weather was generally hot and dry in both Caucasus and Central Asia, providing favorable conditions for locust mating and egg-laying. In some regions of Kazakhstan and the Russian Federation, the weather was changeable with abundant precipitations.

In **Caucasus**, the weather was very hot and dry throughout July.

In **Azerbaijan**, the weather was hot and dry. The natural vegetation cover completely dried out except for some *Artemisia* and camelthorn plants. Average temperatures were 27-29°C (up to 32°C), which is close to the climatic norm.

In **Armenia**, the weather was hot and dry with temperatures between 35 and 38°C in the daytime and 18-22°C at night.

In **Georgia**, the weather was extremely hot and dry with minimum temperatures 28°C and maximum of 40°C. Vegetation in locust-infested areas was of very low density and dried out.

In **Central Asia**, the weather was mostly hot; in some areas of Kazakhstan and the Russian Federation, significant amounts of precipitations fell.



In Afghanistan, weather was hot and dry.

In Kazakhstan, the weather was unstable. In the South, the weather was dry, with 0.3 – 32 mm of precipitations (Almaty oblast, 53% of the norm). The average daily temperature ranged from 18 to 33.5°C with minimum of 13.3°C (at night) and maximum of 41°C. In the East, the weather was unstable with sunny and rainy days. The average daily temperature was 22.5°C with minimum of 9.8°C and maximum of 37.4°C. Precipitations amounted to 63 mm in East Kazakhstan oblast, which is above the norm. In the West, the weather was changeable. The average daily temperature ranged from 17.1°C to 36.2°C, with minimum of 8.3°C and maximum of 42°C. Precipitations ranged from 0.3 mm (Atyrau, below the norm) to 27 mm (Aktobe, 97% of the norm). In the North, the weather was mostly warm and rainy. The average daily temperature ranged from 15.8°C to 28.7°C, with minimum 10.3°C and maximum of 36.1°C. Precipitations varied from 10 to 70 mm (Karaganda, above the norm).

In Kyrgyzstan, the weather was mostly hot. In Naryn oblast, average monthly temperatures ranged from 18 to 20°C, which is 1°C above the norm. More specifically, temperatures ranged from 6-11°C to 12-17°C at night and from 19-24°C to 27-32°C during the day; the amount of precipitations (24-41 mm) was close to the norm. In Talas oblast, average monthly temperatures ranged from 21 to 23°C, which is 1°C above the norm. More specifically, temperatures ranged from 9-14°C to 15-20°C at night and from 24-29°C to 31-36°C during the day; the amount of precipitations (16-20 mm) was below the norm. Natural vegetation (grasses and *Artemisia* spp. mixed with ephemerals) was drying out; it had a 2-4 cm height and a medium density.

In the Russian Federation, the weather was changeable with high rains locally and generally favorable for locust development. In the Central Federal District (FD), the weather was unstable with average monthly temperatures ranging from 19° to 21°C (up to 33-35°C) and rainfall ranged from 33 to 150 mm, which is above the norm. In the South FD, the weather was hot with average temperatures ranging from 25° to 28°C (sometimes reaching 37-42°C). Precipitations averaged from 46 to 105 mm, which is above the norm; heavy rains fell especially in Rostov, Volgograd, Krasnodar and Stavropol regions. In North Caucasus FD, average temperatures ranged from 23° to 26°C with maximum up to 38°C and rain fell below the norm ranging from 12 to 50 mm. In Volga FD, average temperatures ranged from 23° to 26°C with maximum up to 40°C and rain ranged from 65 to 100 mm, which is above the norm. In the Ural FD, the weather was unstable, with temperatures from 21 to 22°C and rainfall

from 17 to 43 mm, close to the norm. In the Siberian FD, the average temperatures ranged from 18° to 21°C (sometimes up to 33°C) and rainfall ranged from 50 to 120 mm, above the norm. In the Far East FD, average temperatures ranged from 21° to 22°C and rainfall ranged from 120 to 140 mm, which is significantly above the norm.

In Tajikistan, the weather was hot and dry. In Khatlon oblast, the average temperature was 29°C at night and 36°C during the day; in Sughd oblast, the average temperature ranged from 25°C at night to 33°C during the day. In Districts of Republican Subordination (DRS), average temperatures ranged from 24°C at night to 32°C during the day. Precipitations were very low.

In Turkmenistan, the temperatures and precipitations were close to the multiannual norm.

In Uzbekistan, weather was very hot and dry. Average daily temperatures ranged from 26 to 35°C in foothills and from 29 to 36°C, sometimes up to 40°C in valleys. Precipitations were very low, only 5 mm on an average.

### Area treated in July 2020

Afghanistan	3 746 ha
Armenia	1 130 ha
Azerbaijan	8 602 ha
Georgia	38 081 ha
Kazakhstan	85 400 ha
Kyrgyzstan	14 825 ha
Russia	108 420 ha
Tajikistan	5 504 ha
Turkmenistan	no data
Uzbekistan	31 386 ha
TOTAL	295 964 ha

### Locust Situation and Forecast

(see also summary on page 1)

#### CAUCASUS

##### Armenia

##### • SITUATION

Italian Locust (CIT) hopper surveys were conducted on 79 550 ha out of which 1 130 ha were found infested by CIT

hoppers at a density between 0 and 2 individuals per m<sup>2</sup> in Ararat (1 030 ha) and Artashat (100 ha) districts. The infested areas were treated with neo-nicotinoid acetamiprid.

- **FORECAST**

*CIT egg-laying will take place in August.*

### **Azerbaijan**

- **SITUATION**

DMA egg-laying finished in early July in most areas and the populations completed the annual cycle. Hot and dry weather accelerated CIT hopper development in Eldar steppe (Samukhi district) and Djeyranchel steppe (Akstafa, Tovuz and Shamkir districts); by the end of July, populations consisted of mature adults, which started to lay eggs. LMI mated and laid eggs through July. Chemical treatments against all three species were implemented on 8 602 ha including against CIT on 6 400 ha, against DMA on 1 339 ha and against LMI on 863 ha. Two pyrethroid insecticides, alpha-cypermethrin and cypermethrin, were applied by vehicle-mounted Ultra-Low Volume (ULV) sprayers (dose rate 1 l/ha), tractor-driven ventilator sprayers (dose rate 200-400 l/ha) and "Scout" sprayers (against LMI).

- **FORECAST**

*DMA eggs will stay in soil until the hatch next spring. CIT and LMI will finish egg-laying and start to die off.*

### **Georgia**

- **SITUATION**

DMA life cycle completed. CIT fledging, mating and egg-laying occurred in July. Nymphal surveys took place on over 215 600 ha with largest areas surveyed in Kvemo-Kartli (105 000 ha) and Kakheti (75 000 ha). Chemical treatments with pyrethroid deltamethrin (25 g/l) and organophosphate chlorpyrifos (240 g/l) took place against CIT on 38 081 ha in the above-mentioned areas. They were applied by vehicle-mounted ULV and Low Volume (LV) sprayers. Since the beginning of the 2020 campaign, 63 421 ha have been treated, which is the largest area in decades.

- **FORECAST**

*DMA eggs will remain in soil until they hatch next spring. CIT egg-laying will continue and then the populations will complete their annual cycle and subside.*

### **CENTRAL ASIA**

#### **Afghanistan**

- **SITUATION**



In most provinces, DMA completed its life cycle. In three provinces, DMA adults were egg-laying, and chemical treatments were applied to protect crops. More specifically treatments took place in Ghor (3 628 ha), Parwan (90 ha) and Badakhshan (28 ha). In July, 3 746 ha were treated, which brought the total area treated from the beginning of the 2020 campaign to 90 584 ha.

- **FORECAST**

*DMA eggs will remain in soil until they hatch next spring.*

#### **Kazakhstan**

- **SITUATION**

DMA finished egg-laying and started to die off. Surveys during this period covered 1 587 200 ha (including 570 200 ha in July) out of which 200 200 ha were infested, including with densities below 5 egg-pods per m<sup>2</sup> on 102 600 ha, from 5 to 10 egg-pods per m<sup>2</sup> on 63 000 ha and over 10 egg-pods per m<sup>2</sup> on 34 600 ha.

CIT hopper surveys covered 11 885 000 ha (including 775 800 ha in July) out of which 822 400 ha were infested including 286 500 ha with densities above the Economic Threshold (ET). Largest infested areas with densities above ET were in West-Kazakhstan (67 400 ha), Almaty (62 900 ha), Zhambyl (40 300 ha) and Aktobe (24 900 ha). Most CIT populations were mating and egg-laying. Chemical treatments were applied to 17 800 ha. LMI hopper surveys were conducted on 3 754 200 ha out of which 259 600 ha were infested, including 161 000 ha with densities above ET. Largest areas infested with densities above ET were in Almaty (60 100 ha) and Kyzyl-Orda (55 700 ha) oblasts. Most LMI populations were in adult stage and started mating. Chemical treatments against LMI took place on 67 600 ha 000 ha. Since the beginning of the 2020 campaign, chemical treatments against DMA, CIT and LMI took place on 514 500 ha, which is close to the forecasted area for 2020 (553 951 ha).

- **FORECAST**

*DMA completed its life cycle; eggs will remain in soil until they hatch next spring. CIT will continue mating and egg-laying and will start to die off. LMI mating and egg-laying will continue.*



## Kyrgyzstan

### • SITUATION

DMA populations were gradually subsiding in July. Adult surveys were conducted on 450 ha in Osh oblast out of which 400 ha were infested with densities ranging from 5 to 10 individuals/m<sup>2</sup>. Treatments were conducted on 775 ha including 400 ha in Osh and 375 ha in Batken oblasts. CIT hopper surveys were implemented on 25 900 ha out of which 20 650 ha were infested (Naryn oblast – 14 900 ha, Talas - 5 750 ha) with densities from 5 to 42 individuals/m<sup>2</sup>. CIT populations were in adult stage in Tchuy and Talas and in 5<sup>th</sup> instar and adult stage in Naryn oblasts. Chemical treatments against CIT were implemented on 14 050 ha including 10 000 ha in Naryn, 600 ha in Tchuy and 3 450 ha in Talas oblasts. Against both locusts, pyrethroid insecticides alpha-cypermethrin and lambda-cyhalothrin were used. Treatments were applied by vehicle-mounted ULV sprayers except in Tchuy oblast where tractor-driven sprayers were used.

### • FORECAST

*In the south, DMA completed its natural cycle; the eggs will stay in soil until they hatch next spring. CIT will continue mating and egg-laying. Chemical treatments will continue in Naryn and Talas oblasts.*

## Russian Federation

### • SITUATION

In July, DMA finished egg-laying and started to die off. CIT and LMI continued hopper development, fledged and started to mate and lay eggs. Since the beginning of the 2020 campaign, locust surveys covered in total 6 183 430 ha out of which 516 220 ha were infested with hoppers and 122 330 ha with adults. Grasshopper surveys were implemented on 6 739 440 ha out of which 906 820 ha were infested with hoppers and 260 590 ha with adults. In six administrative regions – Chechen Republic, Republic of Kalmykia, Khakasiya, Astrakhan, Rostov and Volgograd oblasts – the locust situation was particularly threatening, and a “higher readiness” or “emergency” regimes was declared. In the South Federal District (FD), locust infestations covered the largest area in the country and densities were the highest. Locust (CIT, DMA and LMI) hopper surveys took place on 2 001 030 ha out of which 196 340 ha were infested with an average density of 29/m<sup>2</sup> and a maximum density of 3 000/m<sup>2</sup>. Adult surveys were conducted on 639 880 ha out of which 48 010 ha were

infested with an average density of 29 individuals/m<sup>2</sup> and a maximum density of 500 adults/m<sup>2</sup>. In North Caucasus FD, locust infestations were widespread but to a lesser extent, compared to South FD. Locust (CIT, DMA and LMI) hopper surveys were conducted on 1 051 280 ha out of which 288 360 ha were infested with an average density of 15.65 hoppers/m<sup>2</sup> and a maximum density of 350 hoppers/m<sup>2</sup>. Adult locust surveys were conducted on 361 120 ha out of which 60 080 ha were infested with an average density of 8.5 individuals/m<sup>2</sup> and a maximum density of 200 individuals/m<sup>2</sup>. In all other FD, the locust situation was generally calm; however, some localized heavy grasshopper infestations occurred in the eastern part of the country. In the Central FD, CIT hopper surveys were conducted on 81 590 ha out of which 5 090 ha were infested with an average density of 0.42 individuals/m<sup>2</sup> and a maximum density of 7 individuals/m<sup>2</sup>. In the Volga FD, CIT hopper surveys were conducted on 453 250 ha out of which 18 930 ha were found infested with an average density of 0.7 hoppers/m<sup>2</sup> and a maximum density of 50 hoppers/m<sup>2</sup>. In the Ural FD, out of 240 280 ha surveyed, locust hoppers were found on 400 ha with very low densities below 1 individual/m<sup>2</sup>. In the Siberia FD, CIT hopper surveys were conducted on 136 170 ha out of which 7 090 ha were infested with an average density of 0.4 hoppers/m<sup>2</sup> and a maximum density of 4 hoppers/m<sup>2</sup>. Adult surveys were conducted on 114 520 ha out of which 7 680 ha were infested with an average density of 0.2 individuals/m<sup>2</sup> and a maximum density of 3 individuals/m<sup>2</sup>. In the Far East FD, only grasshopper surveys were conducted on 218 660 ha out of which 112 670 ha were infested with an average density of 2.7 hoppers/m<sup>2</sup> and a maximum density of 85 hoppers/m<sup>2</sup>. Anti-locust treatments were conducted by 519 units of ground sprayers and 27 aircraft on 270 860 ha, which brought the total area treated since the beginning of the campaign to 360 960 ha.

### • FORECAST

*DMA completed its natural cycle; eggs will remain in soil until they hatch next spring. CIT and LMI will continue egg-laying and may produce swarm flights. In the southern FD, population die off will start.*



## Tajikistan

### • SITUATION

DMA natural cycle completed in Khatlon; eggs will stay in soil until they hatch next spring. Egg-pod surveys started. In Sughd oblast, DMA egg-laying was completed and populations started to die off. CIT continued egg-laying in Sughd, where 5 504 ha were treated in July. Treatments finished on 23 July. In total, 113 459 ha were treated during the 2020 campaign. The bulk of treatments was done against DMA (almost 100 000 ha) and the remaining 14 313 ha against CIT.

### • FORECAST

*DMA natural cycle completed, eggs will stay in soil until they hatch next spring. CIT will complete egg-laying and the populations will start to die off. Egg-pod surveys will continue.*

## Turkmenistan

### • SITUATION

No report was received. Based on the situation in the neighbouring countries, DMA egg-laying came to an end.

### • FORECAST

*DMA will complete its natural cycle and eggs will remain in the soil until hatching next spring.*

## Uzbekistan

### • SITUATION

General situation is calm. DMA completed its natural cycle. CIT and LMI mating and egg-laying continued mostly in Karakalpakstan followed by fledging, mating and egg-laying. Anti-locust treatments were implemented on 31 386 ha (including 17 336 ha against LMI and 14 050 ha against CIT, both in Karakalpakstan), bringing the total area treated since the beginning of the campaign to 527 436 ha. This is lower than the forecast for 2020 (640 400 ha)

### • FORECAST

*DMA eggs will stay in the soil until hatching next spring. CIT and LMI will complete their natural cycle 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](mailto:CCA@Bulletins@fao.org). Monthly information received by the 1<sup>st</sup> 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 2020**

### • **Practical Guidelines:**

- On the three locust pests in CCA: within FAO system of publications for internal approval.
- On pesticide risk reduction for locust control in CCA: 200 additional copies delivered to Kyrgyzstan on 29 July.

- **Briefing sessions on locust spraying and pesticide risk reduction, Kyrgyzstan:** 3<sup>rd</sup> and 4<sup>th</sup> sessions delivered by Master-Trainers to a total of 20 spraying staff/local manpower on 9-11 July 2020 in Batken and on 22-24 July 2020 in Talas.

### • **Human Health and Environmental Monitoring Teams:**

- Georgia: 3<sup>rd</sup> and last monitoring mission carried out on 15-29 July in Kakheti, Mtskheta-Mtianeti and Kvemo Kartli;
- Kyrgyzstan: 3<sup>rd</sup> and 4<sup>th</sup> monitoring missions carried out on 11-17 July in Batken and on 24-30 July 2020 in Talas.

- **Equipment for Kyrgyzstan:**





- o Pesticides: order issued for 10 000 l, delivery pending shipment of samples and laboratory analysis (process delayed due to consequences of COVID-19);
- o Personal Protective Equipment (PPE): evaluation finalized;
- o Cholinesterase kits: one testmate and two reagents ordered and in transit.
- **New project GCP/INT/384/JCA - Central Asia:** Exchanges of notes and Grant Agreement between Japan International Cooperation Agency (JICA) and FAO signed on 28 July.

#### **Forthcoming events and activities in August 2020**

- **Briefing sessions on locust spraying and pesticide risk reduction, Kyrgyzstan:** 5th and final session to be delivered by Master-Trainers to spraying staff/local manpower on 4-6 August 2020, in At-Bashy and Ak-Talaa districts, Naryn region.
- **Human Health and Environmental Monitoring Teams , Kyrgyzstan** 5th and last monitoring mission to be carried out on 6-12 August in At-Bashy and Ak-Talaa districts, Naryn region.
- **Equipment:**
  - o Pesticides: first order to be delivered after sample analysis and additional order to be issued;
  - o Personal Protective Equipment (PPE) for Kyrgyzstan: order to be issued;
  - o Cholinesterase kits: to be delivered after finalization of custom clearance process.
  - o Tablets for the Automated System for Data Collection (ASDC) use, purchased in 2019, to be transferred to Kazakhstan (20 units) and shipped to Turkmenistan (five units), with four entomological kits to the latter country.
- **New project GCP/INT/384/JCA - Central Asia:** Project Document to be sent to the concerned countries for signature in view of project operational start.
- **Webinar for suppliers from Russia and the wider Eurasian region on FAO procedures and requirements for the supply of locust control chemical and biological agents to FAO pest management operations worldwide** scheduled on 6 August 2020.