



LOCUST BULLETIN No. 57

FAO - Plant Production and Protection Division (AGP)

15 August 2018

CAUTION in Kazakhstan (CIT), Kyrgyzstan (CIT), Russia (CIT and LMI) and Uzbekistan (LMI)

Situation level: CALM elsewhere or for the other locust pests

General situation during July 2018 Forecast until mid-September 2018

Moroccan Locust (DMA) natural cycle ended in all countries except Azerbaijan where egg-laying continued. Italian Locust (CIT) hopper development finished and fledging occurred, followed by the start of mating and egg-laying in Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. Migratory Locust (LMI) hopper development continued in Kazakhstan, Uzbekistan and the Russian Federation followed by the start of fledging, mating and egg-laying. During the forecast period, egg-laying of CIT and LMI will gradually finish and natural disappearance will start locally. Since the beginning of the national campaigns, about 3.5 million ha have been treated in Caucasus and Central Asia (CCA).

Caucasus. DMA egg-laying continued in Azerbaijan while CIT mating and egg-laying are likely to have started in Armenia and Georgia. During the forecast period remaining DMA populations will disappear and CIT populations will continue to breed.

Central Asia. DMA natural cycle ended. CIT hopper development, followed by mating and egg-laying continued in Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. LMI hopper development followed by fledging and breeding continued in Kazakhstan, Uzbekistan and the Russian Federation. After the peak of anti-locust treatments in June, about 459 000 ha were treated against locusts and grasshoppers in July.

Weather and ecological conditions in July 2018

Warm weather with temperatures close to or above the climatic norms prevailed. Precipitations were generally lower than the multiannual averages and the natural vegetation dried out.

In **Caucasus**, and more specifically in Armenia, based on the report for June, the weather was hot with temperatures ranging from 37 to 36.0 °C in the daytime and from 30 to 35 °C during the night.

In Azerbaijan, the weather was hot with daily temperatures reaching 44 to 46 °C. South-easterly and north-westerly winds prevailed at a speed of 3-7 m/s and up to 12 m/s in gusts. No precipitation fell, and the natural vegetation dominated by *Artemisia* spp. dried out.

In **Central Asia**, the weather was highly variable throughout the region with temperatures close to or above the climatic norms and precipitations lower than usual.

In Afghanistan, above normal temperatures prevailed all over the country in June and July and no precipitation fell. Wheat was in harvesting stage in eastern, southern and some parts of south-eastern provinces of the country while it was in maturity stages in northern and north-eastern provinces. Because of the abnormally hot and dry weather, most rain-fed wheat and wild grasses dried out.

In Kazakhstan, the weather was variable and unstable, with intermittent sunny and rainy days. In the South, the

weather was changeable, with sunny days followed by cloudy days with rains. The average daily air temperature ranged from 18.4 to 36.0 °C, with minimum of 12.1 °C at night and maximum of 46.0 °C. Relative air humidity ranged from 13 to 97% and precipitation fell in the range from 1.0 to 57.0 mm. North-easterly and north westerly winds prevailed at a speed of 1-10 m/s and up to 28 m/s in gusts. In the East, the weather was warm with sunny and cloudy days. The average daily temperature was of 19.5 °C with minimum of 9.0 °C and maximum of 32.0 °C. Relative humidity was of 65.5% and precipitation was of 21.5 mm. South-easterly and north westerly winds prevailed at a speed of 1.7 m/s and up to 17 m/s in gusts. In the West, the weather was variable with sunny and cloudy days. The average daily temperature ranged from 19.3 to 39.0 °C, with minimum of 12.3 °C and maximum of 45.0 °C. Relative humidity ranged from 15 to 88% and precipitation ranged from 10.0 to 49.8 mm. South-easterly and north-westerly winds prevailed at a speed of 1.0-7.0 m/s and up to 12 m/s in gusts. In the North, the weather was variable and rainy with warm and cloudy days and gusty winds. The average daily temperature ranged from 10.5°C to 27.0 °C, with minimum of 7.0 °C and maximum of 34.6 °C. Relative humidity ranged from 35 to 91% and precipitations ranged from 1.0 to 95.3 mm. North-easterly and north-westerly winds prevailed at a speed of 1.0-6.0 m/s and up to 15 m/s in gusts.

In Kyrgyzstan, the weather was dry with temperatures close to or slightly (by 1 °C) above the climatic norm. They ranged from 13/18 °C to 20/25 °C at night and from 29/34 °C to 35/37 °C during the day, with maximums reaching 38/40 °C. In the Chui valley, the average monthly temperature ranged from 24 to 26 °C, in the Talas valley from 21 to 23 °C and in the Naryn valley from 17 to 19 °C. Overall precipitation was lower than the climatic norm in the valleys, ranging from 18 to 25°mm in the Chui valley, from 16 to 20°mm in the Talas valley and from 24 to 41°mm in the Naryn valley. In the foothills of the Talas valley, however, the precipitation ranged from 50 to 62°mm and were close to the climatic norm. Vegetation was dry with a 2-4 cm height and a medium density; it consisted mostly of a grasses/*Artemisia* spp mixture.



In the Russian Federation, the weather was warm and dry; in some areas such as North Caucasus Federal District (FD), the average temperature was 26.3 °C, which is 6.8 °C above the climatic norm. In the Southern FD, average temperature was of 27.9 °C. In the Volga FD, average temperature was of 24.0 °C; in both FDs the precipitation amount was close to the norm. In the Ural FD, average temperature was of 21.7 °C and there were rains and thunderstorms. In the Siberian FD, the average temperature was of 20.0 °C and little rain fell. In the Far East FD, the average temperature was of 23.0 °C and there were rain showers with thunderstorms.

In Tajikistan, the month of June was warmer than in 2017 by 3-5 °C, with minimum of 32 °C and maximum of 45 °C in the foothills. In Khatlon valleys, temperatures exceeded 45 °C while they ranged from 35 to 42 °C in Sughd and Districts of Republican Subordination (DRS). Usual agricultural works continued in cotton plantations. Across the entire Republic, mass harvest of vegetable and fruits was completed and the second campaign of crop sowing started. According to meteorological forecast, August should be very hot with temperatures exceeding 42 °C in Khatlon and 39 °C in Sughd.

In Uzbekistan, daily temperatures were extremely high reaching 56 °C during the day in the deserts. A severe drought continued everywhere, and pasture vegetation completely disappeared.

Area treated in July 2018

Afghanistan	5 496 ha
Azerbaijan	250 ha
Kazakhstan	252 790 ha
Kyrgyzstan	16 575 ha
Russia	154 790 ha
Tajikistan	4 917 ha
Uzbekistan	24 000 ha
Total	458 818 ha

Locust situation and forecast

(see also summary on page 1)

CAUCASUS

Armenia

• SITUATION

Based on the late report for June, limited Italian Locust (CIT) infestations with densities from 4 to 7 individuals per m² were found on 540 ha in Ararat district.

• FORECAST

During the forecast period, the CIT adults on a limited area in Ararat district will probably start mating and egg-laying.

Azerbaijan

• SITUATION

Hot weather was favourable for DMA mass oviposition in Kudrin plains and Eldar steppe where treatments took place against DMA adults on 250 ha.

• FORECAST

DMA egg-laying will finish in August and its natural cycle will complete.

Georgia

• SITUATION

No report was received.

• FORECAST

Based on previous years' information, CIT egg-laying should continue in the beginning of the forecast period, followed by the natural die-off of the populations.

CENTRAL ASIA

Afghanistan

• SITUATION

Field observations showed that, due to severe drought, some DMA hopper populations succumbed before fledging and those which reached adulthood were weak, with lower capacity to migrate, mate and lay eggs.

Anti-locust campaign ended on 23 June. Benzoyl-urea and pyrethroid insecticides in Ultra-Low Volume (ULV)



and Emulsifiable Concentrate (EC) formulations were used in the treatments.

• FORECAST

DMA eggs will remain in the soil until hatching next spring. It is expected that the infested areas will decrease in 2019.

Kazakhstan

• SITUATION

DMA surveys during mating and egg-laying took place in July in South-Kazakhstan and Zhambyl provinces. They were carried out on 2 127 700 ha of which 365 000 ha (17%) were infested, including 48 700 ha above the economical threshold (ET), i.e. more than 5 adults/m². Treatments against DMA were finished in June.

CIT hopper monitoring was carried out on 11 550 900 ha throughout the country. In the southern provinces, 2nd to 5th instar hoppers as well as imagoes were present while hoppers only, from 1st to 4th instars, were observed in the western, central, northern and eastern provinces. The infested area was 1 713 700 ha (15%) including 928 800 ha (8%) above ET. The most infested provinces were West Kazakhstan (176 700 ha infested above ET), Aktobe (174 600 ha), Almaty (113 900 ha) and Karaganda 102 100 ha). An area of 198 800 ha was treated against CIT.

LMI hopper monitoring was carried out on an area of 3 011 600 ha out of which 325 200 ha were infested (11%) including 201 400 ha above ET (7%). Populations consisted of late-instar hoppers and adults. The largest areas infested above ET were found in Almaty (88 900 ha) and Kyzylorda (78 800 ha) provinces. An area of 53 700 ha was treated against LMI.

• FORECAST

CIT fledging followed by mating and egg-laying will continue. LMI mating and egg-laying will take place.

Kyrgyzstan

• SITUATION

DMA natural cycle ended and no surveys or treatments were conducted.

CIT hopper surveys were carried out on 12 235 ha of which 9 195 ha (75%) were infested at an average density of 5-35 hoppers/m², including 5 645 ha in Naryn province where a mass CIT outbreak continued with infestations occurring in a close proximity to crop areas; last time CIT needed control in that province was in 2002-2204. In Chui province the infested area (2 150 ha) was reported in one district (Jayil) only in 2018 and was three to four times higher than multiannual average. In Talas province, all CIT infestations (1 400 ha) also occurred in one district (Bakai-Ata) where they threatened bean crops. It is to be noted that high CIT densities have not been observed in this district prior to 2017. An area of 16 575 ha was treated, of which 13 025 ha in Naryn, 2 150 ha in Chui and 1 400 ha in Talas provinces. By the 5 August, all treatments against CIT were finished.

• FORECAST

DMA egg-bed surveys will start in autumn. CIT fledging and breeding will occur. Egg-bed surveys will start in autumn.

Russian Federation

• SITUATION

During surveys, locust hoppers were found on 568 370 ha, including 425 340 ha (75%) above the ET. Adult locust infestations were found on 190 790 ha including 55 130 ha (29%) above ET. In addition, non-swarming grasshopper nymphs were found on 905 050 ha, including 148 940 ha (16%) above ET. Grasshopper adults infested 199 040 ha, including 6 270 ha (3%) above ET.

More specifically, in the Central FD, an area of 50 ha was infested by locust hoppers at a density of 0.14-2 hoppers/m² while an area of 136 400 ha was infested by grasshopper nymphs at a density of 0.38-1.3 hoppers/m². No locust adults were observed while grasshopper adult population was recorded on 74 800 ha at a density of 0.1-1.5 adults/m². In the South



FD, locust hoppers infested 120 590 ha at a density ranging from 24 to 350 hoppers/m². Adult locust infestations were found on 54 540 ha with densities ranging from 12 to 480 adults/m². Grasshopper nymphs were also found on 67 380 ha at a density ranging from 1.34 to 15 hoppers/m². Adult grasshoppers infested 11 330 ha with densities between 0.65 and 15 adults/m². In North Caucasus FD, locust hopper populations were recorded on 434 320 ha at a density of 73-1 000 hoppers/m². Adult locusts infested 133 390 ha with densities ranging from 33 to 150 adults/m². Grasshopper nymphs were found on 154 580 ha at a density of 4.75-45 hoppers/m². Adult grasshopper infestations were recorded on 55 500 ha with density ranging from 2.9 to 15 adults/m². In the Volga FD, locust hoppers were observed on 9 420 ha at a density of 0.31-3 hoppers/m². Adult locust infestations were found on 2 040 ha with densities ranging from 0.8 to 13 adults/m². Nymphs of grasshoppers were found on 143 460 ha at a density of 0.81-8 hoppers/m². Adult grasshopper infestations were recorded on 23 670 ha with density ranging from 0.69 to 7 adults/m². In the Ural FD, no locust hoppers or adults were recorded. Grasshopper nymphs were found on 118 220 ha at a density of 2.28-28 hoppers/m². Adult grasshopper infestations were recorded on 4 000 ha with density ranging from 1.12 to 3 adults/m². In the Siberian FD, locust hoppers were recorded on 3 980 ha at a density of 0.5-2 hoppers/m². Adult locust infestations were found on 810 ha with densities ranging from 0.48 to 2 adults/m². Grasshopper nymphs were present on 384 010 ha at a density of 6.16-186 hoppers/m². Adult grasshoppers were found on 90 870 ha at a density 2.75-45 adults/m². In the Far East FD, no locust hoppers or adults were observed but grasshopper nymphs were found on 23 770 ha at a density of 0.97-20 hoppers/m². Adult grasshopper infestations were recorded on 6 190 ha with density ranging from 1.6 to 8.4 adults/m².

An area of 154 790 ha was treated in South and North Caucasus, Volga, Ural and Siberian FDs.

• **FORECAST**

Locust and grasshoppers will lay eggs and take migratory flights during the forecast period.

Tajikistan

• **SITUATION**

DMA life cycle ended. Surveys to monitor adult group movements, mating and egg-laying were completed.

CIT egg-laying probably continued locally. In June, an area of 4 917 ha was treated against locusts.

• **FORECAST**

CIT egg-laying will continue followed by the natural disappearance.

Turkmenistan

• **SITUATION**

No report was received. In view of the situation in the neighbouring countries, DMA life cycle ended.

• **FORECAST**

DMA eggs will remain in the soil until hatching next spring.

Uzbekistan

• **SITUATION**

DMA life cycle ended and no treatments were carried out.

CIT mating and egg-laying continued in all areas as well as control operations, which were carried out on about 20 000 ha. Scattered CIT populations were present along irrigation canals and in fallows in Karakalpakstan; however, the pest density is low and there is no immediate threat to crops.

LMI hopper development continued near the Aral Sea in the areas with recently receded water; in other areas breeding and egg-laying started. Control operation, which took place on about 4 000 ha in Karakalpakstan, had to be finished because remaining infestations are remote and very difficult to access.

In July control operations were carried out on about 24 000 ha, mostly in central (CIT) and northern (LMI) provinces.



• **FORECAST**

CIT mating and egg-laying will continue in the North, followed by the natural disappearance. LMI breeding and egg-laying are expected to take place during the forecast period in the Aral Sea zone.

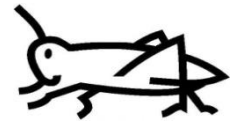
Announcements

Locust warning levels. A color-coded scheme indicates 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.

July 2018 events and activities

- **Training-of-Trainers on locust management:** last briefing session on locust spraying and risk reduction, including ASDC, delivered to the benefit of 15 Locust Experts by the Master-Trainers, on 4-5 July in Djumgal (Naryn), Kyrgyzstan.



- **Human Health and Environmental issues:**
 - Kyrgyzstan: sixth and last mission of the Human Health and Environmental Monitoring Team carried out on 9-13 July in Naryn and Ak-Talin districts (Naryn);
 - Tajikistan: second set of missions of the Human Health and Environmental Monitoring Team conducted on 2-4 July in Sughd and on 5-7 July in DRS and third set of missions carried out on 24-26 July in Vakhsh valley and 27-28 July in Danghara (Khatlon) and on 29-31 July in DRS.
- **Practical Guidelines on pesticide risk reduction for locust control in CCA:** following peer review of the English version, translations launched into Dari, Kyrgyz, Russian and Tajik.
- **2018 Technical Workshop on locusts in CCA, 19-23 November, Bishkek, Kyrgyzstan:** arrangements started.
- **Procurement of locust survey and control equipment:** process ongoing for last remaining items.
- **Resource mobilization:** ongoing process.

Forthcoming events and activities in August 2018

- **Human Health and Environmental issues:** in Tajikistan, out of the third set, last mission of the Human Health and Environmental Monitoring Team to be carried out in Sughd, in early August.
- **Practical Guidelines on pesticide risk reduction for locust control in CCA:** translations ongoing and illustrations under preparation.
- **2018 Technical Workshop on locusts in CCA:** FAO official letters of invitation to be issued.
- **Procurement of locust survey and control equipment:** ongoing process.
- **Resource mobilization:** ongoing process.

