



Locust Watch

Locusts in Caucasus and Central Asia

LOCUST BULLETIN No. 39



FAO - Plant Production and Protection Division (AGP)

18 September 2015

Situation level: THREAT in the Russian Federation due to the Italian (CIT) and the Asian Migratory (LMI) locusts

Situation level - CAUTION in Georgia (CIT) and Kazakhstan (CIT & LMI)

Situation level: CALM elsewhere or for the other species

General Situation during August 2015 Forecast until mid-October 2015

In August, Moroccan Locust (DMA) life cycle came to an end in Central Asian countries as well as in Azerbaijan. Italian Locust (CIT) mating occurred in Armenia while adults were disappearing in Kyrgyzstan, Tajikistan and Uzbekistan. CIT egg-laying was in progress in Georgia as well as in Kazakhstan and Russia, where flights were reported. Dense adult groups of Asian Migratory Locust (LMI) formed in Kazakhstan and Russia. Locust control operations were completed in all Caucasian and Central Asian countries, where more than 4.9 million hectares were treated during the 2015 campaign.

Caucasus. CIT fledging followed by mating occurred in Armenia where no control operations were needed, while egg-laying came to an end in Georgia where a worrying situation persisted leading to the treatment of almost 3 000 ha in the eastern and southern parts of the country. In Azerbaijan, DMA life cycle was completed. The control campaign came to an end in all three countries; as a whole, almost 58 000 ha have

been treated during 2015, out of which 58% in Georgia and 36% in Azerbaijan.

Central Asia. DMA life cycle came to an end in all Central Asian countries and egg-bed surveys were in progress in most of them. CIT natural disappearance was in progress in Kyrgyzstan, Tajikistan and Uzbekistan. The situation was serious in Kazakhstan and in Russia, where egg-laying was in progress; indeed CIT flights were reported in Kazakhstan, where up to 43% of the populations were gregarious in West-Kazakhstan, as well as in Russia at densities up to 80 adults/m² in Ural and Volga Federal Districts (FDs). LMI egg-laying started in Kazakhstan; in West-Kazakhstan, numerous flights were observed and up to 90% of the LMI populations were gregarious. LMI flights were also reported in Russia at a density up to 550 adults/m² in the south-west. Control operations came to an end in all countries, where almost 4.9 million were treated in 2015, of which 69% located in Kazakhstan and 16% in Russia.

Weather and Ecological Conditions in August 2015

In **Caucasus and Central Asia**, the weather was generally warm to hot and dry except in **Kazakhstan and Russia** where some rains fell locally.

In **Caucasus**, the weather was generally hot and dry.

In **Armenia**, the weather was very hot and dry during the first two decades; during the third decade, temperatures decreased by 4-6°C and rain, sometimes with hail, fell. The average temperature was within the norm, ranging from 12°C to 41/42°C in the lowlands, from 6/7°C to 37/39°C at foothills and from 4/5°C to 35/36°C in mountainous areas, quite similar to the previous month. In surveyed areas, the natural vegetation was mostly drying out and had a medium cover. Grain, fruit and vegetable harvesting continued.

In **Azerbaijan**, the weather was very hot, resulting in massive egg-laying and death of DMA adults. Day temperatures were of 42/44°C with peaks up to 45°C. No rain fell. Natural vegetation and crops were dry.

In **Georgia**, the temperature ranged from 15°C to 41°C; no rain fell. The natural vegetation had a medium to dense cover but was dry.

In **Central Asia**, the weather was generally warm to hot and dry, except in **Kazakhstan and Russia**, where some rains fell locally.

In **Afghanistan**, the weather was hot during the day and cool at night, and dry. Wheat crop was harvested and yields were good; rice crop was in vegetative stage in Kunduz, Baghlan, Khost and Herat provinces.

In **Kazakhstan**, the weather was generally variable with a slight decrease in temperatures and some rains. In the South, the weather was variable with some rains. Average temperature was of 14.8°C with night minimum of 9.7°C and maximum up to 45°C during the day. Relative humidity varied from 13 to 69%. South-easterly, north-westerly and westerly winds prevailed at a speed of 1-10 m/s reaching 17-19 m/s in gusts. In the East, the weather was variable with some rains.



Average temperature was of 19.4°C with minimum of 6°C and maximum of 36°C. Average relative humidity was of 53.8%. North-westerly and south-easterly winds prevailed at a speed of up to 10 m/s reaching 28-30 m/s in gusts. In the West, the weather was clear and sunny with some rains ranging from 3.9 to 15.6 mm. Average temperature ranged from 12.1 to 36°C with minimum of 7.8°C and maximum of 41°C. The relative humidity varied from 20 to 95%. The winds were erratic, blowing from north-west, north-east and south-west, at a speed ranging from 0.1 to 6 m/s and up to 16 m/s in gusts. In the North, the weather was variable with some rains ranging from 13 to 35 mm. The average day temperature varied from 6.5 to 26.5°C, with minimum of 2.9°C and maximum of 41°C. The relative humidity ranged from 20 to 94%. Northerly, north-westerly and south-westerly winds prevailed at a speed ranging from 1 to 13 m/s and up to 17.3 m/s in gusts.

In **Kyrgyzstan**, the weather was dry with temperatures within the norm. In the South, the average monthly temperature was normal, ranging from 16 to 20°C in lowlands and from 10 to 12°C at foothills, with minimum of 3°C and maximum of 21°C. In the North, the average monthly temperature was of 14-18°C, ranging from 10-13°C at night to 17-20°C during the day. Overall, the relative humidity ranged from 45 to 50%. The natural vegetation was dry and sparse with a height ranging from 1 to 4 cm.

In the **Russian Federation**, weather was generally warm with some local rains. In the southern regions of the Central Federal District (FD), the weather was warm to hot and mostly dry with some uneven and short rains. Average temperatures ranged from 8 to 37°C. In North Caucasian and Southern FDs, the weather was hot (average temperatures reaching 25/35°C) with showers, sometimes with hail. In the Volga FD, the weather was variable with some local

low rains; the temperatures ranged from 12/14°C at night to 21/22°C during the day. In the Siberian and Ural FDs, the weather was warm to hot during the first half of the month and so cold during the second half that local morning frost occurred. The average temperature was of 8/21°C. Some erratic rains fell.

In Tajikistan, the weather was still hot, with average day temperatures of 41/48°C in Khatlon, 31/36°C in RRS and 30/34°C in Sughd. Overall, the temperature decreased and was a bit lower than usual at that period of the year, which resulted in the normal development of crops. Harvesting of vegetable and fodder continued and cotton harvest started.

In Uzbekistan, the temperatures ranged from 25/28°C at night to 35/39°C during the day, decreasing by up to 8°C as compared to July. Natural vegetation was dry and the ground was bare.

Area treated in July 2015

Georgia	2 825 ha
Kazakhstan	13 000 ha
Russia	129 940 ha

Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

• SITUATION

In August, out of 12 000 ha surveyed by the experts from the State Phytosanitary Service, locusts and grasshoppers were observed on 7 000 ha. Italian Locust (CIT) was widespread and grouped populations were observed in three provinces but hopper density exceeded the economical threshold in Aragatsotn only. Mass fledging occurred during the month, followed by mating in lowlands during the second half of the month. No control operations were needed against locusts and grasshoppers.

During the campaign, a total of 57 000 ha were surveyed, locust and grasshopper populations were



found on 36 000 ha and 3 000 ha were treated.

• FORECAST

CIT mating will continue and egg-laying followed by natural disappearance will occur during the forecast period. No further development is expected.

Azerbaijan

• SITUATION

Moroccan Locust (DMA) egg-laying came to an end in August and adult populations disappeared both in the West (Djeranchel and Eldar steppes) and in the South-east (Garasu and Padar plains).

As a whole, more than 21 000 ha were treated during the 2015 campaign.

• FORECAST

No further DMA development is expected. Autumn egg-bed/pod surveys will be carried out during the forecast period.

Georgia

• SITUATION

As per survey operations carried out on 110 000 ha, only CIT adult populations were present in August at a maximum density was of 15 adults/m²; they matured, mated and laid eggs. Egg-laying was completed at the end of the month. Ground control operations using two pyrethroids (alpha-cypermethrin and deltamethrin) and one organophosphate (chlorpyrifos) continued in Kakheti (2 565 ha ha) and Samtskhe-Javakheti (260 ha). The most infested districts were Signani (1 105 ha treated) and Dedoplistskaro (1 030 ha treated) in Kakheti region. The locust campaign came to an end on 20 August. As a whole, 33 608 ha were treated during that campaign.

• FORECAST

Remaining CIT adults will disappear. No further development is expected.

CENTRAL ASIA

Afghanistan

• SITUATION

In August, control teams carried out the mapping of CIT and DMA infested areas. It has been completed so far in five provinces, where infested areas covered a total of 120 000 ha in Badakhshan (5 000 ha), Baghlan (35 000 ha), Balkh (20 000 ha), Faryab (10 000 ha) and Samangan (50 000 ha). Based on these preliminary results, it was anticipated that infested areas would be more important in 2016 in the northern and north-eastern provinces. Consequently, procurement of pesticides started to cope with the expected serious locust situation

• FORECAST

No further locust development is expected this year.

Kazakhstan

• SITUATION

In South-Kazakhstan and Zhambyl oblasts, DMA egg-bed surveys started on an area of 1 850 ha. Egg-pods were found on 620 ha including at a density of more than 5 egg-pods/m² on 90 ha; 0.6 to 2% of the egg-pods were damaged.

CIT egg-laying and natural disappearance of adults came to an end in the South (Kyzylorda, Almaty and Zhambyl provinces). In the West (Aktobe), egg-laying continued; the number of egg-pods reached 100/m² and the number of eggs per pod ranged from 14 to 40. Mass disappearance was noted by the end of the month. In West-Kazakhstan, natural extinction started on 4-8 August and mass disappearance by mid-month in the southern part while, in the northern part, egg-laying started on 3 August followed by mass oviposition on 8-11 August and beginning of disappearance on 17 August. Morphometric measurements indicated that gregarious phase ranged from 3 to 43%, *transiens* from 7 to 66% and solitary from 24 to 87% within the observed populations. In East-Kazakhstan and in the central province of Karagandy, egg-laying and natural disappearance took



place. In the North (Akmola), mating and egg-laying continued and natural disappearance started; number of eggs per pod ranged from 22 to 42; in Pavlodar, movements of adult groups over 6-10 km towards the north-west were observed during a shorter than usual laying period, in early August. An earlier than usual death of CIT was also observed, mainly due to a fungal disease. Morphometric measurements indicated that the locust populations were in solitary and *transiens* phase. As a whole, CIT mating and egg-laying surveys were carried out on 13.3 million ha. CIT populations were found on almost 2.7 million ha including at a density of more than 5 individuals/m² on almost 1.3 million ha. No control operations were carried out against CIT in August.

Last Migratory Locust (LMI) fledging occurred in early August and mating and egg-laying started Almaty, Zhambyl, West-Kazakhstan, Aktobe and East-Kazakhstan provinces but not yet in Akmola, where fledging was completed by mid-month only. In West-Kazakhstan, numerous flights were observed from 4th August; mass mating occurred on 4-10 August and egg-laying on 4-19 August. Morphometric measurements indicated that gregarious phase ranged from 47 to 90%, *transiens* from 5 to 34.5% and solitary from 5 to 100% within the observed populations. Out of the 2.99 million ha surveyed for monitoring LMI mating and egg-laying (including almost 2.7 million ha in August), adult populations were found on 560 100 ha, including at a density exceeding 1 000 imagos/ha on almost 142 000 ha. Hopper control operations were completed in early August; a total area of 384 900 ha was treated against LMI hoppers in 2015, of which 13 000 ha in August.

• FORECAST

No further locust development is expected. Remaining DMA populations will disappear. CIT life cycle will come to an end in the six provinces where

adult populations were still present in August. LMI egg-laying will come to an end and adults will disappear in the six infested provinces. Autumn egg-pod survey will take place in September.

Kyrgyzstan

• SITUATION

No DMA or CIT grouped populations were observed in August and no control operations were carried out.

• FORECAST

No further DMA or CIT development is expected. Autumn egg-bed/pod surveys will be carried out in September and October.

Russian Federation

• SITUATION

In August, surveys carried out by the staff of the Russian Agricultural Center reported that all locust species were in adult stage, egg-laying was in progress and natural disappearance had started.

DMA mass mating and egg-laying occurred and natural disappearance continued in North Caucasus FD, where density ranged from 5 to 19 adults/m².

CIT migratory flights were observed in the Volga and Ural FDs at average densities of 1.9-70 adults/m² and 5-80 adults/m² respectively. CIT was present at lower densities in four other FDs, namely Central (0.6-1 adult/m²), Southern (1-15 adults/m²), North Caucasian (4.4-26 adults/m²) and Siberian (1.1-20 adults/m²) FDs. At the end of the month, CIT adults were concentrated in laying sites.

The hot and dry conditions, which prevailed in the southern regions of the Russian Federation, favored mass migration of LMI from its traditional habitats in natural reserves to cropping areas in the North Caucasian (Republic of Dagestan and Stavropol krai) and Southern (Krasnodar krai, Astrakhan and Rostov regions and Republic of Kalmykia) FDs. The average densities were respectively of 6.2-200 adults/m² and 15-550 adults/m² in that two FDs.

Grasshoppers were also reported in six FDs (Central, Southern, North Caucasian, Volga, Ural and



Siberian) at densities ranging from 2 to 95 adults/m², with the highest densities in Siberian FD.

During the 2015 campaign, 790 720 ha were treated, including 129 940 ha in August.

Grasshoppers were also reported in four FDs (Southern, North Caucasian, Ural and Volga) at densities ranging from 1.5 to 171 hoppers/m² and 2 to 67 adults/m², with the highest densities in Volga FD.

Since the beginning of the spring/summer surveys, hopper and adult infestations of locusts and grasshoppers were identified on a total of almost 3 million ha of which 660 780 ha were treated, including 264 180 ha in July.

• FORECAST

During the forecast period, CIT and LMI egg-laying will continue followed by natural disappearance.

Tajikistan

• SITUATION

In August, the staff from SUE "Locust control" was mainly involved in the identification of the egg-laying sites throughout the country. As of 31 August, this summer survey had covered 74 545 ha, of which 39 177 ha in Sughd, 25 898 ha in Khatlon and 9 470 ha in RRS. Preliminary analysis of the related results together with data on locust flights indicated that infested areas should not increase in 2016. Other preparatory activities for the 2016 campaign were in progress. Anti-locust activities were reported through media.

• FORECAST

No further locust developments will occur in 2015. Collection and analysis of all campaign data and identification of egg-laying sites will continue in September.



Turkmenistan

• SITUATION

No bulletin was received for the 6th consecutive month.

• FORECAST

No further development is expected this year.

Uzbekistan

• SITUATION

No survey or control operations were carried out in August. As per revised data, a total area of 390 500 ha was treated during the 2015 anti-locust campaign.

• FORECAST

No further development is expected in 2015.

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 2015

- **Forthcoming workshops** on locust contingency plans (21-23 October 2015) and Annual Technical Workshop on Locusts (26-30 October 2015), Pushkin, Russian Federation: nominations received from most countries; arrangements in progress.
- **Fellowships on locust management:** arrangements in progress with hosting institutions to organize fellowships during the 2015/2016 academic year.
- **Pesticides and spraying:**
 - Report of the tenth meeting of the Pesticide Referee Group (PRG), held in Tunisia in December 2014, translated in Russian and available on website “Locust Watch in CCA”.
 - Video on Ultra-Low Volume (ULV) spraying technique: script prepared in liaison with cameraman and FAO Consultant, ULV Spraying Expert.
- **Human Health and Environmental aspects:**
 - National training on "Mitigating and monitoring impact of locust control operations on human health and the environment" delivered to 14 Locust Experts on 24-28 August 2015 in Khodjickent (Tashkent province), Uzbekistan, by Mr Van der Valk, FAO International consultant, Environmental Expert.
 - E-Committee on the management of empty pesticide containers used for locust control: terms of reference prepared.

Forthcoming events and activities in September 2015

- **Forthcoming workshops**
 - Workshop on locust contingency plans (21-23 October 2015) and Annual Technical

Workshop on Locusts (26-30 October 2015), Pushkin, Russian Federation: arrangements in progress, including visa issues.

- Stakeholder Workshop on the procurement of pesticides for locust control to be held on 2-3 September, at FAO Headquarters, Rome, Italy, with the participation of two locust experts, one from Tajikistan and one from Uzbekistan.
- **Fellowships on locust management:** arrangements underway with the hosting institutions in Kazakhstan and Kyrgyzstan
- **Locust Geographical Information System (GIS) in CCA:** Letter of Agreement with relevant institute for GIS development under finalization.
- **Pesticides and spraying:** shootings for the video on Ultra-low Volume spraying will be made in Morocco during the second decade of September.
- **Human Health and Environmental aspects:** preparation in progress concerning the E-Committee on the management of empty pesticide containers used for locust control.
- **Resource mobilization:** arrangements underway for the signature ceremony of the three-year project to the benefit of Afghanistan, Kyrgyzstan and Tajikistan, possibly in October. Preparatory activities in progress regarding its implementation, in particular procurement of equipment and recruitment of project staff.



