



LOCUST BULLETIN No. 38



FAO - Plant Production and Protection Division (AGP)

18 August 2015

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

Situation level - CAUTION in Georgia (CIT)

Situation level: CALM elsewhere or for the other species

General Situation during July 2015 Forecast until mid-September 2015

In July, Moroccan Locust (DMA) adults only were present in Central Asian countries as well as in Azerbaijan. Limited control operations were carried out (on less than 10 000 ha) and egg-laying surveys were in progress. Italian Locust (CIT) hopper development was in progress in Armenia while fledging occurred almost everywhere in Georgia, Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Uzbekistan. The situation continued to be considered as serious in Georgia, Kazakhstan and Russia. Asian Migratory Locust (LMI) fledged in Kazakhstan, Russia and Uzbekistan; in Russia, an outbreak developed and adults formed swarms, some of them reaching Azerbaijan in mid-July, when strong northerly winds blew. Control operations against the three locust pests and against grasshoppers continued in all CCA countries, where more than 1.14 million hectares have been treated. Since the beginning of the 2015 anti-locust campaign, locust infestations have been controlled on more than 4.8 million ha in Caucasus and Central Asia.

Caucasus. CIT hopper development was in progress in Armenia, where limited control operations were carried out by farmers. In Azerbaijan, DMA adult groups but also LMI swarms, the latter arriving from North Caucasus, were treated on almost 8 400 ha. In Georgia, a serious CIT situation persisted in the eastern and southern parts of the country, where 13 500 ha were treated, including by air. As a whole, a total of about 22 000 ha were treated in Caucasus in July.

Central Asia. DMA life cycle was coming to an end in all Central Asian countries and egg-laying surveys were in progress in most of them. CIT fledging occurred in Kazakhstan (except in the northern part), Kyrgyzstan, Russia, Tajikistan and Uzbekistan. LMI fledging also occurred in Kazakhstan and Uzbekistan. This was also the case in Russia where a LMI outbreak developed in the south-west. Unfortunately, the outbreak could not be stopped before the swarms reached the crops; indeed, traditional locust habitats correspond to protected areas where control operations are prohibited. Control operations continued in July in these countries as well as in Afghanistan (at a limited scale), treating around 1.1 million hectares, i.e. less than half the surface treated

during the previous month, of which 75% located in Kazakhstan and 24% in Russia.

Weather and Ecological Conditions in July 2015

In Caucasus and Central Asia, the weather was generally hot and dry except in Kazakhstan and Russia where torrential rains were reported.

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

In Armenia, the weather was mostly hot throughout the country; some rain fell at foothills and in mountainous areas where the average relative humidity ranged from 60 to 70%, while it did not exceed 60% in low-lying areas. The average temperature was within the norm, ranging from 16/18°C to 40/41°C in the lowlands, from 12/15°C to 38/39°C at foothills and from 6/11°C to 34/36°C in mountainous areas, representing an increase of 1 to 10°C as compared to the previous month. In surveyed areas, the natural vegetation was mostly green with a medium cover. Mass fruit harvesting continued in lowlands.

In Azerbaijan, the weather was mostly warm; prevailing hot conditions favored the quick development of DMA adults. Day temperatures were of 38/40°C with peaks up to 42/44°C. No rain fell. South-easterly and north-westerly winds prevailed at a speed ranging from 3 to 5.7 m/s reaching 18/20 m/s in gusts. Natural vegetation was sparse and dry in all traditional locust habitats, with a low cover. Agricultural crops were mature and harvested.

In Georgia, the temperature ranged from 23°C to 40°C; no rain fell. The natural vegetation had a medium to dense cover but was dry.

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

In Afghanistan, the weather was generally hot and no rain fell. In Badakhshan, the average temperature was of 36°C whereas in Balkh, it ranged from 23.8°C to 46.2°C (the highest temperatures recorded) along with unusually



dry conditions. Cereal harvest has been completed in the north and was underway in the northeast; the planting of the second crops started where the winter wheat and crop harvests have been completed.

In Kazakhstan, the weather was generally warm with little to torrential rains. In the South, the weather was variable with clear, sunny and cloudy days, with little rains. Average temperature was of 24.5°C with night minimum of 12°C and maximum up to 45°C during the day. Relative humidity varied from 24 to 72%. North-, south- and easterly winds prevailed at a speed of 1-13 m/s. In the East, the weather was variable with high daily temperatures and storms, sometimes with hail. Average temperature was of 20.7°C with minimum of 10°C and maximum of 39°C. Average relative humidity ranged from 34 to 63%. South-westerly and south-easterly winds prevailed at a speed of 1-15 m/s reaching 25 m/s in gusts. In the West, the weather was clear and sunny with some rains amounting 22.3 mm (which is below the long-term data by more than 15 mm). Average temperature was of 22.9°C (i.e. slightly above the normal) with minimum of 10.1°C and maximum of 35.8°C; high temperature range characterized that month. The relative humidity varied from 32 to 80%. In the North, the weather was moderately warm with heavy to torrential rains (including thunderstorms with hail) during the 1st and 3rd decades (monthly rainfall of 114 mm). Morning dew and fog were reported in some places. The average day temperature was of 19.5°C (higher than normal by 1°C), with minimum of 4.8°C and maximum of 43.1°C. The relative humidity ranged from 43 to 90%. Northerly, south-westerly and north-westerly winds prevailed.

In Kyrgyzstan, the weather was hot, with temperatures of 1-2°C above normal and some rains (monthly amounts of 52-56 mm in the South and 42-48 mm in the North). In the South, the average monthly temperature was of 27-29°C, ranging from 18-23°C at night to 32-

37°C during the day (and up to 38-45°C during the 2nd fortnight). The monthly rainfall ranging from 9 to 47 mm was below the norm. In the North, the average monthly temperature was of 17-27°C, ranging from 17-22°C at night to 32-37°C during the day (and up to 38-42°C during the 2nd fortnight). The natural vegetation was dry, with a medium cover and a height ranging from 2 to 5 cm.

In the Russian Federation, weather was generally hot with some exceptional events. In the southern regions of the Central Federal District (FD), the weather was mostly hot and dry with some uneven rains. Average temperatures ranged from 21 to 26°C, i.e. 1-6°C above normal. Hot winds blew. In North Caucasian and Southern FDs, the weather was hot (average temperatures reaching 25/35°C) with local rains except in the northern and central regions, where the weather was warm with frequent rains. In the Volga FD, the weather was variable with a lack of rain in the south, where temperatures reached up to 35/39°C; in the north, cool and rainy weather prevailed with temperatures around 21/22°C. In the Siberian and Ural FDs, unusual hot and dry weather prevailed in early July followed by exceptional cold weather and torrential rains during the 2nd decade; moderate temperatures with little rains prevailed at the end of the month.

In Tajikistan, the weather was hot, with temperatures exceeding 42/45°C in Khatlon, 39/41°C in RRS and 38/40°C in Sughd. Strong southerly winds blew on 16-20 July.

In Uzbekistan, June was very hot with temperatures ranging from 29/30°C at night to 43/46°C during the day. Natural vegetation was totally dry and the ground was bare.



Area treated in July 2015

Afghanistan	117 ha	(incl. grasshoppers)
Armenia	3 000 ha	(June and July)
Azerbaijan	8 382 ha	
Georgia	13 502 ha	
Kazakhstan	829 860 ha	
Kyrgyzstan	1 690 ha	
Russia	264 180 ha	
Tajikistan	3 840 ha	
Uzbekistan	19 207 ha	

Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

• SITUATION

Out of 20 000 ha surveyed by the experts from the State Phytosanitary Service until 20 July, locusts and grasshoppers, at a density not exceeding the economical threshold, were observed on 11 000 ha. Scattered Italian Locust (CIT) hoppers only were present almost everywhere at very low density, except in three southwestern provinces, namely Aragatsotn, Arart and Armavir, where ground control operations were carried out by farmers on a total area of 3 000 ha in June and July. In case of need, funds and pesticides can be allocated by the Government.

• FORECAST

CIT fledging followed by mating and egg-laying will occur during the forecast period. No major CIT development is expected. The two other locust pests should not be present unless they arrive from neighboring countries.

Azerbaijan

• SITUATION

Following a survey of Moroccan Locust (DMA) adult populations, ground treatments using pyrethroids sprayed in high volume were carried out on 7 292 ha in Eldar steppe and Kudirin plain. Control operations were completed on 28th July.

As a result of a strong wind blowing from North Caucasus across the Caspian Sea on 12th July, Asian Migratory Locust (LMI) adult groups arrived in the eastern part of the country, which required chemical control operations on 1 090 ha.

• FORECAST

DMA egg-laying will come to an end and natural disappearance will occur. No further development is expected concerning LMI.

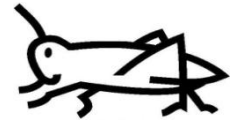
Georgia

• SITUATION

A serious CIT situation persisted in July. CIT hopper development and fledging came to an end during the 2nd decade and adult maturation and egg-laying were in progress as per results of surveys carried out on 90 000 ha. The densities reached 15 hoppers/m² within the bands and ranged from 30 000 to 150 000 imagos/ha in adult populations. Control operations continued in Kakheti (12 602 ha) and Kvemo Kartli (760 ha) regions and started in Samtskhe-Javakheti (140 ha). Such operations were mainly carried out by ground (85.6%), however aerial spraying continued in Dedoplistskaro (1920 ha by air and 5 831 ha by ground) extending to Signani (25 ha by air and 4 231 ha by ground), the two most infested municipalities (Kakheti). Two pyrethroids (alpha-cypermethrin and deltamethrin) and one organophosphate (chlorpyrifos) were used. As a whole, 13 502 ha were treated in July, of which 1 945 ha by air.

• FORECAST

CIT egg-laying will come to an end, followed by natural disappearance. In parallel, the locust campaign will be completed.



CENTRAL ASIA

Afghanistan

• SITUATION

Control operations continued in Badakhshan, where 85 ha were treated against DMA and 32 ha against grasshoppers. By the end of July, the locust campaign was also completed in that province. Other activities concerned the mapping of egg-laying adults in order to plan the 2016 locust campaign; it is expected that the locust situation will be more serious in 2016 because of suitable weather conditions for locusts occurred in 2015 and as a consequence of the security issues, which hampered survey and control operations in some areas, especially along the borders.

• FORECAST

No further locust development is expected this year. PPQD staff will carry out an inventory of available pesticides and spraying equipment in north and north-eastern provinces.

Kazakhstan

• SITUATION

In South-Kazakhstan and Zhambyl oblasts, DMA mating and egg-laying came to an end during the 1st half of July and natural disappearance continued. Adult populations were found at densities ranging from 5 to more than 10 adults/m² on 23% of the 818 000 ha surveyed. No further control operations were carried out.

CIT natural disappearance of adults started in late July in the South. In the North (Kostanay and Akmola), hopper development continued in and mass fledging occurred in mid-July, followed by the beginning of and mating and egg-laying. Elsewhere in CIT infested provinces, massive mating and egg-laying were observed. Hopper surveys were completed everywhere and covered a total area of 13.9 million ha; CIT hopper populations were found on 4 million ha including on more than 2.8 million ha at a density exceeding the economical



threshold (more than 5 hoppers/m²). In areas where mating and egg-laying started, almost 3 million ha were surveyed and adult populations were found at a density ranging from 5 to more than 10 adults/m² on 338 800 ha. As of 3 August, a total area of 2 799 800 ha had been treated against CIT hoppers, of which 741 020 ha in July.

LMI hopper development came to an end in all previously concerned provinces (namely Almaty, Zhambyl, West-Kazakhstan, Aktobe and East-Kazakhstan) except in Kostanay. Out of the 3.4 million ha surveyed since the beginning of the campaign, hoppers were found at a density exceeding the economical threshold (more than 5 hoppers/m²) on 377 400 ha. Mating and egg-laying surveys started on an area of 316 900 ha. Adult populations were found on 13 500 ha, including on 2 405 ha at density exceeding 500 adults/ha. As of 3 August, a total area of 371 900 ha had been treated against LMI hoppers, of which 88 840 ha in July.

Overall, 829 860 ha were treated in July 2015 against CIT and LMI hopper infestations.

• **FORECAST**

CIT mating and egg-laying will continue during the 1st half of August in the central, western, eastern and northern provinces, followed by natural disappearance during the second fortnight.

Formation of LMI adult swarms as well as mating and egg-laying will occur during the 1st and 2nd weeks of August in the southern, western, eastern and northern provinces, followed by natural disappearance during the 2nd fortnight.

Kyrgyzstan

• **SITUATION**

DMA surveys were carried out on 2 070 ha in Batken, of which 1 670 ha were found infested at an average density of 4-30 adults/m². CIT surveys concerned 52 ha in Chui, of which 20 ha were infested, at a density of 6-11 adults/m². Control operations were carried out on a total area of 1 690 ha of which 1 670 against DMA and 20 ha against CIT.

• **FORECAST**

DMA and CIT mating and egg-laying will continue over the forecast period. Related surveys will take place.

Russian Federation

• **SITUATION**

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

CIT and LMI hopper development was coming to an end and mass fledging occurred, resulting in swarm formation, in particular of LMI. CIT populations were observed at densities ranging from 0.6 to 1 000 hoppers/m² and 1.6 to 30 adults/m² in five FDs: Central (0.6-3 hoppers/m²; 2 adults/m²), Southern (1-50 hoppers/m²; 1-15 adults/m²), North Caucasian (4-11 hoppers/m²; 4.4-26 adults/m²), Ural (3.4-80 hoppers/m²; 1.6-30 adults/m²) and Volga (4.8-1 000 hoppers/m²; 5.3-30 adults/m²). LMI populations were observed at densities up to 1 000 individuals/m² in two FDs: Southern (10-1 000 hoppers/m²; 30-360 adults/m²) and North Caucasian (6.9-550 hoppers/m²; 34-500 adults/m²). In both FDs, hot weather and drought were initially suitable for locust development and an outbreak developed. Unfortunately, it could not be stopped before the swarms reached the crops: indeed, traditional locust habitats are located along river, lake and sea shores and in estuaries and within protected areas, where control operations are prohibited. The most infested FD was the North Caucasian, where LMI adult groups and swarms were found on almost 57 500 ha in the Republic of Dagestan and the Stavropol krai. In the Southern FD, a total of 43 450 ha were infested in the Krasnodar krai, Astrakhan and Rostov regions and Republic of Kalmykia. Damage to crops were noted in all LMI infested areas, of which almost 70% were treated (more than 70 000 ha).

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, DMA and grasshoppers will disappear while CIT and LMI swarm movements will continue and mating and egg-laying occur.

Tajikistan

• **SITUATION**

In July, control operations came to an end. The last treatments were carried out against CIT on an area of 3 840 ha in the Sughd province, close to the Kyrgyz border. End-of-summer surveys of DMA egg-pods started in Khatlon, RRS and Sughd. Preliminary results indicated that the next campaign should be similar to the current one. No damage was reported on crops thanks to the timely and efficient control operations.

• **FORECAST**

No further locust developments are expected in 2015. Analysis of the 2015 campaign and egg-laying/bed surveys will continue during the forecast period.

Turkmenistan

• **SITUATION**

No bulletin was received for the 5th consecutive month.

• **FORECAST**

No further development is expected this year.

Uzbekistan

• **SITUATION**

Control operations against LMI in Karakalpakstan and CIT in Tashkent province were completed on 10 and 20 July respectively. As of 1st August, a total of almost 400 000 ha had been treated (a slight increase as compared to the same period last year), of which 75%



against DMA (up to the end of May), 10% against CIT and 15% against LMI. A total of 19 207 ha were treated in July against, a bit more against CIT than against LMI.

• **FORECAST**

Control operations may continue against CIT and grasshoppers in Tashkent province.

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.

July 2015 events and activities

- **Forthcoming workshops**
 - Workshop on locust contingency plans (21-23 October 2015) and Annual Technical Workshop on Locusts (26-30 October 2015), Pushkin, Russian Federation: official invitation letters issued with deadline for sending nominations on 31st August.
 - Stakeholder Workshop on the procurement of pesticides for locust control (2-3 September), FAO Headquarters, Rome, Italy: arrangements in progress to organize the participation of two locust experts from CCA (Tajikistan and Uzbekistan).
- **Fellowships on locust management:** arrangements in progress with students and hosting institutions to organize fellowships during the 2015/2016 academic year.
- **Human Health and Environmental aspects:**
 - Videos on the use of biopesticides finalized.
 - Preparatory work started for video on Ultra-low Volume spraying techniques.
- **Resource mobilization:** three-year project to the benefit of Afghanistan, Kyrgyzstan and Tajikistan approved by Japan. Arrangements underway for the signature ceremony.

Forthcoming events and activities in August 2015

- **Fellowships on locust management: Fellowships on locust management:** pursuit of arrangements to organize fellowships during academic year 2015/2016.
- **Human Health and Environmental aspects:** a national Training on Mitigating and monitoring impact of locust control operations on human health and the environment will be delivered in Uzbekistan by an FAO International consultant, Environmentalist Expert, to the benefit of Locust Experts from 24 to 28 August 2015 (Khodjickent, Tashkent province).



- **Resource mobilization:** preparatory activities under way regarding the implementation of the three-year project to the benefit of Afghanistan, Kyrgyzstan and Tajikistan (in particular procurement of equipment).

