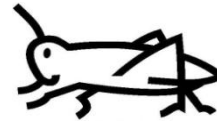




LOCUST BULLETIN No. 32



FAO - Plant Production and Protection Division (AGPM)

10 September 2014

Situation level - CAUTION in Georgia (Italian Locust, CIT) and Russia for the three locust pests

Situation level: CALM elsewhere in Afghanistan, Armenia, Azerbaijan, Georgia (Moroccan Locust, DMA), Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan

In August, the locust infestations declined in all countries as a result of the intense and large-scale control operations previously carried out mainly until the end of July and of the progressive disappearance of the remaining locust populations. Nevertheless, the situation was still worrying in Georgia and Russia, where a total of almost 46 000 hectares (ha) were treated. Control operations were also carried out in Kyrgyzstan and Armenia. Overall, control operations were carried out on a bit more than 50 000 ha in Caucasus and Central Asia (CCA) in August, an almost twentyfold decrease as compared to the previous month. The 2014 locust campaign came to an end in all CCA countries except in Russia. No further locust development is expected this year. Egg-bed surveys which started generally in August will continue in September.

Caucasus. Control operations continued against the Italian Locust (CIT) in **Georgia**, where 1 510 ha were treated, as well as to a much lesser extent in **Armenia**.

Central Asia. The locust control campaign came to an end in July or in early August in most of the Central Asian countries, where the remaining adult locust populations were progressively disappearing. Control

operations were carried out in two countries only, **Kyrgyzstan** and **Russia**. Elsewhere, egg-bed surveys were in progress and will generally continue in September.

Weather and Ecological Conditions in August 2014

Generally warm to hot weather prevailed throughout Caucasus and Central Asia. Rains fell in Armenia and Central Asia, except in Tajikistan and Uzbekistan. The natural vegetation was dry.

In **Caucasus**, weather was dry and hot except in Armenia.

In Armenia, variable weather, mostly hot and rainy, prevailed in most areas; some thunderstorms occurred. The most important rainfall (44-45 mm) was recorded in the highlands; elsewhere it was up to 10-15 mm. The average daily air temperature was generally within the norm. Temperatures ranged from 14/17°C to 38/40°C in the lowlands, from 12/16°C to 36/38°C at foothills and from 9/14°C to 33/35°C in mountainous areas, which represented an increase of 1 to 4°C compared to July. The natural vegetation was mostly dry, with a medium cover in valleys and at foothills. Agricultural work continued with mass harvesting of fruit, grain and vegetables.



In Azerbaijan, the weather was very hot and dry with no rain. Day temperatures were of 38/42°C reaching up to 42/45°C, representing an increase of 2 to 6°C compared to July. Natural vegetation was dry with a low cover and adjacent crop fields completed their maturation.

In Georgia, the weather was dry and hot with average temperatures of 35/40°C during the day and of 22/25°C at night -representing an increase of 1 to 4°C compared to July - and no rain. The wind speed was of 1-3 m/s. Mostly dry and drying natural vegetation had a medium to low cover.

In **Central Asia**, weather was generally warm and rainy, except in Tajikistan and Uzbekistan where no rains were reported.

In Kazakhstan, the weather was generally warm and rainy, with a slight decrease of temperatures compared to July. In the South, the weather was clear with some rains. Average temperatures varied from 12.2°C to 34°C with minimum of 4°C and maximum up to 45°C. Relative humidity ranged from 14 to 78%. Prevailing northerly, north-easterly and north-westerly winds had a speed of 0.2-19 m/s with gusts up to 30 m/s. In the East, the weather was variable and rainy, sometimes with hail. The average temperature ranged from 17 to 22.7°C with minimum of 6.4°C and maximum of 37°C. Relative humidity varied from 55.1 to 72.3%. Prevailing north-westerly and south-easterly winds had a speed of 0-10 m/s. In the West, the weather was clear and sunny with light rains. The average temperatures ranged from 13 to 36°C with minimum of 6.6°C and maximum of 41°C. The relative humidity varied from 22 to 85%. Variable winds had a speed of 0.2-11 m/s. In the North, the weather was variable and rainy, sometimes with hail. The average day temperatures ranged from 10.7°C to 29.5°C, with minimum of 4°C and maximum of 38.2°C. The relative humidity ranged from 15 to 99%. Variable winds had a speed of 1-22 m/s with gusts up to 27.3 m/s.

In Kyrgyzstan, the weather was hot and rainy in July with an average humidity of 55-65%. In the South, the

average temperature was of 19/28°C, ranging from 11/16°C at night to 35/38°C during the day; the amount of precipitation was of 350-380 mm. In the North, the average temperature was of 25/31°C, ranging from 18/21°C at night to 34/36°C during the day; the amount of precipitation was of 60-150 mm. The vegetation was dry with a medium cover and a height of 2-5 cm. In August, the weather was warm and rainy. In the South, the average temperature was of 14/26°C, ranging from 7/12°C at night to 23/28°C during the day; the amount of precipitation was of 210-250 mm. In the North, the average temperature was of 20/24°C, ranging from 14/19°C at night to 20/25°C during the day; the amount of precipitation was of 110-150 mm. The vegetation was dry with a low cover and a height of 2-4 cm.

In the Russian Federation, hot weather prevailed with local thunderstorms. In southern regions of Central Federal District (FD), weather was mainly hot and dry, with temperatures ranging from 21 to 36°C. In North Caucasus and Southern FDs, the weather was characterized by high temperatures and uneven heavy rains, sometimes with hail. Temperatures ranged from 25 to 38°C. The relative humidity was of 23-28%, i.e. 6/21% below normal. In the Volga FD, the weather was hot and dry with average temperature of 23.8°C. In Ural and Siberian FDs, the weather was highly variable with cool cloudy days followed by very hot and dry ones. On most days, daily temperatures ranged from 18.5 to 20.5°C, which was above normal.

In Tajikistan, the temperatures were higher by 2/4°C than in August 2013 throughout the country. This warm weather favored the development of all crops and harvest continued throughout the month.

In Uzbekistan, temperatures were of 37/39°C during the day and 20/22°C at night, which represented a slight increase of 1/2°C compared to July.

Area treated in August 2014

Armenia	local control operations
Georgia	1 510 ha
Kyrgyzstan	3 230 ha (July) 4 254 ha (August)
Russia	44 300 ha

Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

• SITUATION

The locust situation was calm in August. During surveys carried out on 56 000 ha in crops, perennial plantations, meadows, pastures and fallows, locust and grasshopper populations were observed on 36 000 ha at density generally not exceeding the economical threshold. Scattered solitary hoppers of the Italian Locust (CIT) were present in five oblasts at a maximum density ranging from 11 to 20 hoppers/m² in some places of Ararat oblast. Some limited control operations were carried out by farmers and other land users on vegetables, melons and fruit crops.

• FORECAST

Last CIT hoppers will fledge and adults will mature and lay eggs. Natural disappearance should start by mid-September. Neither important and widespread infestations of CIT nor occurrence of the two other locust pests is expected unless they arrive from neighboring countries.

Azerbaijan

• SITUATION

Dry and warm weather conditions favored Moroccan Locust (DMA) mating and laying eggs in Djeranchel and Eldar steppes as well as in Garasu and Padar plains where oviposition came to an end and adults progressively disappeared. No control operations were carried out in August. The total treated area during the 2014 locust campaign was of 52 350 ha.



• FORECAST

Remaining DMA adult populations will eventually disappear. Egg-bed surveys will be carried out in September to assess the number of egg-pods/m² and their distribution and prepare the 2015 work plan.

Georgia

• SITUATION

CIT mature adults only were reported in August and egg-laying continued throughout the month. Egg-pods at a density of 7-10/m² were observed. A total of 5 000 ha were surveyed and ground control operations were carried out on 1 510 ha in Kakheti region using Deltamethrin and Chlorpyrifos. Damage were reported on sunflowers, vineyards, cereals, cucurbitaceae, vegetables and winter pastures.

During the 2014 campaign, which was completed on 12 August, a total of 130 000 ha were surveyed and 43 760 ha were treated of which 13 298 ha (30%) against DMA and 30 462 ha against CIT. Almost 92% (40 235 ha) of the treatments were carried out in Kakheti region, of which 30 235 ha by ground and 10 000 ha by air; in Kvemo Kartli, all control operations were by ground.

• FORECAST

No further locust development is expected that year as the remaining uncontrolled CIT populations will progressively disappear.

CENTRAL ASIA

Afghanistan

• SITUATION

The locust campaign was implemented in 14 provinces on the northeastern, northwestern and central parts of the country and was completed in late July 2014. A total of 137 331 ha of DMA and grasshopper infestations were controlled. In August, an inventory of equipment and pesticide stocks was made

in order to prepare the 2015 campaign but no egg-bed survey was carried out because of insecurity.

• **FORECAST**

No further locust development is expected this year.

Kazakhstan

• **SITUATION**

Most of the CIT populations had disappeared by the end of August. In the South, natural extinction was observed at the end of the month. During mating and egg-laying, the maximum density reported was of 15 imagos/m². In the West, oviposition started the 1st week of July and disappearance of CIT adults was noted by the end of August. During egg-bed surveys carried out in pastures, hay fields and around the crops, 1 to 200 egg-pods/m² were found; the number of eggs/pod varied from 12 to 43. In the East, all CIT adults had disappeared at the end of August. During mating and egg-laying in East Kazakhstan, 51 660 ha were infested at a maximum density of 18 adults/m². In the central part of the country, in Karaganda, all adults had disappeared at the end of August. During mating and egg-laying, 529 800 ha were infested at a maximum density of 11 adults/m². In the North, on 29th August, 80% of the population was at the adult stage and 5th instar hoppers only were still present. During mating and egg-laying, which were still in progress, the adult density ranged from 0.01 to 12.5/m² while egg-pod number varied from 22 to 52/m² units. As a whole, CIT mating and egg-laying monitoring was carried out on 13 100 660 ha and 4 142 200 ha were found infested.

In the South, where LMI egg-laying was in progress, the highest adult density was observed in Kyzylorda, reaching 25 000/ha. In South-Kazakhstan, adults only were present at a density of 1 000 adults/ha; early mortality was noted. In the West, egg-laying started on 29th July in Aktobe and natural extinction was in progress in late August. In West-Kazakhstan, 120 400 ha were infested during mating and egg-laying. The analysis of the phase status showed that



20-90% of the population was gregarious, 5-34.5% *transiens* and 5-100% solitary; 90% of the gregarious population was observed in Akzhaik area. In the East, the whole population was in adult stage and natural extinction started. A total of 28 600 ha were infested at a maximum density of 1 200 adults/ha. In the North, in Akmola, 80% of the population were at the adult stage and 5th instar hoppers only were still present. Mating and egg-laying were in progress at a maximum density of 2 000 adults/ha. As of 29th August, LMI mating and egg-laying surveys had been carried out on 3 164 900 ha of which 727 700 ha were infested.

No control operations were carried out in August.

• **FORECAST**

All remaining adult populations will eventually die at the beginning of the forecast period. Autumn egg-pod surveys will take place in September for DMA and in September and October for CIT and LMI. No further locust development is expected this year.

Kyrgyzstan

• **SITUATION**

Neither surveys nor control operations were carried out against DMA in July. In August, a total of 4 254 ha were treated of which almost 70% in Osh and the remaining in Batken.

In July, CIT surveys were carried out in three oblasts of which the most infested one was Jalal-Abad. A total of 3 230 ha were treated. In August, neither surveys nor control operations were carried out against CIT.

As a whole during the campaign, a total of 86 562 ha were surveyed, of which 79% against DMA populations. A total of 61 046 ha were treated by ground, of which 82% against DMA.

• **FORECAST**

No further locust development is expected that year. DMA and CIT egg-bed surveys will be carried out in September.

Russian Federation

• SITUATION

In August, surveys continued, which concerned a surface of 12 308 500 ha since the beginning of the 2014 locust campaign. Grasshopper mating, egg-laying and natural disappearance were still in progress while locust hopper development was coming to an end; migratory flights, mating and egg-laying continued to be observed. The average density was of 0.9 hoppers/m² and 0.6 adults/m² in the Central Federal District (FD), 19.8 hoppers/m² and 9.6 adults/m² in the Southern FD, 15.6 hoppers/m² and 15.3 adults/m² in the North Caucasus FD, 5.9 hoppers/m² and 3.1 adults/m² in the Volga FD and 2.2 hoppers/m² and 1.1 adults/m² in the Siberian FD. A total of 44 300 ha were treated in August. So far, more than one million hectares were treated since the beginning of the 2014 campaign.

• FORECAST

Biological cycle will come to an end for grasshoppers and all locust pests which will disappear during the forecast period.

Tajikistan

• SITUATION

In August, egg-bed survey operations were carried out on 60 550 ha, of which 23 150 ha in Khatlon, 25 000 ha in Sughd, 12 400 ha in Region of Republican Subordination and 1 850 ha in Gorno-Badakhshan. In addition, all relevant documents concerning the 2014 locust campaign were collected and the campaign coordinator presented in the media how control measures were implemented.

• FORECAST

In September, some additional egg-bed surveys as well as analysis of 2014 anti-locust activities will be carried out.

Turkmenistan

• SITUATION

No bulletin received for the sixth consecutive month.



• FORECAST

No further locust development is expected that year.

Uzbekistan

• SITUATION

DMA egg-bed surveys were carried out along the border with Tajikistan and 5 000 ha were found infested. It was indicated by the shepherds that locust flights entered in the country around mid-summer.

An increase in CIT numbers was observed in Karakalpakstan close to channels, reservoirs and irrigation ditches but the density, which ranged from 2 to 6 adults/m², did not exceed the economical threshold; therefore, no treatment was carried out. A similar situation occurred around lake Aydarkul, in Jizzax, Navoi and Samarkand provinces.

Contrary to previous years, LMI females had already laid eggs in Karakalpakstan in August and natural extinction was observed.

• FORECAST

No further locust developments are expected this year. CIT adult populations will progressively disappear but not before October due to persistence of high temperatures. It is expected that control operations will have to be carried out on 30 000 to 40 000 ha in lake Aydarkul area during the next locust campaign although CIT density did not exceed the economical threshold.

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.

August 2014 events and activities.

- **Locust monitoring:** A training on locust monitoring and information management was delivered by Mr A. Latchininsky, FAO Locust Expert, to 13 national plant protection/locust specialists in Nukus, Republic of Karakalpakstan, Uzbekistan, on 11-15 August 2014.
- **Locust assessment:** A locust survey to assess the Asian Migratory Locust situation in the Aral Sea area was carried out on 16-22 August 2014 by Mr Latchininsky, FAO Locust Expert, Mr F. Gapparov, Head, Laboratory for Locust Research, Uzbek Research Institute for Plant Protection, and Mr J. Allanazar, Head of Locust Control Service of Karakalpakstan.
- **Technical Workshop on Locusts in CCA, 17-21 November 2014, Tbilisi, Georgia:** Invitation letters were dispatched by FAO to relevant Ministries at the end of August. Deadline for sending the list of participants: 30 September 2014.



Forthcoming events and activities in September 2014.

- **Locust insecticides' residues:** the study on the "Fate of insecticides used for locust control on pasture in Kyrgyzstan" is under preparation by Ms A. Gorbunova, FAO Toxicologist, an Expert from Russia, together with Mr A. Alakunov, Chief specialist, Division of Plant Protection and Pesticide Registration, Ministry of Agriculture, Kyrgyzstan. More specifically, chemical analysis of the pesticide residue, that were collected in Kyrgyzstan in July 2014, will be carried out in Bishkek in September. Confirmation analysis will also be made in the laboratory of Krasnodar, Russian Federation, as technical and financial contribution of the country to the activity.
- **Locust Geographical Information System (GIS) in CCA:** The technical specifications to create a database for the GIS, entitled «Caucasus and Central Asia Locusts Information System» («CCALIS»), will be developed. The structure of CCALIS will include both the regional and the national GIS.

