



LOCUST BULLETIN No. 12



FAO - Plant Production and Protection Division (AGPM)

29 August 2011

Situation level: CAUTION

- Moroccan Locust (DMA) in Tajikistan and the Russian Federation
- Italian Locust (CIT) in Kazakhstan and the Russian Federation

Situation level: CALM elsewhere for the three locust species

General Situation during July 2011 Forecast until mid-September 2011

During July, breeding of the Moroccan Locust (DMA) was in progress in all Caucasian and Central Asian (CCA) -except in Armenia where DMA is not a pest- and the species started disappearing upon completion of its life cycle. Italian (CIT) and Migratory (LMI) locusts fledged and breeding started in most countries. DMA, CIT and LMI adult groups and flights were reported in the Russian Federation while CIT swarms formed in Kazakhstan. Egg-laying should be carefully monitored in areas where adult flights were reported in order to identify high density egg-beds. So far, almost 4 million ha have been treated in CCA against the three species.

Caucasus. DMA egg-laying was probably in progress in Azerbaijan. CIT hopper development continued in Armenia where 200 ha were treated. In Georgia, DMA breeding was probably in progress and CIT fledging continued. A total of 1,300 ha were treated against CIT.

Central Asia. DMA breeding was in progress or already completed. The species has probably already disappeared from southern regions while egg-laying started mid-July elsewhere; migrant groups were noted in the Russian Federation. CIT fledging, mating and egg-laying occurred in Kazakhstan, where swarms formed. CIT egg-laying started in the Russian Federation. LMI fledged in Kazakhstan and the Russian Federation. In Uzbekistan, LMI situation was less serious than anticipated because of the drought. During the forecast period, DMA and CIT will progressively disappear while LMI will breed. In July, locust campaigns were completed in Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. So far in 2011, 3.94 million ha have been treated in the area, of which 48.60% in Kazakhstan, 29% in Russia and 11% in Uzbekistan.

Weather and Ecological Conditions in July 2011

Temperatures increased in all CCA countries.

Rains continued in Caucasus.

In **Caucasus**, hot weather prevailed.



In Armenia, hot weather prevailed together with rains and thunderstorms in all regions; crop damage due to hail were again reported. Day temperatures ranged from 10-14°C to 39-40°C in lowlands, from 7-12°C to 28-31°C at foothills and from 4-8°C to 24-29°C in mountainous areas. This represented an average increase of 3°C as compared to the previous month. Weather conditions favored the rapid development and spread out of fungal diseases (mildew) in vineyards. However, they were also suitable for farm work and the harvesting of winter cereal started or continued during the second half of the month. In areas where survey operations were conducted (plantations of perennial crops, meadows, pastures and fallow lands), the vegetation was mostly green with a medium to dense cover.

In Georgia, the weather was hot with temperatures ranging from 35 to 42°C with only a few rainy days.

In **Central Asia**, hot weather persisted.

In Kazakhstan, the weather became more stable in all regions and it was generally less windy. In the South, sunny and clear conditions prevailed with some rains. Average day temperatures ranged from 19°C to 30°C and up to 44°C; the night ones were of 9.2°C. Relative humidity varied from 19 to 81%. South- and north-westerly winds prevailed at a speed of 3.9 m/s with gusts up to 12 m/s. In the East, weather was variable and rainfall amounted 35.2 mm. Temperatures ranged from 15.7 to 24.3°C (minimum of 8.6°C and maximum of 35.6°C). Relative humidity varied from 55 to 72.3%. Prevailing south- and north-westerly winds had a speed of 1-14 m/s with sometimes gusts up to 44 m/s. In the West, the weather was clear and sunny with light rains in some places. Temperatures ranged from 22 to 33.5°C (minimum of 12°C and maximum of 45°C). The relative humidity varied from 18 to 45%. North- and south-westerly winds prevailed at a speed of 1-7 m/s. In the North, warm and sunny days were followed by cloudy and rainy periods. Temperatures ranged from 15 to 25°C with minimum dropping to

6.7°C and maximum of 34°C. The relative humidity ranged from 42 to 91%. Winds blew from East, North-east and North at a speed ranging from 1 to 12 m/s with sometimes gusts up to 43 m/s. According to regions, cereal crops were from milky stage to full ripeness and harvest was in progress everywhere; alfalfa from re-growth to third mowing; fruit from ripening to full ripeness and harvest was in progress.

In Tajikistan, the average day temperatures were of 38-42°C in Khatlon province, 37-39°C in the Region of Republican Subordination (RRS) and 36-38°C in Sughd province during July, about the same as compared to the previous month. From 13 to 18 July, there was strong southerly storm throughout the country.

In Uzbekistan, the weather was dry and hot in June and July, with temperatures up to 48°C for two consecutive months. Consequently, DMA hopper development was quicker than usual; in addition and due to the vegetation scarcity in the pastures, mass cannibalism was observed.

In the Russian Federation, the weather was hot with average daily temperatures of 22-27°C and scattered light rains in the Central Federal District (FD). In North Caucasian and Southern FDs, the weather was hot with frequent torrential rains at the end of the 1st decade and the beginning of the 2nd one while it became very hot and dry from mid-July, with average temperatures of 24-28°C and peaks up to 40°C. In the Volga FD, temperature ranged from 23°C to 28°C and rains fell during the 3rd decade (32 mm). In the Siberian FD, average temperatures were of 19-22°C and moderate rains ranged from 21-30 to 31-50 mm.

Area Treated

Afghanistan	240,028 ha (for the whole campaign)
Armenia	200 ha (in July and for the whole campaign)
Georgia	1,800 ha (in July and for the whole campaign)
Kazakhstan	1,917,090 (up to 31 July)
Kyrgyzstan	61,436 ha (up to 7 July)
Russia	1,139,600 ha (up to 31 July)
Tajikistan	137,518 ha (up to 15 July)
Uzbekistan	448,000 ha (for the whole campaign)

Locust Situation and Forecast

(see also the summary on page 1)

CAUCASUS

Armenia

• SITUATION

During surveys conducted in July on 35,000 ha, the specialists from the state plant protection service observed solitary hoppers over approximately 25,400 ha but no bands were present; some imagoes were also seen in the lowlands. CIT hoppers were present in five provinces (Aragatsotn, Ararat, Gegharkunik, Shirak, Syunik) and exceeded the harmful threshold on 3,000 ha. Density was of 1-9 hoppers/m² reaching up to 5-22 hoppers/m² over 200 ha in two farms of the Ararat province, where damage were reported on gourds. Following allocation of pesticide (cypermethrin as active ingredient) by the Ministry of Agriculture, control operations were carried out by the farmers themselves; the mortality was of 86-88%.

• FORECAST

CIT mating and egg-laying will start in the lowlands at the beginning of the forecast period (second half of August); breeding it will begin at the foothills and in the mountainous areas from end of August or early September. No significant infestations are expected this summer.



Azerbaijan

• SITUATION

No report was received in July.

• FORECAST

DMA adults should have laid eggs and will progressively disappear.

Georgia

• SITUATION

In July, surveys were carried out in Kakheti, Kvemo Kartli and Shida Kartli regions, where 80% of the CIT population was at the hopper stage with prevalence of the 5th instar. Infestations were identified on more than 20,000 ha, of which 1,300 ha were treated by air and ground using Chlorpyrifos and Deltamethrin in ULV formulation. A number of small infested areas were near cities and villages, which hampered wide use of aerial spraying.

The press mentioned that Tbilisi was full of grasshoppers, sometimes referring to Italian or Moroccan locusts; however, there were long-horned grasshoppers from the *Tettigonioidae* family.

• FORECAST

DMA adults should have laid eggs, in particular in the Kakheti region and including along the Azeri border; they will progressively disappear. CIT life cycle will also come to an end and adults will lay eggs and start disappearing during the forecast period. Because only 8 to 10% of the infestations were controlled during the campaign, it is anticipated that their level will be high in 2012.

CENTRAL ASIA

Afghanistan

• SITUATION

As reported in the previous regional bulletin, the locust season came to an end on 5th July and no further information was received afterwards.

• FORECAST

No further development is expected this year. Egg-bed surveys should be carried out whenever possible to locate the most infested areas in order to plan the 2012 campaign.

Kazakhstan

• SITUATION

DMA mating and egg-laying monitoring was carried out on 747,700 ha in South-Kazakhstan and Zhambyl provinces; almost 233,000 ha were infested, of which 102,000 ha with densities ranging from 5 to 10 adults/m². Adults started disappearing in early July and no more DMA was observed by the first decade of August.

CIT fledging started in late June in North-Kazakhstan and the peak occurred on 10-25 July. According to the areas, mating started between 5 and 25 July and egg-laying from 14 to 30 July. On 29 July, there were 23 to 97% of adults and 3 to 77% of hoppers, with prevalence of 5th instar. The density of adults in natural vegetation and perennial grasses varied from 0.05 to 13.5 individuals/m². In Pavlodar, parasitism of CIT females by fly maggots (*Blaesoxipha lineate*) was observed during egg-laying surveys. In West-Kazakhstan, mating started on 5 July and generalized from the 9th. Egg-laying began from mid-July. The density ranged from 1 to 26 adults/m² reaching up to 36-40 adults/m² in some areas. Swarms formed in West-Kazakhstan as well as in the neighboring province of Atyrau, and flights from the Russian Federation were observed. In East-Kazakhstan, fledging was reported from 30 June to 15 July with peak on 5-14 July. Egg-laying started by mid-July and generalized during the second half of the

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month. In South-Kazakhstan, egg-laying was observed from mid-July. The density did not exceed 15-20 adults/m² and each female laid 22 to 28 eggs. Control operations came to an end on 15 July. With additional 2,100 ha treated during the first half of July, the total area treated against CIT infestations amounted to 1,453,340 ha during the 2011 locust campaign.

LMI fledging was observed on 3-19 July in East-Kazakhstan, on 14-25 July in South-Kazakhstan, on 16-20 July in West-Kazakhstan and on 15-25 July in Kostanay. In Akmola, hoppers were found along river and lake banks at a density of 150 hoppers/m². Fledging started on 14 July and 40% of the population had fledged on 29 July. Treatments concerned 68,580 ha during the month; a total of 379,920 ha were treated during the campaign.

As compared to 2010, there was a slight increase by 2.5% of the treated areas; above all, there was a change in the nature of the infestations with an increase by almost 10% of treatments against CIT and an equivalent decrease concerning LMI.

• FORECAST

DMA natural extinction will probably be effective by mid-August. CIT mating and egg-laying will continue at the beginning of the forecast period and adults should start disappearing by the end of August. LMI mating and egg-laying will continue during the forecast period. Monitoring of CIT and LMI traditional breeding areas will be conducted in order to plan the 2012 locust campaign.

Kyrgyzstan

• SITUATION

Additional detailed information was received on control operations carried out against DMA during the previous month in the two most infested provinces, Jalal-Abad and Batken.

• **FORECAST**

During the forecast period, last DMA adults will disappear and CIT will complete its life cycle and eventually die.

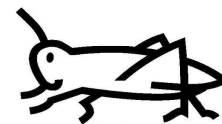
Tajikistan

• **SITUATION**

The last control operations of the campaign were carried out on 3,896 ha. DMA egg-laying survey took place in Khatlon province and RRS to determine abundance and size of egg-beds and egg-pod density. Some erratic flights of CIT were controlled in the Sughd province, along the Kyrgyz border. There were also some treatments against LMI in the Ghonchi and Istaravshan districts of Sughd. Analysis of control operations showed that it was often necessary to repeat the treatments in the same areas because of locust flights. The 2011 locust campaign came to an end with a total of 137,518 ha treated, which represents an increase of 40% as compared to 2010. During the campaign, 30,000 litres of pesticides (1/2 of Karate, 1/3 of Decis and 1/6 of Nurell-D), 200 sets of protective clothing, 800 hand-held and 300 motorized sprayers, 2 tractors, 50 tents as well as fuels and lubricants were purchased. A total of 2,894 temporary workers were involved; 38 tractor-mounted sprayers and 1,933 hand-held sprayers were used. This represents a tremendous increase as compared to the 2010 campaign, which had mobilized 590 temporary workers, 27 tractor-mounted sprayers and 518 hand-held sprayers.

• **FORECAST**

All locust populations will progressively disappear after completion of their life cycle and no further development is expected during the forecast period. For the 2012 campaign, the first results of the DMA egg-laying sites suggest that control activities should double next year in the plains and the valleys.



Turkmenistan

• **SITUATION**

No bulletin was received in July.

• **FORECAST**

DMA should have completed its life cycle. No further development is expected this year. Egg-bed surveys will probably be carried out to locate the most infested areas and plan the 2012 campaign.

Uzbekistan

• **SITUATION**

DMA control operations were completed on 14 June and concerned 327,000 ha over the campaign. This represents 73% of the total area treated this year. In late May, movements of winged adult populations occurred between Tajikistan and Uzbekistan (Surkhandarya and Jizzakh provinces). Following a joint expert and manager meeting, extensive surveys were carried out and high infestations were found along the border and in neutral zones. Thanks to quick mobilization of equipment and provision of pesticides, no flight towards the crops were reported. By mid-July, mass egg-laying was observed, in particular in the border areas with Tajikistan.

By mid-August, treatments against CIT and LMI were also completed. A total of 48,000 ha and 28,000 ha were treated against these two locust pests respectively. Because of the drought, LMI infestations were lower than anticipated, resulting in fewer control operations than planned and smaller area treated as compared to 2010 (36%). The main LMI infestations were identified in remote and inaccessible reed areas; consequently, next year development will depend on the 2012 water regime.

During the campaign, three different pesticides (of which two locally produced) were used. They were sprayed by 146 tractors, 28 Micronair ULV and 6 hang-gliders.

• **FORECAST**

No further locust development is expected this year. Egg-bed surveys will be carried out in October and November with results available in December to plan the 2012 campaign.

Russian Federation

• **SITUATION**

Fledging was in progress during July as shown by the results of surveys carried out during the month in 5 Federal Districts (FD): average of 7.4 hopper/m² on 18% of the surveyed area and of 4.7 imago/m² on 1.5% of the surveyed area in the Central FD; 33.6 hoppers/m² (31.1%) and 14.0 imagos/m² (45%) in the Southern FD; 16.1 hoppers/m² (78%) and 13.8 imagos/m² (87%) in the North Caucasian FD; 3.7 hoppers/m² (34.1%) and 1.4 imagos/m² (9.6%) in the Volga FD, and 9.2 hoppers/m² (50%) and 10.5 imagos/m² (62%) in the Siberian FD. Mass DMA fledging occurred; adults formed migrant groups and bred. CIT fledging continued and adults started laying eggs during the 3rd decade of July. Average number of eggs was of 18-22 per pod. In addition, flights from neighboring countries were reported. LMI fledged and the adults formed flying groups. A total of 1,139,600 ha were treated in July (twice more as compared to June) mobilizing 1,287 ground- and 86 air-sprayers.

• **FORECAST**

During the forecast period, fledging will come to an end for the three locust pests, adults will form groups, lay eggs and eventually disappear.



Announcements

Locust warning levels. A colour-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's 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 Annie.Monard@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.

New information on Locust Watch in Caucasus and Central Asia. Recent additions to the website (<http://www.fao.org/ag/locusts-CCA/en/index.html>) are: none

2011 events. The following activities occurred or are scheduled:

- Annual Technical Workshop on Locusts in Caucasus and Central Asia, 24-28 October 2011, Tbilisi, Georgia.

