Locust Watch
Locusts in Caucasus and Central Asia

LOCUST BULLETIN No. 10

FAO - Plant Production and Protection Division (AGPM) 30 June 2011

Situation level: CAUTION

- **Moroccan Locust (DMA) in Kazakhstan, Kyrgyzstan and Tajikistan**
- **Italian Locust (CIT) in Kazakhstan**
- **Migratory Locust (LMI) in Kazakhstan**

Situation level: CALM elsewhere for the three locust species

General Situation during May 2011 Forecast until mid-July 2011

The situation further deteriorated in Central Asian countries after hatching of the Italian and Migratory locusts. In Kazakhstan, Tajikistan, Uzbekistan, and probably Afghanistan and Turkmenistan, Moroccan Locust (DMA) fledging occurred while hopper development continued in Kyrgyzstan. Italian Locust (CIT) hopper bands formed in Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Russia and control operations were required in those countries as well as in Kazakhstan and Uzbekistan against Migratory Locust (LMI) hoppers. Drying out of the vegetation will result in more DMA flights and likely cross-border movements of adult populations. Due to persistence of unsuitable weather conditions, the situation remained calm in Caucasus except in Azerbaijan where limited treatments were carried out.

Caucasus. DMA hatching started from early May onwards in **Azerbaijan**, where limited control operations were undertaken but hampered by bad weather conditions. CIT hatching began during the second half of May in **Armenia** but no control was needed so far. In **Georgia**, DMA and CIT hopper development should be in progress.

Central Asia. In May, DMA hopper development was in progress in **Kyrgyzstan** while fledging started in **Kazakhstan** and continued in **Tajikistan** and **Uzbekistan**. CIT hopper development was in progress in Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and the **Russian Federation**. LMI hatching started in Kazakhstan, Tajikistan and Uzbekistan. During the forecast period, DMA will lay eggs while CIT and LMI hopper development will continue and fledging start. More than 1 million ha were treated in Central Asian countries since the beginning of the 2011 locust campaign, of which 40% in Kazakhstan and 30% in Uzbekistan.

Weather and Ecological Conditions in May 2011

Temperatures increased slightly in all CCA countries. Rains continued to fell in Caucasus while dry conditions persisted in southern Central Asian countries.

In **Caucasus**, rainy and sometimes relatively cool conditions prevailed.

In Armenia, variable weather prevailed in all regions but was mostly rainy with 24 days of precipitation, including thunderstorm and hail. These wet conditions contributed to the development of crop fungal diseases and fruits were particularly affected. Day temperatures ranged from 6-9°C to 28-30°C in lowlands, from 2-7°C to 26-28°C at foothills and from -2/+2°C to 17-22°C in mountainous areas. This represented a slight increase of 2°C in lowlands, 5 to 7°C at foothills and 1-2°C in mountainous areas as compared to April. In areas where survey operations were conducted, the vegetation was green with a dense cover.

In Azerbaijan, average daily temperatures were of 15-17°C, which represented an increase of 6°C as compared to April. Wind speed ranged from 3 to 6 m/s. Heavy rains that fell during the 2nd decade contributed to the intensive development of herbaceous plants in grasslands, canyons, mountains and foothills but, together with persistent cool temperatures, were unsuitable for locust development. Natural and cultivated vegetation was green and dense in areas where surveys were conducted. By the end of the month, winter cereal crops were at the flowering stage.

In **Central Asia**, the weather was variable with dry conditions prevailing in the South.

In Kazakhstan, the weather was mainly variable in all regions and temperatures increased by about 7°C as compared to April. In the South, sunny and clear conditions prevailed with variable cloudiness, gusty winds, some rains and hails. Average temperatures ranged from 14°C to 30°C with a minimum of 5.6°C and a maximum of 36°C. Relative humidity varied from 17 to 90%. South- and north-westerly winds prevailed at a speed of 1-13 m/s with gusts up to 20 m/s. In the East, weather was variable with rapid changes of temperatures. Rainfall amounted 40.3 mm. Temperatures ranged from 9.8 to 22.5°C with a minimum of -0.6°C and maximum of 30.3°C. Relative humidity varied from 22 to 73.8%. Prevailing south-westerly and north-easterly winds had a speed of 1-6 m/s with gusts reaching up to 15 m/s. In the West, the weather was cloudy and variable; rainfall amounted 24.2 mm. Temperatures ranged from 13 to 25.5°C (minimum of 4°C and maximum of 32.4°C). The relative humidity varied from 19 to 84%. North-east and south-west winds prevailed at a speed of 1-10 m/s. In the North, weather was partly cloudy; warm and sunny days were followed by cloudy and rainy periods, including thunderstorms in some places. Temperatures increased gradually, ranging from 11 to 24.5°C with minimum dropping to 0°C and maximum of 31°C. The relative humidity ranged from 19 to 100%. Southeast, northeast and north winds prevailed at a speed ranging from 1 to 11.6 m/s with sometimes gusts up to 47.4 m/s. In southern, eastern and northern mountainous areas, daily temperatures above zero resulted in extensive snow melting. According to regions, cereal crops were from sowing (rice) and tillering stages to beginning of flowering (wheat, barley); alfalfa from shooting to the first mowing (25-40 cm high in the South); fruit trees in fruit growth and vegetable crops in maturation phase.

In western Kyrgyzstan, temperatures ranged from 13.6 to 20.8°C and wind speed was of 5-13 m/s. Low cover vegetation was dry. In the South, temperatures ranged from 9.9 to 12.7°C and wind speed varied from 10 to 16 m/s. In the North, temperatures ranged from 9.9 to 20°C and wind speed was of 5-7 m/s. Both in the South and in the North, the vegetation was green and had a medium cover.

In Tajikistan, hot and dry weather prevailed during May. Average day temperatures were of 37°C in Khatlon province, 35°C in the Region of Republican Subordination (RRS) and 36°C in Sughd province.

In the Russian Federation, dry and warm weather,

with day temperatures of 19-25°C, prevailed in the southern areas of the Central Federal District (FD). In North Caucasian and Southern FDs, the weather was unstable and rainy, with average temperatures of 15-20°C. In the Volga FD, temperature was of 11-17°C and rains fell at times. In the Siberian FD, the weather was warm, with average temperatures of 16-27°C and some very light rains.

Area Treated in May 2011

Azerbaijan	2,200 ha (up to 1 June)
Kazakhstan	426,770 ha (up to 6 June)
Kyrgyzstan	29,000 ha (up to 20 May)
Russia	34,500 ha
Tajikistan	114,276 ha (up to 27 May)
Uzbekistan	320,000 ha (up to 23 May)

Locust Situation and Forecast

(see also the summary on page 1)

CAUCASUS

Armenia

• **SITUATION**

During surveys conducted in May, CIT hatching was observed in lowlands during the second fortnight while it had not yet started at foothills and in mountainous areas. It was noted that rainy and cold weather conditions delayed hatching and slowed down hopper development. No control operations have been carried out so far.

• **FORECAST**

CIT hopper development will continue in lowlands while hatching will occur at foothills and in mountainous areas during the first half of June.

Azerbaijan

• **SITUATION**

DMA hatching started on 5-6 May in the South-East (Garas, Padar plain) and 1-3 instar hoppers were present later in the month. In the North-West (Djeiranchel, Eldar steppes), along the border with Georgia, DMA hatching occurred on 11-12 May and 1-2 instar hoppers were observed during the second fortnight but their development was slowed down by unsuitable weather conditions. Ground control operations were carried out against hopper groups and bands from the 2nd decade of May onwards and concerned 2,200 ha up to 1st June.

Tractor-mounted and hand-held sprayers were used to spray high volume (200-400 l/ha) of pesticides whose active ingredients were pyrethroids (α-cypermethrin and λ-cyhalothrin). These operations were hampered by rainy and windy conditions and not all infested areas requiring control were treated.

Local rural populations, in particular farmers and rural residents, were informed on chemical operations.

• **FORECAST**

With the improvement of weather conditions, hopper development and adult appearance are expected during the forecast period. Ground control operations will continue accordingly.

Georgia

• **SITUATION**

No bulletin was received in May.

• **FORECAST**

DMA fledging should occur early during the forecast period in particular in the Kakheti region (Dali, Mori and Samukhi areas) and in the south-eastern part of the country, along the Azeri border. CIT hopper development will continue with fledging expected by the end of the forecast period in the northern and north-western parts of the above mentioned areas as well as in the eastern part of the Kvemo Kartli region. Scale of infestations of the two species should be reduced as compared to 2010 because of unsuitable weather conditions.

CENTRAL ASIA

Afghanistan

• **SITUATION**

No bulletin was received in May. Hopper bands having escaped control operations carried out in April, have probably formed adult groups and some swarms, resulting in increased threat and likely damage on remaining green and cultivated areas inside and outside the country.

• **FORECAST**

Movements of adult groups and swarms looking for areas suitable for feeding and breeding will continue during the forecast period and could affect neighboring countries.

Kazakhstan

• **SITUATION**

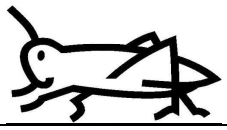
DMA hopper surveys were completed on 10-16 May in the southern districts of South Kazakhstan province, where fledging started on 15-18 May and generalized on 25-31 May with density of 10.5 imagos/m²; by early June, imagos represented 90 to 100% of the whole population and only 5th instar hoppers were present. In the northern districts of the province, hatching continued up to 8-13 May; on 2nd June, 2nd to 5th instar hoppers were present and 3-4 instars prevailed. In Zhambyl province, mass hatching was observed on 8-14 May; on 20 May, 3rd to 5th instar hoppers were present (5th instar prevailed, representing 30% of the population) together with imagos (10-15%). An area of 83,830 ha was treated against DMA hopper infestations, mainly in South Kazakhstan (95% of the controlled area).

CIT hatching was observed on 23-30 April and on 14-23 May in South Kazakhstan. It started on 11-16 May, with mass hatching on 20-27 May, in Kostanay, Pavlodar and East Kazakhstan provinces, and on 18-31 May in Akmola and Karagandy provinces; it lasted from 14-24 May to 1-2 June in West Kazakhstan. On 30-31 May, 1st to 4th instars were present in Almaty province with prevalence of the 1st one (65% of the population); in Zhambyl, 2nd instar represented half of the 1-3 instar hopper population and hoppers formed bands of an average size of 1,000 m². Elsewhere, in Kyzylorda, Aktobe, Kostanay, Pavlodar and East Kazakhstan, 1-3 instars were present with prevalence of the 1st one (65 to 90% of the hopper population); bands, whose size varied from 200 to 800 m², were also observed in Pavlodar province. The density ranged from 0.01-4 to 7-15 hoppers/m², reaching up to 400-600 hoppers/m² within the bands. A total of 397,090 ha were treated up to 6 June against CIT hoppers, mainly in Almaty and Kostanay provinces (42% of the controlled area).

Beginning of LMI hatching was observed on 12-30 May in Almaty, on 30 May in South Kazakhstan, on 14-27 May in Kyzylorda and on 24 May in East Kazakhstan. On 31 May, 100% of the hopper population was of 1st instar, except in Kyzylorda, where already 10% of 2nd instar hoppers were present. The average density ranged from 300 to 600 hoppers/ha. A total of 6,370 ha were treated mainly in Almaty (61% of the controlled area).

• **FORECAST**

DMA mating and egg-laying are expected during the 1st decade of June in South Kazakhstan. In Zhambyl,



mass fledging should occur during the 2nd decade of June and mating and egg-laying during the 3rd one. CIT fledging should start during the 2nd decade of June in the southern regions and be followed by egg-laying during the 3rd one. In the northern regions, mass hatching is expected during the 1st half of June. In Pavlodar, fledging should start during the 3rd decade. LMI mass hatching is expected in early June in Kostanay, during the 1st half of June in the southern regions and by mid-June in West Kazakhstan. Hopper development will continue in other areas.

Kyrgyzstan

• **SITUATION**

Up to 6 June, surveys were carried out across the country on nearly 76,000 ha. Infestations by DMA hopper bands, whose density ranged from 1 to 40 hoppers/m², were found on 41,500 ha. Up to 20 May, 29,000 ha were treated out of an area of 40,120 ha requiring control operations.

More surveys were carried out in the south-western province of Batken, where 16,337 ha of farmland were monitored on 8-31 May; 81% of this area (13,220 ha) was infested by DMA gregarious 2-3 instar hopper groups and bands at a density of 4 to 18 hoppers/m². The size of the bands ranged from 2 to 18 m². In the southern province of Naryn, 52% of the area surveyed on 18-26 May (3,480 ha) was infested by DMA gregarious 2-3 instar hopper groups at a density of 10 to 35 hoppers/m²; the group size was of 1.5 to 4 m². Monitoring activities were ongoing. In the northern province of Chui, 18% of the area surveyed on 18-22 May (200 ha) was infested by gregarious hopper groups of 3rd instar at a density of 15 to 40 hoppers/m²; the group size was of 5 to 8 m². Although not mentioned, the locust species should be CIT in that province.

• **FORECAST**

DMA hopper development will come to an end in June and adults should start appearing by early July.

CIT hopper development will continue in northern provinces during the forecast period.

Tajikistan

• **SITUATION**

DMA hopper development came to an end in Khatlon province and RRS, where fledging, maturation, mating, egg-laying as well as movements of adult groups and swarms were successively observed. Because of these flights, it was sometimes necessary to treat the same areas up to 4 times. By the end of the month, mating ended and egg-laying started but the situation remained worrying. As anticipated on the basis of long term data, CIT hatching started by mid-May in Sughd province. Presence of locusts was noted along the border with Kyrgyzstan. Control operations were in progress in irrigated crops in the extreme northern district of Asht as well as in orchards in the northern districts of Ghafurov, Isfara and Konibodom; however, the situation was considered as calm. Control operations against LMI started in late April in two districts of Sughd province; more details are awaited. It was confirmed that locust life cycle was ahead by 15-20 days as compared to historical data and that the drought resulted in locust early migration from hills and mountains to valley oases. Therefore, locust control was mainly undertaken in the vicinity of farmlands, orchards and vineyards. On 27 May, ground control operations were carried out on 114,276 ha in Khatlon (63% of the treated areas), Sughd (20%) and RRS (17%) provinces. These operations involved more than 3,100 workers, 55 tractors and 1,995 hand-held sprayers, which represented 10% more people and equipment than in April. As compared to May 2010, twice more hectares were treated with three times more people and twice more hand-held sprayers. No pesticide shortages or delayed deliveries were

reported this year.

As a result of two meetings of a Tajik-Uzbek technical working group held in late April and early May to decide on joint actions to be carried out along the common border, control operations were undertaken in southern Khatlon province and RRS with the Uzbek Surkhandarya province and in nothern Sughd with the Uzbek Jizzakh province. Collaboration was in progress in the field.

• **FORECAST**

During the forecast period, DMA egg-laying will continue and CIT and LMI will fledge, mature and breed. Dry conditions, which have already favored early migration of locust populations towards remaining green and cultivated areas, will probably result in more movements between neighboring countries and high concentrations of egg-pods in suitable sites.

Turkmenistan

• **SITUATION**

No bulletin was received in May.

• **FORECAST**

DMA adults, which have probably formed groups and swarms, are expected to move to suitable areas within and outside the country and eventually lay eggs during the forecast period.

Uzbekistan

• **SITUATION**

No additional report was received in May. Information on the situation up to 23 May can be found in the previous regional bulletin.

• **FORECAST**

During the forecast period, DMA adults will continue to lay eggs and then progressively disappear. CIT hopper development will continue and an increasing number of adults should appear from early June onwards. LMI adults should massively appear by the end of the forecast period.

Russian Federation

• **SITUATION**

The results of hopper surveys carried out in May in 5 Federal Districts (FD) were the following: average of 0.3 hopper/m² on 32% of the surveyed area in the Central FD; average of 32.7 hoppers/m² on 46% of the surveyed area in the Southern FD; average of 15.1 hoppers/m² on 54% of the surveyed area in the North Caucasus FD; average of 26 hoppers /m² on 36% of the surveyed area in the Volga FD, and average of 6.5 hoppers/m² on 50% of the surveyed area in the Siberian FD.

A total of 34,500 ha have been treated in May mobilizing 179 ground sprayers and 3 aircraft.

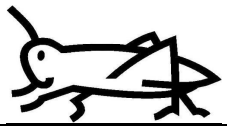
• **FORECAST**

Hopper development will continue during the forecast period.

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:

- Start of the "Five-year Programme to improve national and regional locust management in Caucasus and Central Asia (CCA)", following approval of an assistance of USD 1,6 million from the United States Agency for International Development (USAID) on 9 May and of a contribution of USD 0.6 million from the FAO/Turkey Partnership Programme on 26 May.
- FAO press release entitled "Anti-locust programme in Central Asia and Caucasus" issued on 19 May 2011 (in English and Russian).