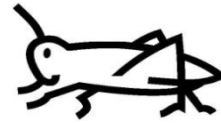




LOCUST BULLETIN No. 22



FAO - Plant Production and Protection Division (AGPM)

15 June 2013

Situation level – THREAT for the Italian Locust (CIT) in Georgia, Kazakhstan, Kyrgyzstan and Tajikistan

Situation level – CAUTION for the Moroccan Locust (DMA) in Afghanistan, Georgia, Kazakhstan, Kyrgyzstan, Russia and Tajikistan; CIT in Russia; and Migratory Locust (LMI) in Uzbekistan

Situation level – CALM elsewhere (Armenia, Azerbaijan) for DMA, CIT and LMI

General Situation during May 2013 Forecast until mid-July 2013

The situation deteriorated during May in all Caucasian and Central Asian countries where mass hatching of Italian (CIT) and Asian Migratory locusts (LMI) occurred, resulting in an increase or extension of the hopper infestations already present. Control operations were carried out on more than 1,2 million hectares (ha), one million ha more than during the previous month. Intensive control operations will continue during the forecast period. The situation level was qualified as caution by most of the countries).

Caucasus. Moroccan Locust (DMA) hopper development was in progress in Azerbaijan, where fledging started, as well as in Georgia. Italian Locust (CIT) hatching occurred in Georgia, where hopper development was ongoing. Control operations were carried out on 33,900 ha and 2,000 ha in that two countries respectively. No hatching was observed in Armenia.

Central Asia. DMA hopper development came to an end in **Afghanistan** and **Uzbekistan** (except in the mountainous areas) –and probably in **Turkmenistan**– and was in progress in **Tajikistan** and **Kazakhstan**, where fledging started, as well as in **Kyrgyzstan** and **Russia**. CIT hopper development was in progress in Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Uzbekistan. Asian Migratory Locust (LMI) hopper development was in progress in Kazakhstan, Russia and Uzbekistan. A total of 1,182,441 ha were treated against the three locust pests.

Weather and Ecological Conditions in May 2013

The weather was unstable to warm during May and suitable for hopper development. In some areas, vegetation started drying out, which resulted in early locust movements.

In **Caucasus**, warm weather prevailed and natural vegetation was drying out except in Armenia.



In Armenia, it was rainy throughout the country with thunderstorms and hail in some areas, the latter causing damage to crops in Armavir and Aragatsotn provinces and affecting approximately 50 villages. Cumulative rainfalls varied from 57 to 68 mm in the mountains, 45 to 54 mm at foothills and 15 to 30 mm elsewhere; these important rains delayed the agricultural activities. The average temperature was mostly normal with little variations. Temperatures ranged from 7/11°C to 28/33°C in the lowlands, from 1/6°C to 20/25°C at foothills and from 1/4°C to 16/21°C in mountainous areas, which represented a slight decrease as compared to the previous month probably owing to the important rainfall. The natural vegetation was mostly green with a dense cover in lowlands and foothills.

In Azerbaijan, the weather was mostly warm with an average temperature of 22/27°C, which represents an increase of 5°C as compared to the previous month; wind speed was of 5-10 m/s. There were occasional showers. These weather conditions were suitable for hopper development. Natural vegetation was drying out and its cover was low. In late May; cereal crops were at the milky stage.

In Georgia, hot weather prevailed with average temperature of 23/28°C, sometimes reaching 33°C and more, an increase of more than 5°C compared with the previous month. There were only a few rainy days. The vegetation was drying out and had a medium cover. Crops (sunflower, sorghum, cucurbitaceae) were developing.

In **Central Asia**, the weather was still unstable with an increase in temperatures and some rains at times.

In Afghanistan, moderate to high rains fell in most parts of the country during April but in May low rainfall occurred and warm weather prevailed.

In Kazakhstan, variable weather prevailed. In the South, the weather was clear with some local rainfalls. The average daily temperatures ranged from 14°C to 26°C with a maximum up to 33°C, and the minimum

night temperature was of -2°C in the mountains close to Almaty. Relative humidity varied from 32 to 81%. North and north-east- winds prevailed at a speed of 1-14 m/s. In the East, the weather was unstable with sunny, cloudy and rainy days. Average day temperature was of 14°C with minimum of -4°C and maximum of 28°C. Relative humidity was of 70.5%. North-westerly winds prevailed at a speed ranging from 1 to 18 m/s. In the West, the weather was clear and sunny with short cloudy periods only and some rains. The average day temperatures ranged from 5 to 26.8°C with minimum of 2.8°C and maximum of 32.4°C. The relative humidity varied from 26 to 60%. The wind direction was variable but north-westerly and north-easterly winds prevailed at a speed of 3-9 m/s. In the North, unstable weather prevailed. The average day temperatures ranged from 4°C to 22.5°C, with minimum of -0.7°C and maximum of +29°C. The relative humidity was of 35-84%. South- and north-easterly winds prevailed at a speed of 1-13 m/s.

In Kyrgyzstan, the average monthly temperature was 1/3°C below normal. The hottest days were reported during the 2nd and 3rd decades of May with temperatures up to 26/29°C in Jalal-Abad and Batken. The lowest temperature (2°C) was registered in Naryn during the 1st decade. The rainfall amount was of 200-360 mm in the southern regions and of 140-260 mm in the north. The vegetation was with a height ranging from 2 to 6 cm and a dense cover.

In the Russian Federation, the weather was variable to hot. In the southern areas of the Central Federal District (FD), the weather was characterized by relatively high temperatures (average of 17.5/25°C) and absence of rain (humidity ranging from 48 to 52%). In the North Caucasus and Southern FDs, the weather was hot with average daily temperature ranging from 6.1 to 35°C.



Drought was reported in some areas; there were also storms with hail at times. The average humidity ranged from 20 to 50%. In the Volga FD, the weather was unstable with local rainfalls and average temperatures ranging from 9 to 20°C, which was above normal for the second consecutive month. The average humidity ranged from 47 to 58%. In the Siberian FD, the weather was unstable with precipitation in some areas in the form of rain, snow and hail but representing 30 to 80% of normal only. The average temperature was of 10-20°C.

In Tajikistan, warm and dry weather prevailed throughout the country until the 18th May with temperatures ranging from 12 to 16°C at night and from 28 to 35°C during the day, which had a negative impact on the development of natural vegetation. In the night of 18/19 May, light rain occurred in RRS and on 23-27 May, torrential rains fell everywhere in the country. From 28 May onwards, temperatures reached up to 38-40°C, with minimum temperatures of 30-32°C at foothills, which was unexpected at that period of the year. The harvest of winter crops started in Khatlon. The harvest of early onion crops and stone fruits was completed. Forecast from the national meteorological centre indicate that June temperatures should be 5-8°C warmer than in the previous years.

In Uzbekistan, the weather was hot in April with average day temperature of 30°C. The grass cover was less dense as compared to previous years.

Area Treated in May 2013

Afghanistan	35,382 ha
Azerbaijan	33,900 ha
Georgia	2,000 ha
Kazakhstan	712,690 ha (incl. 6,900 ha by air)
Kyrgyzstan	30,560 ha
Russia	174,380 ha
Tajikistan	79,429 ha
Uzbekistan	150,000 ha (up to 20 may)

Locust Situation and Forecast

(see also the summary on page 1 and maps on last page)

CAUCASUS

Armenia

• SITUATION

During surveys carried out in low-lying areas, solitary locust hoppers only were seen and no mass hatching was observed. No hatching at all was observed at foothills or in mountainous areas.

• FORECAST

CIT will fledge in July. It is expected that local infestations only will be present without spread out. Limited control operations will take place as needed.

Azerbaijan

• SITUATION

In all DMA outbreak areas of the country, i.e. in the main ones (Djeiranchel area, Eldar steppe in the northwest, Garasu, Padar plain in the east, Haramin plain in the south central) as well as in the smaller ones (Lopatin plain in the south-east, Acinohur in the north central and at the border Iran), 4th and 5th instar DMA hoppers prevailed and fledging started. Ground control operations were in progress in these areas using low-volume sprayers mounted on tractor trailers, knapsacks and hand-held sprayers to spray pyrethroids. A total of 33,900 ha were treated, i.e. 4 times the area controlled in April. Awareness campaigns continued to inform farmers and rural inhabitants on spraying operations.

• FORECAST

With warming and persistence of suitable weather conditions, the hopper development will be fostered.

Therefore, it is expected that DMA hopper development will come quickly to an end during the forecast period and that fledging will occur and egg-laying start. Control operations will continue.

Georgia

• SITUATION

During surveys carried out on 30,000 ha, DMA hoppers of 3rd and 4th instars were observed, which reached the 5th instar at the end of May. CIT hatching was also detected and, by the end of the month, 3rd instar hoppers represented 80% of the population while 2nd and 4th instar hoppers counted for 10% each. Organophosphate, pyrethroid and IGR in ULV formulations were used during ground control operations. A total of 2,000 ha were treated of which 1,800 ha in Kakheti region (1,200 ha in Dedoplistskaro, 500 ha in Signagi and 100 ha in Akhmeta) and 200 ha in Kvemo Kartli region.

• FORECAST

It is expected that CIT hoppers will cause a major threat to crops in Signagi and Dedoplistskaro areas. Therefore, aerial control operations are scheduled in Kakheti region from early June onwards.

CENTRAL ASIA

Afghanistan

• SITUATION

In May, surveys were carried out in eight northern and northeastern provinces, namely Badakhshan, Baghlan, Balkh, Jowzjan, Kunduz, Samangan, Sar-i-pul and Takhar, where DMA 4th instar hoppers and adults were observed.

Movements of swarms from Tajikistan were observed in Takhar. Ground ULV control operations using two different pyrethroids and one IGR were undertaken in the same eight provinces over a total of 35,382 ha (almost half of the area treated in April).



• FORECAST

DMA will fledge and start mating and laying eggs. A particular attention will be dedicated to swarms arriving in remote areas, where they will lay eggs.

Kazakhstan

• SITUATION

During DMA surveys carried out on more than 1 million ha in South-Kazakhstan, 237,000 ha were found infested by 2nd to 5th instar hopper bands (5th instar prevailing with 38% of the whole population) and groups of young imagos (10% of the population). In Zhambyl, 13,150 ha out of the 47,000 ha surveyed were infested by 3rd to 5th instar hopper bands (5th instar representing more than half of the population) and first groups of young adults (4%). Almost 109,200 ha were treated against DMA hoppers of which 101,680 ha in South-Kazakhstan.

CIT egg-pod monitoring came to an end in May with a total of 375,660 ha surveyed of which 111,580 ha were found infested. The number of eggs per pod ranged from 7 to 50 and damage to egg-pods varied from 0.2 to 70%. In the south, depending on the areas, hatching started in the 3rd week of April and lasted up to mid-May, but was still observed up to 24 May. At the end of the month, the 1st to 5th instar hoppers were present, at density ranging from 1-5 to 3-10 hoppers/m² on average and reaching up to 12-18 hoppers/m². In the west, hatching started from 8 to 16 May and lasted up to the end of the month. In Aktobe, the density was of 1,000-1,500 hoppers of 1-2 instar/m² and 235,183 ha were treated. In West Kazakhstan, the density was usually of 1-76 hoppers of 1-3 instars/m² and reached up to 500 hoppers/m² locally. In the east, hatching started in the 2nd decade of May. In the central and northern parts, hatching started in the 3rd decade of May and density of 1st instar hoppers ranged from 25-30 (Karaganda) to

73-100 (Kostanai) individuals/m². No hatching was observed in North-Kazakhstan. As a whole, surveys were carried on almost 2.9 million ha, of which 838,450 ha were infested (hopper densities up to 5 hoppers/m² on 239,150 ha, up to 10 on 326,300 ha and higher than 10 hoppers/m² on 273,000 ha). A total of 599,340 ha were treated against CIT hoppers.

LMI egg-pod monitoring came also to an end; a total of 91,960 ha were surveyed of which 10,666 ha were found infested. The number of eggs per pod ranged from 18 to 95 and damage to egg-pods varied from 1.5 to 23%. In the south, hatching started on 12 May and continued throughout the month in the different oblasts. The density ranged from 1-5 to 8-12 hoppers/m². In the west (Atyrau), hatching started during the 2nd half of May. In the east and north, no hatching was observed but egg-fields were identified. LMI surveys were carried on almost 153,100 ha, of which 12,130 ha were infested (hopper density up to 5 hoppers/m² on 7,960 ha, D up to 10 on 3,180 ha and D higher than 10 hoppers/m² on 1,000 ha). A total of 4,170 ha were treated (Atyrau 2,410 ha; Kyzylorda 1,760 ha) against LMI hoppers.

On the whole, 4,072,910 ha were surveyed, 1,101,255 ha were found infested and 712,690 ha were treated in May against hopper infestations of the three locust pests, i.e. more than 10 times the area sprayed in April.

• FORECAST

DMA mating and egg-laying are expected during the 1st half of June in South-Kazakhstan. In Zhambyl, mass fledging will occur during the 1st half of June and mating should start during the 2nd half of the month. CIT mass hatching will continue during the 1st decade of June in the south and fledging, followed by mating and egg-laying, will start during the 3rd one. In the west, fledging will start during the 2nd decade of June. In the central and northern parts, hopper development will continue. In the north, hatching is expected at the end of the 1st decade of June in Akmola and North-Kazakhstan and during the 1st half of June in



Pavlodar.LMI mass hatching is expected during the 2nd half of June in the south; hatching should start in early June in Kostanai, while it is expected for the 1st decade of June in West-Kazakhstan.

Kyrgyzstan

• SITUATION

During surveys carried out on 65,559 ha in Batken, Chui, Jalal-Abad, Naryn, Osh and Talas, 40,979 ha were found infested at density ranging from 2 to 65 hoppers/m². CIT hopper infestations were present in Naryn and Talas on 1,834 ha and 2,060 ha respectively. DMA hoppers were present in Chui and, mixed with prevailing CIT, in Batken, Jalal-Abad and Osh, which complicated the control operations as there were several waves of hatching. An aircraft had to be hired in Jalal-Abad because of the large-scale outbreak extending to areas inaccessible by ground. A total of 30,560 ha (of which 6,900 ha by air) were treated against CIT (1,100 ha in Talas), DMA (800 ha in Chui) and mixed CIT and DMA populations (5,410 ha in Batken, 20,850 ha in Jalal-Abad and 2,400 ha in Osh), i.e. 10 times the area controlled in April.

• FORECAST

DMA hopper development will come to an end and fledging will occur at the beginning of the forecast period. CIT hopper development will continue in the already infested areas and mass hatching is expected during the 1st decade of June in Naryn.

Russian Federation

• SITUATION

In May the hopper development of the three locust pests was in progress with a prevalence of 1st to 3rd instars; 4th instar was only observed locally. The density was of 0.8-6.9 hoppers/m² in Central FD, 11-250 hoppers/m² in North Caucasus FD, 20-

1,000 hoppers/m² in Southern FD, 10-1,000 hoppers/m² in Volga FD and 3-10 hoppers/m² in Siberian FD. A state of emergency was declared on 27 May in 35 districts and cities of Orenburg oblast (Volga FD). A total of 82,040 ha were sprayed in May, of which 780 ha in the Central FD, 14,030 ha in North Caucasus FD, 12,250 ha in the Southern FD and 54,980 in the Volga FD. In addition, mechanical control operations were undertaken on 92,340 ha in Orenburg, Dagestan and Altai.

• **FORECAST**

Hopper development of the three locust pests will continue and fledging will occur during the forecast period.

Tajikistan

• **SITUATION**

Following the earlier than usual DMA hatching, survey and control operations against hopper infestations continued throughout the month of May. Similar operations also started against CIT, whose mass hatching occurred during May in Sughd. As the natural vegetation dried out quickly in the mountainous and foothill areas, locusts moved towards the valleys, where repeated sprayings were needed in some areas. A total of 163,411 ha were surveyed of which 80,366 ha were found infested. Control operations were carried out on 79,429 ha (more than twice the area treated in April), of which 50,905 ha in Khatlon and 11,451 ha in RRS against DMA hopper bands, 15,973 ha in Sughd against DMA and CIT infestations and 1,100 ha in Gorno-Badakhshan against grasshoppers.

• **FORECAST**

DMA mass mating and egg-laying will occur during the forecast period. CIT will complete its hopper development and fledge. It is expected that intensive survey and control operations will have to be carried out for another month.



Turkmenistan

• **SITUATION**

No bulletin was received for June.

• **FORECAST**

DMA is expected to mature and lay eggs during the forecast period.

Uzbekistan

• **SITUATION**

DMA hopper development came to an end and fledging started from 10 May in the south (Kashkadarya and Surkhandarya provinces) and in the centre-north (Navoi); mating started from mid-May in the south. As it was the case in 2012, DMA was also present in mountainous areas, up to 2,500 m, where 4th and 5th instar hoppers were observed; this recent behavior change is worrying. Up to 20 May, 147,000 ha were treated in the three aforementioned provinces. In the Aral Sea delta, LMI hopper development was in progress within an area of 111,000 ha, of which 2,000 ha were treated against 1st instar hopper bands (2nd instar represented 10% only of the population on 20 May). Limited control operations (1,000 ha) were also carried out against CIT hopper infestations along ditches and canals and in fallow lands. The highest density was of 20-27 hoppers/m².

• **FORECAST**

During the forecast period, DMA egg-laying will occur and life cycle will be completed except in the mountainous areas. CIT will fledge and breed. It is expected that LMI hatching will occur until the end of July when water will recede from currently flooded areas.

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 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.

May 2013 events and activities. The following activities occurred or were ongoing:

- **Training session on locust monitoring and information management** delivered by Mr A.V. Latchininsky in Astrakhan, **Russia**, on 13-17 May 2013, to 18 Kazakh and Russian locust experts.
- **Training session on mitigating and monitoring the impact of locust control operations on human health and the environment** delivered by Mr H. van der Valk in Khudjand, **Tajikistan**, on 27-31 May 2013, to 12 locust experts.



- Ongoing process for the delivery of **pesticides to Kyrgyzstan and Tajikistan** against the two national FAO projects.
- **Joint survey** on 18 May 2013 in Astrakhan, **Russia**, with Kazakh and Russian locust experts.
- **E-Committee on documentation:** lists of the most recommended publications finalized for CIT, DMA and LMI.
- **Asian Migratory Locust outbreak in Uzbekistan:** survey and needs assessment mission carried out by Mr A.V. Latchininsky and Mr F. Gapparov on 1-9 May 2013 in the Aral Sea Delta.
- Ongoing **fund-raising activities** by AGPMM.

June 2013 events and activities. The following activities are scheduled:

- **Training session on mitigating and monitoring the impact of locust control operations on human health and the environment** to be delivered by Mr H. van der Valk on 3-7 June 2013 in Naryn, **Kyrgyzstan**.
- **Joint survey** scheduled on 18-20 June 2013 in Sughd region, **Tajikistan**, with locust experts from Afghanistan, Tajikistan, Uzbekistan and Turkmenistan.
- Meetings with some high-level countries' delegations during the **38th FAO Conference**, in Rome, Italy, on 15-22 June 2013.

We would like to reiterate our condolences and deepest sympathy to our Kyrgyz colleagues, following the tragic airplane accident that took place on 24 May, during locust control operations.

