



## LOCUST BULLETIN No. 30



FAO - Plant Production and Protection Division (AGPM)

15 July 2014

**Situation level: THREAT due to the Italian Locust (CIT) in Georgia and Kazakhstan and to the three locust pests in Russia**

**Situation level - CAUTION in Afghanistan (Moroccan Locust, DMA) as well as in Kyrgyzstan and Tajikistan (CIT)**

**Situation level: CALM elsewhere, in Armenia, Azerbaijan and Uzbekistan**

### General Situation during June 2014 Forecast until mid-August 2014

In June, the locust situation deteriorated further in Caucasus as well as in northern Central Asian countries. While the life cycle of Moroccan Locust (DMA) that survived previous control operations was coming to an end in most countries, successive and important waves of Italian Locust (CIT) hatching occurred. Asian Migratory Locust (LMI) hopper development was in progress and fledging started in some areas. Overall, control operations were carried out on more than 4.9 million hectares (ha) in Caucasus and Central Asia (CCA), a fourfold increase as compared to the previous month. Control operations will continue in northern Central Asian countries during the forecast period. The situation level was again qualified as caution or threat by most of the countries.

**Caucasus.** DMA hopper development was coming to an end, fledging was in progress and mating started in Azerbaijan, where 53 241 ha were treated. In Georgia, control operations focused on CIT hopper bands and 19 809 ha were treated. In Armenia, CIT

hatched but no control operations were carried out so far.

**Central Asia.** DMA adults only were present in Afghanistan, Kazakhstan, Uzbekistan and probably in Tajikistan and Turkmenistan while hopper development was still in progress 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 Russia and Uzbekistan and fledging started in some areas of Kazakhstan. Almost 4.9 million ha were treated in June against the three locust pests in Central Asia alone, of which 82% in Kazakhstan and 12.6% in Russia.

### Weather and Ecological Conditions in June 2014

Warm and generally dry weather prevailed throughout Caucasus and Central Asia, except in Armenia. Rains fell at times in Georgia, Kazakhstan, Kyrgyzstan and Russia. Nevertheless, the natural vegetation was drying out.

In **Caucasus**, the weather was mostly warm and dry except in Armenia.

In Armenia, the weather continued to be rainy; rains fell at an average of 21 to 23 days in most areas and there were thunderstorms. The most important rainfalls (100-114 mm) were reported in the mountainous and foothill areas; elsewhere it was 25-30 mm. The average daily air temperature was generally higher than normal. Temperatures ranged from +16/+18°C to 36/38°C in the lowlands, from 6/12°C to 30/34°C at foothills and from 1/6°C to 27/31°C in mountainous areas. The average relative humidity was of 78-85% dropping to 63-67% in the Ararat Valley. Agricultural activities continued but were hampered by heavy rains and hail, which caused damage to fruit orchards, especially stone fruit and vegetable crops. Fruit harvesting continued in low-lying areas. The natural vegetation was mostly green with a dense cover in lowlands and foothills. The weather conditions were suitable neither for the development of agricultural crops nor for the hopper development, which were delayed everywhere.

In Azerbaijan, the weather was mostly warm and dry except on 20/22 and 28/29 June when heavy rains fell, suitable for locust development. Day temperatures were of 32/36°C with peaks at 34/38°C. Prevailing winds were from south-east and north-west at a speed ranging from 3 to 5.7 m/s reaching 18/20 m/s in gusts. Natural vegetation was dry; agricultural crops were mature and the winter wheat harvest started.

In Georgia, the weather was hot with average temperatures of 30/35°C and sometimes more. There were five rainy days. Drying and dry natural vegetation had a medium cover.

In **Central Asia**, weather was generally warm and dry but rains fell at times in Kazakhstan, Kyrgyzstan and Russia.

In Afghanistan, the weather was very hot with no rain. Natural vegetation ranged from green to dry according to local weather conditions.



In Kazakhstan, the weather was generally warm and dry. In the South, the weather was clear with some rains. Average temperatures ranged from 12°C to 37°C with minimum of 5°C and maximum up to 48°C. Relative humidity varied from 10 to 88%. Variable winds had a speed of 1-17 m/s. In the East, variable and cloudy weather during the first 10 days was followed by sunny and hot conditions with some rains. The average temperature was of 18.8°C with minimum of 0°C and maximum of 37°C. Relative humidity was of 62.3%. Wind speed was of 0-5 m/s. In the West, the weather was clear and sunny with light rains. The average temperatures ranged from 11.2 to 34°C with minimum of 4.8°C and maximum of 40°C. The relative humidity varied from 14 to 84%. Prevailing winds had a speed of 0.3-12 m/s. In the North, the weather was clear and sunny with light rains. The average day temperatures ranged from 8°C to 33°C, with minimum of 0.3°C and maximum of 39.9°C. The relative humidity ranged from 28 to 94%. The wind speed was of 1-20 m/s with gusts up to 43.4 m/s.

In Kyrgyzstan, the average monthly temperature was of 21/23°C in the North, ranging from 12/17°C during the night to 30/35°C during the day. In the South, the average monthly temperature was of 22/24°C in the plains and of 16/18°C at foothills, ranging from 14/19°C during the night to 31/36°C during the day in the plains and from 9/14°C during the night to 26/31°C during the day at foothills. Rains ranged from 50-130 mm in the North and 400-420 mm in the South. The relative humidity ranged from 60 to 75%. The natural vegetation was dry, with a medium cover and a height ranging from 2 to 5 cm.

In the Russian Federation, weather was mostly warm. In southern regions of Central Federal District (FD), weather was mostly warm and dry during the 1<sup>st</sup> half of June, with temperatures ranging from 21 to 36°C; then, they dropped to 15-20°C. In North

Caucasus and Southern FD, the 1<sup>st</sup> half of June was characterized by high temperatures and uneven heavy rains, sometimes with hail. Temperatures ranged from 16-20°C at night to 25-35°C during the day. In the Volga FD, the weather was generally warm and rains fell locally. Temperatures were of 16/20°C with maximum of 28°C.

In Tajikistan, the temperatures were higher by 6-12°C than in June 2013 throughout the country. The minimum temperatures were of 36-41°C in Smolensk area, 32-36°C in Sughd and 34-38 in Region of Republican Subordination (RRS), which was unexpected for that period. Cotton and vegetable crops were developing while harvest of winter crops was in progress. In southern Khatlon, harvest of melons, onions and stone fruits was almost complete.

In Uzbekistan, temperatures in June were 3-5°C above normal and reached 47°C in the shade in Kashkadarya, Surkhandarya and desert areas. The natural vegetation was totally dry.

## Area Treated in May 2014

Afghanistan	32 345 ha
Azerbaijan	53 241 ha
Georgia	19 809 ha
Kazakhstan	4 017 318 ha
Kyrgyzstan	53 562 ha
Russia	631 700 ha
Tajikistan	21 163 ha
Uzbekistan	113 872 ha

## Locust Situation and Forecast

(see also the summary on page 1)

### CAUCASUS

#### Armenia

##### • SITUATION

During surveys carried out on 20 000 ha, plant protection experts observed locust and grasshopper populations on 14 000 ha at density not exceeding the



economical threshold. Italian Locust (CIT) hoppers were observed in four oblasts at a maximum density of 5 individuals/m<sup>2</sup> except in the Ararat oblast where small groups formed at a density of 10/15 hoppers/m<sup>2</sup> on 1 000 ha in two farms.

##### • FORECAST

*During the forecast period, CIT hoppers will fledge and adults will appear by the end of the forecast period. Local infestations will be controlled by the farmers, using tractors and hand sprayers with pesticides (mainly pyrethroids) provided by the Ministry of Agriculture. No infestation from the two other locust pests is expected unless they arrive from neighboring countries.*

#### Azerbaijan

##### • SITUATION

In four out of the seven Moroccan Locust (DMA) outbreak areas, i.e. Djeiranchel Eldar steppe in the northwest, Garasu/Padar plains in the east, Haramin plain in the central south and Lapatin plain in the East, the hopper development was coming to an end. Hoppers of the 5<sup>th</sup> instar only were still present together with fledglings and mature adults, some of them copulating. Ground control operations continued in Djeiranchel Eldar steppe and Garasu/Padar plains using pyrethroids in EC formulation. The mortality was of 85/90%. A total of 53 241 ha were treated.

##### • FORECAST

*All hoppers having escaped control operations will have fledged before mid-July. Warm weather will speed up adult maturation and beginning of mass mating and egg-laying is expected during the 2<sup>nd</sup> decade of July.*

#### Georgia

##### • SITUATION

CIT hopper development was coming to an end in

June and, at the end of the month, adults were observed during surveys carried out in Kakheti (40 000 ha) and Kvemo Kartli (10 000 ha) regions. Control operations concerned 19 809 ha, of which 89% in Kakheti (mainly in Signani and Dedoplistskaro) by air (one third) and ground. In Kvemo Kartli, all treatment was ground based. Damage was reported on wine yards, sorghum, sunflowers, winter pastures, melon and watermelons.

Results of survey and control operations are available on [www.locust.kz](http://www.locust.kz).

• **FORECAST**

*Control operations against CIT will continue in July in Kakheti, where more damage is expected.*

**CENTRAL ASIA**

**Afghanistan**

• **SITUATION**

In June, only DMA adults were present, which were observed flying, mating and laying eggs. Control operations using pyrethroids in Ultra-Low Volume (ULV) formulation were carried out against these DMA adult infestations on a total of 32 345 ha in hills, deserts and arable areas of the eight northern, north-eastern and north-western provinces, mainly in Baghlan (14 946 ha), Kunduz (5 163 ha), Takhar (5 100 ha) and Samangan (4 006 ha) provinces. In the remaining four provinces, the treated areas ranged from 120 (Balkh) to 1 455 ha (Herat). Control operations were completed at the end of June in Baghlan, Balkh, Herat, Kunduz and Samangan provinces.

• **FORECAST**

*Control operations will continue against adult infestations in some northeastern and northwestern provinces.*

**Kazakhstan**

• **SITUATION**

DMA breeding surveys were carried out in South Kazakhstan and Zhambyl oblasts on 544 140 ha, of



which 179 929 ha were infested. In South Kazakhstan, massive mating and egg-laying were observed followed by natural death of the adults. In Zhambyl, after fledging which started on 10-13 May, mating was observed on 12-15 June, beginning of egg-laying on 22 June and natural death as of 27 June.

CIT situation varied a lot throughout the country. In the South, fledging started during the 3<sup>rd</sup> decade of June. During breeding monitoring carried out on 26 550 ha in South-Kazakhstan, neither mating nor egg-laying adults were found. In Zhambyl, 3<sup>rd</sup> to 5<sup>th</sup> instar hoppers as well as adults, of which some in copulation, were present with prevalence of the 5<sup>th</sup> instar (50% of the locust population). In Almaty, 3<sup>rd</sup> to 5<sup>th</sup> instar hoppers and adults were present, with prevalence of 4<sup>th</sup> and 5<sup>th</sup> instars (more than 50% of the population). In Kyzylorda, 3<sup>rd</sup> to 5<sup>th</sup> instar hoppers were present with prevalence of the 4<sup>th</sup> instar (45% of the hopper population). In the central part of the country, in Karagandy, 4<sup>th</sup> and 5<sup>th</sup> instar hoppers (at a density of 15-20/m<sup>2</sup>) as well as adults were observed, with prevalence of adults (50% of the population). In the West, hoppers formed bands, at a density of 32-38 hoppers/m<sup>2</sup>; fledging started on 8 June with mass fledging from 17 June and beginning and mass mating on 21 and 25 June respectively. In Atyrau, 3<sup>rd</sup> to 5<sup>th</sup> instar hoppers and adults were present on 19 June, with prevalence of 4<sup>th</sup> instar (44% of the population). In West-Kazakhstan, where hopper development lasted

34 days, 5<sup>th</sup> instar hoppers and adults (79% of the population) were observed on 26 June. In Aktobe, 3<sup>rd</sup> to 5<sup>th</sup> instar hoppers were present on 27 June with prevalence of 4<sup>th</sup> instar (from 57 to 70% of the population). In the East, hatching, which started on 16 May, was highly progressive and 1<sup>st</sup> to 3<sup>rd</sup> instar hoppers were present in June with prevalence of 1<sup>st</sup> and 2<sup>nd</sup> instars (75 to 90% of the hopper population). In the North, hatching occurred from 11 May to 13 June

(with mass hatching on 10-13 June). In Kostanay, 1<sup>st</sup> to 5<sup>th</sup> instar hoppers and adults were present on 30 June, with prevalence of 3<sup>rd</sup> instar (48% of the population). Within the bands, density was of 270 hoppers/m<sup>2</sup>. In Akmola, 1<sup>st</sup> to 5<sup>th</sup> instar hoppers, at a density up to 34 hoppers/m<sup>2</sup>, as well as adults were present on 28 June, with prevalence of 3<sup>rd</sup> instar (up to 45% of the population). Fledging started on 25 June. In Pavlodar, 1<sup>st</sup> to 5<sup>th</sup> instar hoppers, at a density up to 112 hoppers/m<sup>2</sup>, as well as adults, which started appearing on 26 June, were present on 27 June; 3<sup>rd</sup> instar prevailed, representing up to 50% of the population. In North-Kazakhstan, 1<sup>st</sup> to 5<sup>th</sup> instar hoppers were observed, with 3<sup>rd</sup> instar representing 50 to 60% of the hopper population. CIT hopper surveys were carried out on more than 12 million ha, of which almost 5 million were infested at an average density varying from 5 to more than 10 hoppers/m<sup>2</sup>. Control operations were undertaken on more than 3.6 million ha against CIT.

In the South, LMI hatching occurred from late May to the 1<sup>st</sup> decade of June. In Kyzylorda, 3<sup>rd</sup> to 5<sup>th</sup> instar hoppers, at a density varying from 2.5 to 12 hoppers/m<sup>2</sup>, were present with prevalence of 5<sup>th</sup> instar (55% of the population). In Almaty, 2<sup>nd</sup> to 4<sup>th</sup> instar were present on 30 June with prevalence of the 4<sup>th</sup> instar (50 to 60% of the population); the average density was of 5-10 hoppers/m<sup>2</sup> reaching 10-17 hoppers/m<sup>2</sup> in Balkhash area. In Zhambyl, 1<sup>st</sup> to 3<sup>rd</sup> instar hoppers were observed on 30 June with prevalence of 2<sup>nd</sup> instar (37% of the population); the density varied from 1 to 10 hoppers/m<sup>2</sup> in infested areas. In the West, hatching started on 26 May in West-Kazakhstan with mass hatching from 30 May. In June, all instar hoppers were present with prevalence of the 2<sup>nd</sup> one (29%); the density varied from 1 to 12 hoppers/m<sup>2</sup>. In Aktobe, hatching started on 4 June. In Atyrau, 3<sup>rd</sup> to 5<sup>th</sup> instar hoppers and adults (with prevalence of 4<sup>th</sup> instar) were present during the 3<sup>rd</sup> decade of June. In the East, hatching started on 29 May but surveys could not be carried out because



of areas still flooded. In the North, hatching occurred on 4-10 June in Akmola; on 26 June, 1<sup>st</sup> and 2<sup>nd</sup> instar hoppers, at a density of 0.1 to 5.2/m<sup>2</sup> were observed, with 1<sup>st</sup> instar representing 60 to 70% of the population. In Kostanay, where hatching started on 11 June, 1<sup>st</sup> and 2<sup>nd</sup> instar hoppers were present on 19 June at density up to 440 hoppers/m<sup>2</sup>. Hopper surveys were carried out on more than 2.4 million ha, of which 513 183 ha were infested. A total of 358 920 ha were treated against LMI.

A total of 4 017 318 ha were treated against CIT and LMI hopper bands.

• **FORECAST**

*In South Kazakhstan, the DMA life cycle will be completed during the 1st half of July while mass mating and egg-laying followed by natural death will occur in July in Zhambyl.*

*It is expected that, in the South, CIT mass fledging will start during the 1st decade of July, followed by mating and egg-laying with completion of the life-cycle by the end of July. In Karagandy (central part), fledging should be completed by mid-July and be followed by mating and egg-laying for locusts having escaped control operations. In the West, all uncontrolled hopper bands will fledge and related mating and egg-laying will start during the 1st decade of July. In the East, fledging should start during the 1st decade of July and be followed by mating and egg-laying by mid-July. In the North, fledging is expected to occur during the 1st and 2nd decades of July. In Kostanay, mass fledging as well as beginning of mating and egg-laying should take place in mid-July. In Akmola, fledging, which started in late June, will continue during the 1st half of July, followed by mating and oviposition during the 2nd half of the month. A similar situation will occur in Pavlodar while fledging will not start before mid-July in North-Kazakhstan.*

*It is expected that LMI will start fledging during the 1st decade of July, mating during the 2nd and egg-laying by the end of the month. In the West, mating should start during the 1st half of July. In the East, mass fledging should occur during the 2nd decade of July, followed by mating and egg-laying at the end of the month. In Kostanay, hopper development should be speeded up by warm weather conditions.*

## **Kyrgyzstan**

### **• SITUATION**

During DMA surveys carried out on 68 661 ha in four oblasts, 50 605 ha were found infested at density ranging from 9 to 23 hoppers/m<sup>2</sup>. The main infested oblasts were Jalal-Abad and Batken, totalling 84% of the whole DMA infested areas. A total of 46 350 ha (22 704 ha in Jalal-Abad; 18 495 ha in Batken; 5 1500 ha in Osh and 1 ha in Talas) were treated.

During CIT surveys carried out on 13 391 ha in three oblasts, 9 192 ha were found infested, mainly in Jalal-Abad. A total of 7 212 ha (6 200 ha in Jalal-Abad, 550 ha in Chui and 462 ha in Naryn) were treated.

A total of 53 562 ha were treated by ground using organophosphates, phenyl-pyrazole, pyrethroids and neonicotinoid in ULV (84% of the treatments) and EC formulations.

### **• FORECAST**

*DMA life cycle will come to an end in July. CIT hopper development will continue and fledging occur in Jalal-Abad and Chui while hatching will continue until late July in Naryn.*

## **Russian Federation**

### **• SITUATION**

Because of unstable weather conditions, locust and grasshopper hatching was spread out over a longer period than usual. In June, grasshopper fledging, mating and egg-laying occurred while locust hoppers formed bands. In Dagestan (extreme south-west), DMA copulated and started laying eggs. The average density was of 1.6 hoppers/m<sup>2</sup> in the Central Federal



District (FD), 19.8 hoppers/m<sup>2</sup> in the Southern FD, 17.2 hoppers/m<sup>2</sup> and 15 adults/m<sup>2</sup> in the North Caucasus FD, 6.6 hoppers/m<sup>2</sup> in the Volga FD and 1.43 hoppers/m<sup>2</sup> in the Siberian FD. A total of 631 700 ha were treated.

### **• FORECAST**

*Development of grasshoppers and locusts will continue during the forecast period.*

## **Tajikistan**

### **• SITUATION**

DMA fledged and adults moved to the green crop fields after natural vegetation dried out. Massive CIT hatching occurred in successive waves, mainly in northern Sughd, and hoppers formed bands. That complicated control operations and repeated treatments were needed in some areas. However, no damage was reported thanks to timely operations. A total 21 163 ha were treated in June.

In June, public was regularly informed about locust control measures through TV spots and other media.

### **• FORECAST**

*CIT hopper fledging will occur and be followed by mating and egg-laying in most areas in July. Therefore egg-bed surveys will be carried out in July, mainly in areas bordering the neighboring countries.*

## **Turkmenistan**

### **• SITUATION**

No bulletin was received for the fourth consecutive month.

### **• FORECAST**

*Locust life cycles should be completed and the situation should be quiet.*

## **Uzbekistan**

### **• SITUATION**

Important infestations of CIT as well as of two other

species of the genus *Calliptamus* have been reported in Jizzah, Navoi and Samarkand provinces, in the north central part of the country. The last similar outbreak occurred in 1993. Control operations were in progress against CIT populations at a daily rate of 885 ha. In June 113 872 ha were treated resulting in a total treated area of 330 872 ha since the beginning of the campaign, of which more than 75% against DMA, 15% against LMI and almost 10% against CIT.

• **FORECAST**

*It is expected that late LMI hatching will occur in Karakalpakstan after flood waters have receded. Surveys will therefore be carried out.*

## 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](mailto:CCA-Bulletins@fao.org). Monthly information received by the 5<sup>th</sup> 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.



### **June 2014 events and activities.**

- **Monitoring system on quality control and efficacy of locust treatments:** A pilot activity, including on-the-job training for four national technical staff, was conducted by Mr H. van der Valk, Environmentalist Expert, on 1-12 June in Khatlon Province, Tajikistan. Monitoring and sampling material was supplied to the country.
- **Post-graduate fellowships on locusts:** The application procedure and selection criteria both for hosting institutions and candidates were reviewed by the E-committee composed by locust experts from FAO and CCA.
- **Study to identify the best long-term solution for regional locust cooperation and management in CCA:** preparatory work in progress.

### **Forthcoming events and activities in July 2014.**

- **Joint survey:** A joint survey involving six plant protection/locust specialists from Afghanistan and Tajikistan (three per country) will be carried out in Khatlon Province, Tajikistan, on 7-11 July (initially planned in June).
- **Locust insecticides' residues:** In order to measure the decline rate of the residues on pasture for various insecticides used in locust control, as well as establish appropriate re-entry periods for livestock, a study on the "Fate of insecticides used for locust control on pasture in Kyrgyzstan" (initially planned in June) will be conducted on 2-11 July by Ms A. Gorbunova, Toxicologist, together with Mr A. Alakunov, Chief specialist, Division of Plant Protection and Pesticide Registration. Sampling material will be supplied to the country.

- **Pesticides and empty container management:**

To improve management practices of pesticides used for locust control as well as empty containers (storage, disposal, etc.), a plan will be developed by Mr R. Denny, Pesticide Risk Reduction Expert, in collaboration with the Chemicals and Plant Protection Department, Ministry of Agriculture, Kyrgyzstan. A mission is scheduled on 20-30 July to that end.

CCA LOCUST BULLETIN  
N.30 – JUNE 2014





