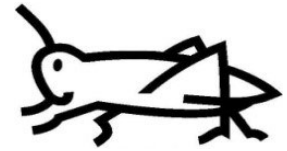




## LOCUST BULLETIN No. 61



FAO - Plant Production and Protection Division (AGP)

15 May 2019

**Situation level: CAUTION in Afghanistan, Kyrgyzstan, Tajikistan and Uzbekistan for DMA**

**Situation level: CALM everywhere for the three locust pests**

### General situation during April 2019

#### Forecast until mid-June 2019

Moroccan Locust (DMA) hopper development was in progress in all Central Asian (CA) countries except the Russian Federation as well as in Azerbaijan and probably in Georgia. Because of the cool and wet weather, hopper development was delayed in most countries, and control operations were carried out on significantly smaller areas than in April 2018 (except for Kyrgyzstan). During the forecast period, DMA fledging will occur in most countries while hatching followed by hopper development will take place in the Russian Federation and generalize in Azerbaijan and probably Georgia. Italian Locust (CIT) hatching will start in CCA countries progressively from south to north. LMI hatching will also start at the end of the forecast period. Since the beginning of the national campaigns, 122 408 ha have been treated against DMA hoppers, about four times less than in 2018.

**Caucasus.** DMA hatching started in mid-April in Azerbaijan and probably in Georgia. CIT hatching is not expected before May.

**Central Asia.** DMA hopper development was in progress in Afghanistan, southern Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan and probably also in Turkmenistan. So far CIT hatching was not reported. CIT and LMI egg-pod surveys were still in progress in Kazakhstan and the Russian Federation. DMA hopper development will come to an end and fledging will start in Central Asian countries during the

forecast period; hatching will start in the Russian Federation. CIT and LMI hatching will start in mid- to late May.

### Weather and Ecological Conditions in April 2019

Variable weather with moderate to heavy precipitation prevailed in most Central Asian countries, which resulted in slowing down DMA hopper development. In Caucasus, the weather was characterized by lower than usual temperatures and locally abundant precipitation.

In Caucasus, as far as Armenia and Azerbaijan are concerned, temperatures gradually increased at the end of the month only.

In Armenia, averaged daily temperature varied from 10 to 20°C in lowlands and from 5 to 15°C in foothills.

In Azerbaijan, weather was warm until 18 April with average daily temperatures ranging between 10 and 24°C. However, starting from 19 April, the daily temperature dropped down to only 4 to 8°C and abundant rains fell all over the country. Daily temperature increased again only from 25 April reaching 15 to 24°C. Vegetation was green and dense, 10 to 15 cm high.

In Central Asia, lower than multiannual average temperatures accompanied by locally abundant precipitation prevailed.

In Afghanistan, moderate to locally heavy precipitation occurred throughout the country. Its amount was higher than the multiannual average and significantly exceeded April rainfall of 2018. In mountainous areas, locally heavy snowfall was observed. Average daily temperatures were notably

lower than in 2018. Pasture vegetation was green and dense and wheat crop was mostly in flowering and grain-filling stages.

In Kazakhstan, the weather was variable and relatively rainy. In the South, the weather was variable, with precipitations in the form of rain and snow (up to 81 mm). Average daily temperature ranged from 4 to 20°C with minimum of -3°C (at night) and maximum of +26°C. Relative humidity ranged from 22 to 100 %. North-westerly and north-easterly winds prevailed at a speed of 1-7 m/s and up to 23 m/s in gusts. In the East, the weather was unstable with sharp temperature fluctuations and precipitations as rain and snow (42 mm). The average daily temperature was of 7.9°C with minimum of -12°C (at night) and maximum of +23°C. Relative humidity was of 63 %. North-westerly and south-easterly winds prevailed at a speed of 1-7 m/s and up to 17 m/s in gusts. In the West, the weather was variable with some precipitations in the form of rain and snow (5 to 36 mm). The average daily temperature ranged from -1.5°C to +19.5°C, with minimum of -7.1°C and maximum of +24.0°C. Relative humidity ranged from 27 to 96 %. North-westerly winds prevailed at a speed of 1-5 m/s. In the North, the weather was variable and cool with precipitations in the form of rain and snow (2.5 to 27 mm). The average daily temperature ranged from -3.9°C to 14°C with minimum of -6°C and maximum of 19°C. Relative humidity ranged from 21 to 92 %. South-and north-westerly winds prevailed at a speed of 1-7 m/s and up to 19 m/s in gusts.

In Kyrgyzstan, temperature was 1 to 2°C higher than the multiannual average ranged from 13 to 15°C in the plains and from 9 to 11°C at foothills. At night, the temperature ranged from 2/7°C to 8/13°C on plains and from 0/5°C to 6/11°C at foothills. Several nights with freezes from 0 to -2°C were observed. During the day, temperature varied from 15/20 to 23/28°C in the plains and from 10/15 to 17/22°C at foothills. The monthly amount of precipitation was close to the norm (from 29 to 72 mm) in the plains and above normal (from 45 to 157 mm) at foothills. Herbaceous vegetation consisted of grasses mixed with sages and ephemerals and was green with a 3-5 cm height and a medium cover.

In the Russian Federation, the weather was variable, both temperatures and rain showing frequent variations to the norm. In southern regions of the Central Federal District (FD), in the beginning of the month, average temperature ranged from 6.7°C to 8.4°C; in the end of the month it rose to 13-15°C, which is above normal. Rain was below the norm



and averaged 19.5 mm. In North Caucasus FD, the average temperature ranged from 7.6°C to 9.8°C occasionally rising to 19°C; rain amounted to 15-48 mm, which is below the norm. In the Southern FD, average temperature ranged from 7°C to 10.8°C occasionally rising to 20°C. Rain amount ranged from 13 to 57 mm, which is within the norm. In the Volga FD, average temperature ranged from 3°C to 7.6°C, i.e. within the norm. Rain amount ranged from 7.6 to 16 mm, i.e. below the norm. In the Ural FD, average temperature ranged from 3.6°C to 4.4°C, i.e. close to the norm. Rain amounted 10.3 mm, i.e. 50 % below the norm. In the Siberian FD, the average temperature ranged from 1.4°C to 3.2°C, i.e. close to the norm. Rain amount ranged from 5.8 to 24 mm. In the Far Eastern FD, the average temperature ranged from -0.8°C to +5.9°C and rain amount ranged from 4.5 to 26 mm.

In Tajikistan, average night temperature was 15°C during the entire month. The average daily temperature was 25°C during the first ten days of April and decreased to 21°C during the rest of the month, mostly because of frequent rain showers. Vegetation was green in the beginning of the month and became dense by the end of the month in Khatlon foothills.

In Uzbekistan, average daily temperature ranged from 17 to 22°C and heavy rains fell throughout the country until 25 April causing the development of dense (300-450 stems per m<sup>2</sup>) and tall (25-40 cm of height) herbaceous vegetation cover.

### Area treated in April 2019

Afghanistan	35 445 ha (from 25 March)
Azerbaijan	2 500 ha
Kazakhstan	3 800 ha
Kyrgyzstan	19 300 ha
Tajikistan	12 163 ha
Uzbekistan	49 200 ha

## Locust Situation and Forecast

(see also summary on page 1)



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### CAUCASUS

#### Armenia

- **SITUATION**

No locust monitoring took place because of cool and rainy weather and no locust development was expected.

- **FORECAST**

*Localized Italian Locust (CIT) hatching should start in in late May in Artashat and Ararat districts followed by hopper development.*

#### Azerbaijan

- **SITUATION**

Moroccan Locust (DMA) hatching started on 8-9 April on Kudrin plain in Imishli district where mass DMA hatching continued for 10 days. In Djeiranchel steppe, DMA hatching started on 22 April. At the end of the month, hoppers were still in the first and second instars.

- **FORECAST**

*Hopper development will continue during the forecast period with fledging starting by mid-June.*

#### Georgia

- **SITUATION**

No report was received. DMA hatching may have occurred at the end of April.

- **FORECAST**

*It is expected that DMA hoppers will be present during May and that CIT hatching will start in the second half of the month.*

### CENTRAL ASIA

#### Afghanistan

- **SITUATION**

DMA hopper development continued in Balkh. DMA hatching followed by hopper development occurred in five other provinces, Badghis, Baghlan, Kunduz, Samangan and Takhar. At the end of April, hoppers were in first through fourth instar. Because of cool and wet weather, hatching had not occurred in Ghor and Badakhshan. Because of security issues, monitoring was not conducted in Fariab, Jawzjan and

Sar-i-Pul provinces. Control operations started in six provinces – Badghis, Baghlan, Balkh, Kunduz, Samangan and Takhar.

- **FORECAST**

*Hopper DMA development followed by fledging will occur in the forecast period.*

#### Kazakhstan

- **SITUATION**

Spring egg-pod surveys were conducted for CIT, DMA and LMI, followed by hopper surveys for DMA in the south.

DMA egg-bed surveys have been completed in Turkistan and Zhambyl oblasts and concerned a total 125 400 ha. Egg-pods were found on only 13 400 ha (10.6 %). The number of eggs per pod varied from 14 to 33. From 9 to 50 % of egg-pods were found infested by parasites or affected by diseases. In Turkistan, DMA hatching started on 1 April. As of 30 April, out of 777 800 ha surveyed, only 3 900 ha were infested above the economical threshold (ET) by 2nd to 4th instar hoppers. An area of 3 800 ha was treated. In Zhambyl, DMA hatching started on 22 April, and hopper surveys continued. No control operations were conducted in April.

CIT egg-bed surveys were carried out on 101 300 ha throughout the country. Egg-pods were found on 22 400 ha (22.1 %) including at a density below 1 egg/pod/m<sup>2</sup> on 12 200 ha, up to 2/m<sup>2</sup> on 4 400 ha, from 2 to 5/m<sup>2</sup> on 4 500 ha, from 5 to 10/m<sup>2</sup> on 1 000 ha and above 10/m<sup>2</sup> on 300 ha. The number of eggs per pod varied from 10 to 45. From 1 to 50 % of the CIT eggs were infested by parasites or affected by diseases.

LMI egg-bed surveys were carried out on 27 300 ha in southern and western oblasts. Egg-pods were found on 2 800 ha (10.2 %) including at a density of 1 egg/pod/m<sup>2</sup> on 1 800 ha, up to 2/m<sup>2</sup> on 600 ha, from 2 to 5/m<sup>2</sup> on 300 ha, from 5 to 10/m<sup>2</sup> on 100 ha. The number of eggs per pod varied from 36 to 105. From 9 to 30 % of the LMI eggs were infested by parasites or affected by diseases.

In April, a total of 3 800 ha were treated against DMA

hoppers in Turkistan oblast only, a dramatic decrease compared to 158 300 ha treated against DMA in April 2018.

- **FORECAST**

*DMA hopper development will continue in May in Turkistan and Zhambyl with fledging expected to start by the end of the month. CIT and LMI hatching are expected to start during the 3rd decade of May.*

### **Kyrgyzstan**

- **SITUATION**

DMA hatching started on 2nd April in Jalal-Abad oblast and hopper development continued there. Hopper surveys were conducted on 26 755 ha out of which 21 170 ha were infested in two districts of Jalal-Abad oblast (Aksy and Nooken). Young hoppers gathered already in large (0.1 to 0.3 ha) and dense (average density of 7-16 hoppers/m<sup>2</sup>) groups and were feeding actively. A total of 19 300 ha were treated in these two districts. No hatching has occurred in Batken and Osh oblasts yet.

- **FORECAST**

*DMA mass hatching is expected to occur in early May in Batken and Osh oblasts while 4<sup>th</sup> and 5<sup>th</sup> instar hoppers should prevail in Jalal-Abad at that time. CIT mass hatching should start during the 2<sup>nd</sup> decade of May in Chui and Talas.*

### **Russian Federation**

- **SITUATION**

Spring egg-pod surveys continued in South and North Caucasus FDs and started in Ural and Volga FDs. In Stavropol region, out of 29 000 ha surveyed, locust egg-pods were found on 10 060 ha (34.6%) with average density of 0.62/m<sup>2</sup> and a maximum density of 20/m<sup>2</sup> on one hectare in Neftekumsky district. In Dagestan Republic, out of 41 470 ha surveyed egg-pods were found on 7 000 ha (16.9%), with average density of 0.8/m<sup>2</sup> and maximum density of 3/m<sup>2</sup>. In Ingushetia Republic, out of 1 200 ha surveyed egg-pods were found on 320 ha (26.7%) with maximum density of 0.7/2. In Kabardino-Balkaria Republic, out of 1 560 ha surveyed egg-pods were found on 190 ha (12.2%), with maximum density of 1/m<sup>2</sup>. In Chechnya Republic out of 9 530 ha surveyed egg-pods were found on 1 320 ha (13.9%) with maximum density of 0.8/m<sup>2</sup>. In Adygea Republic, all 100 ha surveyed were found infested with



egg-pods at average density of 0.11/m<sup>2</sup>. In Kalmykia Republic, out of 6 800 ha surveyed egg-pods were found on 1 150 ha (16.9%) with maximum density of 4/m<sup>2</sup> on 500 ha in Lagan district. In Krasnodar region, out of 3 900 ha surveyed egg-pods were found on 360 ha (9.2%) with maximum density of 1/m<sup>2</sup> (grasshoppers). In Astrakhan oblast, out of 14 650 ha surveyed CIT egg-pods were found on 910 ha, LMI egg-pods on 540 ha and grasshopper egg-pods on 50 ha, with maximum density of 3/m<sup>2</sup> (LMI) on 15 ha in Limansky district. In Orenburg oblast out of 300 ha surveyed 50 ha were found infested with maximum density of 2/m<sup>2</sup> in Sol'-Iletsy district. In Amur oblast, grasshopper egg-pods were found on 340 ha with average density of 0.48/m<sup>2</sup>. In Chelyabinsk, Rostov and Volgograd oblasts as well as in Karachaevo-Cherkessia and Northern Ossetia-Alania Republics locust egg-pods were not found during surveys.

- **FORECAST**

*It is expected that hatching of all locust and grasshopper species will generalize in May.*

### **Tajikistan**

- **SITUATION**

DMA mass hatching continued throughout the country in April and hopper development was in progress. Mid-instar hoppers gathered in band with densities from 150 to 300 hoppers/m<sup>2</sup>. Control operations started on 4 April and have been carried out on 12 163 ha up to 30<sup>th</sup> April, using 3 639 liters of pyrethroids.

- **FORECAST**

*DMA fledging will occur through the month of May while CIT hatching will probably start in late May. Therefore, control operations will progressively focus on the latter at the end of the forecast period.*

### **Turkmenistan**

- **SITUATION**

No report was received. In view of the situation in some of

the neighbouring countries, DMA hopper development should be in progress.

- **FORECAST**

*DMA hopper development should be completed in May.*

## **Uzbekistan**

- **SITUATION**

Hampered by cool and rainy weather, DMA hopper development was in progress but much slower than usual. In the south (Kashkadarya and Surkhandarya provinces), hoppers were in 3<sup>rd</sup> to 4<sup>th</sup> instars at the end of April. Hopper density in bands ranged from 45 to 80/m<sup>2</sup>. In the central and northern parts of the country, DMA hatching occurred from 17 to 23 April.

CIT and LMI hatching have not occurred yet in Karalpakstan because of unfavorable weather.

Control operations against DMA hopper bands took place only in the south in April and covered 49 200 ha. Pesticides used were pyrethroids and imidacloprid.

- **FORECAST**

*DMA fledging will occur second half of May while CIT and LMI hatching will start.*

## **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.

### **Events and activities in April 2019**

- **Training-of-Trainers in locust management:** national session on locust monitoring and information management, including the “Automatic System for Data Collection” (ASDC) and the GIS “Caucasus and Central Asia Locust Management System” (CCALM), delivered by the Georgian Master-Trainers to the benefit of 10 national Plant Protection/Locust Experts on 17-19 April 2019 in Kakheti, Georgia.
- **Practical Guidelines on pesticide risk reduction for locust control in CCA:** all five language versions (Dari, English, Kyrgyz, Russian and Tajik) under FAO internal quality check process and related finalization.
- **Procurement of locust survey and control equipment:** process ongoing for last remaining items under project GCP/INT/238/JPN as well as under project GCP/GLO/963/USA.
- **New website “Locust Watch in CCA”** published at: <http://www.fao.org/locusts-cca/en/>

### **Forthcoming events and activities in May 2019**

- **Training-of-Trainers in locust management:** national session on locust spraying and pesticide risk reduction, including ASDC, scheduled to the benefit of about 15 Georgian Experts, on 15-18 May in Kakheti, Georgia.
- **Cross-border survey in Caucasus,** involving about 12 Armenian, Azeri, Georgian and Russian Plant Protection/Locust Experts, scheduled on 7-10 May 2019 in Kakheti, Georgia.
- **Technical assistance to Kazakhstan,** for reviewing and assessing the methodology for survey and control activities against the Moroccan Locust in Turkistan and

Zhambyl oblasts, scheduled on 4-15 May 2019 during the visit of the FAO Agricultural Expert/Locust Management.



- **Visit scheduled to Turkmenistan** in May 2019 by the FAO Agricultural Expert/Locust Management to support country participation in the locust Programme in CCA and related projects.
- **Practical Guidelines on pesticide risk reduction for locust control in CCA:** FAO internal/final clearance of all five language versions to be obtained; printing to the benefit of Afghanistan, Kyrgyzstan and Tajikistan to be ensured; and web-version to be made available on website “Locust Watch in CCA”.
- **Human Health and Environmental aspects:**
  - Remote technical assistance to be provided in early May to the Azeri Human Health and Environmental Monitoring Team in view of the start of the field monitoring missions;
  - Development of an integral system for health and environmental monitoring of locust control operations in Georgia, including on-the-job training on monitoring techniques, scheduled on 29 May- 8 June 2019 during the visit of the FAO International Consultant, Environmental Expert.
- **Procurement of locust survey and control equipment:** process to be finalized for the last items under project GCP/INT/238/JPN and ongoing under project GCP/GLO/963/USA.
- **Report of evaluation of project GCP/INT/238/JPN** to be shared with all stakeholders.