



LOCUST BULLETIN No. 54



FAO - Plant Production and Protection Division (AGP)

18 May 2018

Situation level: CAUTION in Kazakhstan, Kyrgyzstan and Tajikistan for DMA

Situation level: CALM everywhere for the three locust pests

General situation during April 2018 Forecast until mid-June 2018

Moroccan Locust (DMA) hopper development was in progress in all Central Asian (CA) countries except the Russian Federation as well as in Georgia and probably in Azerbaijan. Because of the earlier appearance of the pest, DMA situation is considered as critical in Kazakhstan, Kyrgyzstan and Tajikistan. 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 Georgia and probably Azerbaijan. Italian Locust (CIT) hopper development will continue in Kyrgyzstan and Uzbekistan and hatching will start in the other CCA countries. LMI hatching will also start. Since the beginning of the national campaigns, 464 000 ha have been treated against DMA hopper bands.

Caucasus. DMA hatching started during the second half of April in **Georgia** and probably earlier in **Azerbaijan**. CIT hatching is not expected before May.

Central Asia. DMA hopper development was in progress in **southern Kazakhstan, Kyrgyzstan, Tajikistan** and **Uzbekistan** and probably also in Afghanistan and Turkmenistan, where fledging may have started. So far limited CIT hatching only was reported in Kyrgyzstan and Uzbekistan. CIT and LMI

egg-pod surveys were still in progress in Kazakhstan and the Russian Federation. A total area of almost 407 000 ha was treated against DMA in four countries. DMA hopper development will come to an end and fledging will start in that four countries from the beginning of the forecast period; hatching will start in the Russian Federation. CIT hatching will generalize and LMI hatching will probably start by the end of May.

Weather and ecological conditions in April 2018

Variable weather prevailed in northern Central Asian countries, which may have delayed hatching, while the relatively late increase of temperatures observed in the southern CA countries could have slowed down hopper development.

In **Caucasus**, as far as Georgia is concerned, temperatures increased at the end of the month only.

In Georgia, temperatures, which ranged from a minimum of 0.5°C to a maximum of 24.5°C, were unusually low during the first half of April because of numerous rainy days (43.5 mm). They increased at the end of the month only. Vegetation status varies from green to drying out, with a medium height and density.

In **Central Asia**, variable weather prevailed with a temperature increase after the first ten days of the month in the southern countries.

In Kazakhstan, the weather was variable and relatively rainy with a sharp temperature increase. In the South, the weather was variable, with precipitations in the form of rain and snow (from 15 to 73.5 mm at foothills and in mountainous areas in Almaty oblast) as well as clear days. Average daily temperature ranged from +1 to +24°C with minimum of -4°C (at night) and maximum of +28°C, which represents a slight increase as compared to March. Relative humidity ranged from 23 to 90 %. South-easterly and north-westerly winds prevailed at a speed of 1-9 m/s and up to 25 m/s in gusts. In the East, the weather was unstable with precipitations as rain and snow (37.2 mm). The average daily temperature was of +6.5°C (8°C more than in March) with minimum of -12°C (at night during the 1st and 2nd decades) and maximum of +25°C. Rain fell and snow melt during the day. Relative humidity was of 62.6 %. North-westerly and south-easterly winds prevailed at a speed of 1-5 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 18.8 mm). The average daily temperature ranged from -6.7°C to +21.0°C, with minimum of -12.4°C and maximum of +22.0°C, which represented an increase by 7°C as compared to the previous month. The two first decades were warmer than the third one. Relative humidity was around 65 %. South- and north-westerly winds prevailed at a speed of 1.4-10 m/s. In the North, the weather was variable with precipitations in the form of rain and snow (26.8 mm). Temperatures varied a lot with high night and day differences until 7-9 April, when they became more stable and above 0°C. The average daily temperature ranged from -7.1°C to 12.5°C with minimum of -22°C and maximum of 16°C, representing an increase of about 10°C as compared to the previous month. Relative humidity ranged from 21 to 89 %. South-westerly and south-easterly winds prevailed at a speed of 1-7 m/s and up to 13 m/s in gusts.



In Kyrgyzstan, temperatures ranged from 14 to 19°C at night and from 25/28°C to 27/34°C during the day in the plains and from 10 to 15°C at night and 21/25°C to 26/30°C during the day at foothills. Overall, they were above the climatic norm by 1 to 2°C. The monthly amount of precipitation was also above the normal (ranging from 35 to 55 mm in the plains and from 82 to 155 mm at foothills). Vegetation was green with a 5-7 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 FD, the average monthly temperature was of 8.2°C, i.e. 0.3°C above the normal. Rain averaged 56 mm. In North Caucasus FD, the average temperature of 10.3°C was within the norm; rain amounted 87 mm. In the Southern FD, average temperature was of 11.7°C. Rain amount of 7.2 mm represented 60 % of the norm. In the Volga FD, average temperatures was of 4.3°C, i.e. 0.9°C below the normal. Rain amounted 38.6 mm. In the Ural FD, average temperature was of 2.9°C, i.e. 1.6°C below the norm. Rain amounted 29.2 mm, i.e. 30 % above the norm. In the Siberian FD, the average temperature was of 3.08°C, i.e. 1°C above the norm. Rain amounted 38.6 mm. In the Far Eastern FD, the average temperature was of 2.2°C and rain amounted 33 mm.

In Tajikistan, average temperatures ranged from 14 to 26°C during the first ten days of April and increased during the rest of the month, ranging from 15/20°C at night and to 22/35°C during the day, except on 26-28 April when heavy showers fell. The conditions were warmer and dryer in the South (Khatlon) than in the North (Sughd), where more precipitation occurred. Cotton plantation started with usual agricultural works while they came to an end for cereal crops. In Khatlon, early harvest of onions began and early apple varieties ripened as well as stone fruits.

In Uzbekistan, relatively low temperatures were observed in early April but, from mid-April, they increased, ranging from 5 to 8°C at night and 14 to 25°C during the day. In Karakalpakstan, temperatures were even lower, ranging from 0/+5°C at night (with snow in early April) to 14/16°C during the day. Heavy rain fell, representing 5 to 8 times the norm over Surkhan Sherabad and Karshi steppes and 10-12 times the norm in Jizzax, Samarkand and Tashkent provinces. Nevertheless, after several months of drought, natural vegetation was not restored, although pastures are in better conditions at foothills in Jizzax, Navoiy and Tashkent provinces towards thousands of sheep were transported from the South.

Area treated in April 2018

Kazakhstan	158 300 ha
Kyrgyzstan	16 650 ha
Tajikistan	37 720 ha
Uzbekistan	194 212 ha

Locust situation and forecast

(see also summary on page 1)

CAUCASUS

Armenia

• SITUATION

No report was received for the month of April. No locust development was expected.

• FORECAST

Italian Locust (CIT) hatching should start at the beginning of the forecast period and be followed by hopper development.

Azerbaijan

• SITUATION

No report was received. Moroccan Locust (DMA) hatching has probably started during the 2nd half of April and hopper development may be in progress.

• FORECAST

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



Georgia

• SITUATION

In April, the locust situation continued to be calm. Reports indicated that DMA hatching started in Kvemo Kartli and the situation was probably similar in Kakheti, close to the Azeri border. At the end of the month, 2nd instar hoppers should have been present in Kakheti and 1st instar hoppers in Kvemo Kartli. No locust activities were carried out.

• FORECAST

It is expected that DMA hopper bands will be present during the first half of May and that CIT hatching will start during the same period.

CENTRAL ASIA

Afghanistan

• SITUATION

No report was received. DMA mass hatching followed by band formation should have occurred in the six provinces where first hatching was observed in March (Baghlan, Balkh, Kunduz, Samangan, Sar-i-Pul and Takhar) and hatching should have started in the northern and north-eastern parts of the country (Badghis, Ghor and Nimroz). Fledging may have started in some provinces. Control operations probably continued or started in all above mentioned provinces.

• FORECAST

Mass DMA fledging will occur during the forecast period.

Kazakhstan

• SITUATION

Spring surveys continued both for DMA and CIT and started for LMI. DMA egg-bed surveys have been completed in South-Kazakhstan and Zhambyl oblasts and concerned a total of 136 400 ha. Egg-pods were found on 116 700 ha (85.6 %). The number of eggs per pod varied from 18 to 40. From 1 to 20 % of egg-pods

were found infested by parasites or affected by diseases. In South-Kazakhstan, DMA hatching started on 2 April. As of 30 April, out of 930 300 ha surveyed, 168 500 ha were infested above the economical threshold (ET) by 1st to 4th instar hoppers. An area of 143 900 ha was treated. In Zhambyl, DMA hatching started on 17 April. As of 30 April, 76 900 ha had been surveyed of which 21 400 ha were infested above ET, resulting in control operations over 14 400 ha.

CIT egg-bed surveys were carried out on 105 500 ha throughout the country. Egg-pods were found on 30 700 ha (29.1 %) including at a density of 1 egg-pod/m² on 13 800 ha, up to 2/m² on 3 000 ha, from 2 to 5/m² on 6 600 ha, from 5 to 10/m² on 4 200 ha and above 10/m² on 3 100 ha. The number of eggs per pod varied from 11 to 45. From 0.1 to 50 % of the CIT eggs were infested or affected; with the highest percentage being observed in West-Kazakhstan.

LMI egg-bed surveys were carried out on 29 100 ha in southern and western oblasts. Egg-pods were found on 4 600 ha (15.8 %) including at a density of 1 egg-pod/m² on 2 400 ha, up to 2/m² on 1 000 ha, from 2 to 5/m² on 990 ha, from 5 to 10/m² on 200 ha and above 10/m² on 10 ha. The number of eggs per pod varied from 41 to 90. From 3 to 26 % of the LMI eggs were infested or affected; with the highest percentage being observed in Almaty.

In April, a total of 158 300 ha were treated against DMA hopper bands only.

•FORECAST

DMA hopper development will continue in May in South-Kazakhstan and Zhambyl with fledging expected to start by the end of the month. CIT hatching is expected to start in May at the end of the 1st decade in southern provinces, during the 2nd and 3rd decades in western and northern provinces and during the 3rd decade in the East. LMI hatching is expected to start during the 3rd decade of May in southern and western provinces and during the 1st decade of June in the North.



Kyrgyzstan

• SITUATION

DMA hopper development was in progress in Jalal-Abad and Osh oblasts, where hatching started on 2nd and 5th April respectively. Young hoppers gathered already in large (0.1 to 0.5 ha) and dense (average density of 7-20 hoppers/m²) groups and were feeding actively. Hatching also started in Batken oblast. A total of 16 650 ha were treated in these three oblasts of which 15 150 ha in Jalal-Abad (Askya, Nooken, Bzar-Korgon and Suzak districts), 600 ha in Osh and 900 ha in Batken.

CIT surveys were carried out in Chui on 950 ha of which 400 ha were infested. Control operations didn't start yet against that pest.

•FORECAST

DMA mass hatching is expected during the 1st and 2nd decades of May in Osh and Batken oblasts while 4th and 5th instar hoppers should prevail in Jalal-Abad at that time. CIT mass hatching should start during the 2nd decade of May in Chui and Talas.

Russian Federation

• SITUATION

Spring egg-pod surveys were carried out on 305 800 ha in all potentially locust and grasshopper infested FDs. Egg-pods were found on 66 110 ha (22 % of the surveyed area), of which 58 560 ha with egg-pods from gregarious species. In the Central FD (Voronezh region), out of 5 900 ha surveyed, egg-pods were found on 1 040 ha at an average density of 0.25/m². In the Southern FD (Adygea, Kalmykia, Krasnodar krai, Astrakhan and Rostov oblasts), out of 114 510 ha surveyed, egg-pods were found on 18 670 ha at an average density of 0.50/m². In North Caucasus FD (Dagestan, Ingushetia, Kabardino-Balkaria, Chechnya, Stavropol krai), out of 131 240 ha surveyed, egg-pods were found on 38 880 ha at an average density of

0.42/m². In the Volga FD (Bashkortostan, Orenburg and Saratov oblasts), out of 24 960 ha surveyed, egg-pods were found on 2 420 ha at an average density of 0.6/m². In the Ural FD (Chelyabinsk oblast), out of 5 230 ha surveyed, egg-pods were found on 1 770 ha at an average density of 0.18/m². In the Siberian FD (Buryatia, Tuva, Trans-Baykal krai), out of 16 120 ha surveyed, egg-pods were found on 2 760 ha at an average of 0.5/m². In the Far Eastern FD (Amur oblast), out of 2 180 ha surveyed, egg-pods were found on 550 ha at an average of 0.1/m². Hatching of grasshoppers started on 5th April in Chechnya where 10 430 ha were surveyed of which 785 ha were infested by 1st instar hoppers at an average density of 0.54/m²; a maximum density of 2 hoppers/m² was observed on one site of 10 ha.

• **FORECAST**

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

Tajikistan

• **SITUATION**

DMA mass hatching came to an end by mid-April throughout the country and hopper development was in progress. These biological events were facilitated by the weather conditions, moderately warm during the day and a bit rainy at night. Following surveys on 70 953 ha and identification of hopper infestations, control operations have been carried out on 49 197 ha up to 30th April, using pyrethroids. These control activities had started everywhere in the southern and central parts of the country in early April, while they began from the end of the 1st decade in Sughd.

• **FORECAST**

DMA fledging will occur at the beginning of the forecast period while CIT hatching will start. Therefore, control operations will progressively focus on the latter.

Turkmenistan

• **SITUATION**

No report was received. In view of the situation in some of the neighbouring countries, DMA hopper



development should be in progress and maybe coming to an end.

• **FORECAST**

DMA hopper development should be completed at the beginning of the forecast period.

Uzbekistan

• **SITUATION**

DMA hopper development was in progress and quicker than usual, in particular in the South, where 4th and 5th instar hoppers were present and fledging started already. The size of hoppers and adults is twice smaller than usual; this is put in relation with the lack of food, which also results in a reduction of the gregarity and in cannibalism. Elsewhere (Samarkand, Navoiy, Jizzax and Tashkent provinces), where recent rain allowed the development of vegetation -nevertheless sparse as compared to previous years-, DMA hoppers were at 2nd and 3rd instar and their size was normal.

CIT hatching was observed only close to Lake Aydarkul, in Navoiy and Jizzax provinces. Weather conditions were not yet suitable for CIT hatching in Karakalpakstan.

As of 3rd May, control operations against DMA hopper bands, which started in March in the South and by mid-April in the central part of the country, concerned 236 212 ha mainly in Surkhandarya (75 950 ha) and Kashkadarya (113 604 ha) and in some other provinces (Andijon 67 ha, Bukhara 446 ha, Fergana 214 ha, Jizzax 21 333 ha, Namangan 75 ha, Navoiy 4 580 ha, Samarkand 12 933 ha, Tashkent 7 010 ha). Pesticides used were pyrethroids and imidacloprid as well as, locally, an Insect Growth Regulator (IGR).

• **FORECAST**

DMA fledging will generalize in May while CIT hatching will generalize 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. 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.

April 2018 events and activities

- **Training/Refresher course on locust monitoring and information management, including ASDC,** delivered to the benefit of 20 Azeri Locust Experts by FAO International Consultants, Mr A. Latchinsky, Senior Locust Expert, and Ms N. Muratova, GIS Expert, on 30 April-4 May, in Ganja, Azerbaijan.
- **Training-of-Trainers on locust management:** one two-day briefing session on locust spraying and risk reduction, including ASDC, delivered to the benefit of 14 Kyrgyz Locust Experts by the Master-Trainers on 3-4 April in Aksy (Jalal-Abad).



- **Master on Locust biological control, Uzbekistan:** first field mission carried out by the Uzbek Fellow in Karakalpakstan on 6-23 April.
- **Human Health and Environmental issues:**
 - Kyrgyzstan: first mission of the Human Health and Environmental Monitoring Team carried out on 16-20 April in Aksy and Nookat (Jalal-Abad);
 - Tajikistan: Action Plan prepared by the Human Health and Environmental Monitoring Team (including three missions from May to July) and comments sent back by the FAO International Consultant, Environmental Expert;
 - Azerbaijan: setting-up of the Human Health and Environmental Monitoring Team cancelled.
- **2018 Calendar on safety measures associated to locust control:** Dari version also printed out for dispatch to local populations in Afghanistan.
- **Procurement of locust survey and control equipment:** ongoing process to the benefit of Afghanistan, Kyrgyzstan and Tajikistan under project GCP/INT/238/JPN as well as of Azerbaijan and Uzbekistan under project GCP/SEC/004/TUR.
- **Resource mobilization:** ongoing process.

Forthcoming events and activities in May 2018

- **In-depth introduction of Caucasus and Central Asia Locust Management System (CCALM)** scheduled to the benefit of six Azeri Locust Experts on 5-7 May, in Baku, Azerbaijan.
- **In-depth introduction of CCALM** scheduled to the benefit of four Georgian Locust Experts on 8-10 May in Tbilisi, Georgia.
- **Training-of-trainers on locust management:** one two-day briefing session on locust spraying and risk reduction, including ASDC, scheduled to the

benefit of about 15 Kyrgyz Locust Experts on 3-4 May in Aravan (Jalal-Abad), Kyrgyzstan.

- **Moroccan Locust situation in Zhambyl and South-Kazakhstan oblasts, Kazakhstan:** approval of a FAO “Technical Cooperation Programme Facility” (TCPf) allowing advisory missions on Moroccan Locust situation and on survey and control methodology, scheduled in May.
- **Asian Migratory Locust situation in the Aral Sea area, Karakalpakstan, Uzbekistan:** assessment mission scheduled on 17-26 May.
- **Master on Locust biological control, Uzbekistan:** second field mission by the Uzbek Fellow scheduled in May in Kashkadarya and in Surkhandarya.
- **Joint or cross-border surveys:**
 - Cross-border survey between Kyrgyzstan (Batken) and Tajikistan (Sughd) scheduled on 14-19 May with the participation of Japan International Cooperation Agency (JICA) Representatives;
 - Joint survey between Afghanistan and Tajikistan scheduled in Khatlon, Tajikistan, on 20-26 May.



- **Human Health and Environmental issues:**
 - Kyrgyzstan: second mission of the Human Health and Environmental Monitoring Team scheduled on 8-12 May in Nookat and Aravan (Osh);
 - Tajikistan: first mission of the Human Health and Environmental Monitoring Team scheduled in May as follows: on 2-6 May in B.Ghafurov, Zafarobod, Konibodom and Asht (Sughd); on 7-10 May in Vakhsh Valley (Khatlon); on 11-12 May in Kulob area (Khatlon); and on 14-16 May in Rudaki, Tursunzoda and Shahrinav (RRS).
- **Procurement of locust survey and control equipment:** ongoing process.
- **Resource mobilization:** ongoing process.

