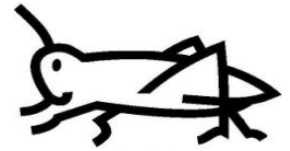




LOCUST BULLETIN No. 60



FAO - Plant Production and Protection Division (AGP)

15 April 2019

Situation level: CALM everywhere for the three locust pests

General Situation during March 2019

Forecast until mid-May 2019

Moroccan Locust (DMA) hatching started later than last year in Afghanistan, Tajikistan and Uzbekistan (and probably Turkmenistan), as a result of a cool and wet weather in early spring. In Kyrgyzstan, DMA hatching started in early April, similar to last year. During the forecast period, DMA hopper development will continue in the above five countries while hatching will start in Kazakhstan and the Russian Federation as well as in Azerbaijan and Georgia. Italian Locust (CIT) hatching may start by the end of the forecast period in some Caucasian and Central Asian countries. So far, only 1 500 ha have been treated against DMA in Uzbekistan (compared to 57 000 ha treated by the end of March 2018).

Caucasus. No locust hatching was reported so far. DMA hatching should start during the 2nd decade of April in Azerbaijan and at the end of April in Georgia while CIT hatching is not expected before the end of the forecast period.

Central Asia. While egg-pod surveys were in progress in Kazakhstan, Kyrgyzstan and the Russian Federation, DMA hatching started in late March in **Afghanistan, Tajikistan** and **Uzbekistan** - and probably also in **Turkmenistan** - close to average hatching dates in those countries. It also started on 2nd April in **Kyrgyzstan**, exactly like in 2018. It is also expected to start in early April in southern **Kazakhstan**.

A total area of 1 500 ha was treated in southern Uzbekistan; no treatments were reported yet from other countries. DMA hopper development will continue in those countries with fledging starting likely from the end of the April; hatching will start elsewhere, in early April in Kyrgyzstan and southern Kazakhstan and from mid-April in the Russian Federation. CIT hatching should start by the end of the forecast period.

Weather and Ecological Conditions in March 2019

The weather was generally cooler and wetter than usual in almost all Caucasian and Central Asian countries, resulting in later than in 2018 DMA hatching in southern Central Asia (CA) countries.

In **Caucasus**, the weather was cooler and wetter compared to March 2018.

In Azerbaijan, the weather was cool with significant precipitations throughout all over the country. The natural vegetation cover was green and dense.

In Armenia, average daily temperatures varied from -2 to +8°C on plains and from -5 to +5°C in the foothills. Abundant precipitations fell in the form of snow in the mountains and foothills and in the form of rain on the plains.

In **Central Asia**, the weather was cooler and wetter than usual in most countries except Kyrgyzstan. Therefore, locust hatching started or was expected to start later than in 2018.

In Afghanistan, the weather was characterized by abundant and widespread precipitations amounting to 166-404% of rain, which fell in March 2018. In the northern and north-eastern parts of the country, daily temperatures

dropped to -10°C during the second and third weeks of the month, which delayed locust hatching.

In Kazakhstan, the weather was variable with temperatures close to multiannual averages. In the South, the weather was variable, with sunny days and precipitations in the form of rain and snow (between 5 and 27 mm). The average daily temperature ranged from -2 to +17.5°C with minimum of -6.2° C (at night) and maximum of +26°C. Relative humidity ranged from 28 to 100%. North-westerly and south-easterly winds prevailed at a speed of 1-7 m/s and up to 26 m/s in gusts. In the East, the weather was unstable with important temperature variations and precipitations as rain and snow (up to 68.9 mm). The average daily temperature was of -1.8°C (similar to March 2018) with minimum of -14°C (at night) and maximum of +14°C. The soil was frozen as deep as 30-100 cm. Relative humidity was of 73.6%. South-easterly and north-westerly winds prevailed at a speed of 1-4 m/s. Precipitations amounted to 11.4 mm and snow cover varied from 10 to 60 cm. In the West, the weather was variable with sunny and rainy/snowy days (up to 37.3 mm). The average daily temperature ranged from -11.7°C to +11.5°C, with minimum of -3°C and maximum of +15.0°C, i.e. less variations than in March 2018. Relative humidity was of 83 %. The wind direction was variable with prevailing north-easterly and south-westerly winds at a speed of 1-5 m/s. In the North, the weather was variable with sunny, cool, cloudy, rainy and snowy days (up to 60 mm). The average daily temperature ranged from -17.2°C to 6.0°C with minimum of -20.6°C (at night). The snow cover varied from 10 to 48 cm and the soil was frozen as deep as 100-130 cm. Relative humidity ranged from 60 to 100%. South-westerly and southerly winds prevailed at a speed of 1-9 m/s and up to 25 m/s in gusts.

In Kyrgyzstan, particularly in Jalal-Abad oblast, the average monthly temperature was higher than the climatic norm by 1 to 1.5°C, ranging from 7 to 9°C on the plain and from 3 to 5°C in the foothills. Temperatures ranged from -5/0°C to 0/5°C at night and from 13°C to 18°C during the day. In the foothills, temperatures ranged from -2/3°C to 4/9°C at night and from 7/12°C and up to 13/18°C during the day. The monthly amount of precipitation was above the normal (ranging from 26 to 91 mm and from 34 to 122 mm in the foothills).

In the Russian Federation, the weather was slightly colder or close to the multiannual climatic average except in North Caucasus Federal District (FD). In southern regions of the Central FD, the average monthly temperature ranged from -1.7 to +1.4°C, i.e. within the norm. Rains were below the



norm, amounting up to 28 mm. In North Caucasus FD, the weather was warm with average temperature ranging from 3.8 to 6.5° C, i.e. above the norm. Rains amounted 24 mm (within the norm). In the Southern FD, average temperatures ranged from 2.2 to 6.3°C, i.e. within the norm. Rains ranged from 38 to 46 mm, which is above the norm. In the Volga FD, the average temperatures during the day varied from -4 to -1.6°C, i.e. within the norm. Rains amount varied from 23 to 31 mm, which is slightly below the annual average value. In the Ural FD, average temperatures ranged from -4.1 to -2.9°C, i.e. close to the norm. Rains varied from 15 to 30 mm, which was above the norm. In the Siberian FD, the average temperature was from -5 to -0.5°C, which is close to the norm. Rains amounted up to 18 mm, which is below the norm. In the Far Eastern FD, the average temperature varied from -9.4 to -1.3° C, which is slightly below the norm, and rains amounted to 95 mm, which is above the norm.

In Tajikistan, the weather was cool with average temperatures of 12°C during the day and 5°C at night. As per forecast from the National Meteorological Centre, temperatures in April will be 3 to 5°C higher than in 2018.

In Uzbekistan, temperatures were considerably (5 to 10°C) lower than in March 2018, while rains were very abundant across the country significantly exceeding the monthly norm. Such conditions resulted in a good and dense grass stand in the foothills with height between 10 and 25 cm, a marked difference compared to 2018.

Area treated in March 2019

Uzbekistan 1 500 ha

Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

• SITUATION

So far, no locust activities were carried out.

**• FORECAST**

No Italian Locust (CIT) hatching or hopper development is expected before May. As per preliminary forecast dated November 2018, control operations are planned to be carried out on 1 000 ha in 2019, which would be higher than the area treated in 2018 (540 ha).

Azerbaijan**• SITUATION**

No hatching was observed during egg-pod surveys carried out in March to check the status of the over-wintering eggs and foresee the hatching period. Awareness was done towards local populations and in particular farmers in order to ensure that they will alert plant protection staff when they see locust hatching. Spraying equipment is being serviced to ensure it is ready for the 2019 campaign.

• FORECAST

Mass Moroccan Locust (DMA) hatching followed by hopper development are expected during the 2nd decade of April. Control operations will start at that time. It is anticipated that up to 60 500 ha will need to be treated during the 2019 locust campaign, which is higher than in 2018 when 46 617 ha were then effectively treated.

Georgia**• SITUATION**

So far, no locust activities were carried out.

• FORECAST

DMA hatching should start by the end of April and CIT hatching by the end of the forecast period. In 2019, control operations should concern up to 25 000 ha, which is higher than the area treated in 2018 (15 100 ha).

CENTRAL ASIA**Afghanistan****• SITUATION**

As a result of unsuitable weather conditions, DMA hatching started on 25 March only in one province, Balkh. Control operations have not started yet. Because of the increased security problems in the main locust breeding areas and budget shortage of the Plant Protection and Quarantine Department, only limited surveys were and will be carried out.

• FORECAST

DMA hatching and hopper development will continue in early April and fledging could start by the end of the forecast period. In 2019, it is anticipated that control operations will concern about 80 000 ha, which is significantly higher than in 2018, when 53 189 ha were then effectively treated.

Kazakhstan**• SITUATION**

Spring surveys started in the South both for DMA and CIT.

As far as DMA is concerned, 75 050 ha were surveyed in Turkestan (former South Kazakhstan) and Zhambyl oblasts. Egg-pods were found on 9 650 ha (13%) including at a density up to 1 egg-pod/m² on 7 000 ha, from 1.1 to 2 egg-pods/m² on 620 ha, from 2.1 to 5 egg-pods/m² on 1 920 ha, from 5.1 to 10 egg-pods/m² on 60 ha and of more than 10 egg-pods/m² on 50 ha. The number of eggs per pod varied from 14 to 33. From 8 to 50% of egg-pods were found infested by parasites or affected by diseases. Lower than in 2018 infested areas and higher percentage of parasitized egg-pods indicate that the DMA population dynamics is in decline.

Concerning CIT, an area of 4 580 ha was surveyed in Zhambyl oblast where egg-pods were found on 870 ha at a density of up to 5 egg-pods/m². The number of eggs per pod varied from 20 to 38. From 3 to 20% of the CIT eggs were infested or affected. In the eastern, western and northern regions, preparation for spring surveys, which will start in April, was in progress.

• FORECAST

DMA hatching is expected to start in early April in Turkestan and at the end of the 2nd – beginning of the 3rd decade in Zhambyl. Control operations against locusts and grasshoppers are planned on more than 950 400 ha in 2018, which is lower than in 2018, when over 2 million ha were treated.

Kyrgyzstan

• SITUATION

Spring egg-pod surveys started during the 1st decade of March. A total of 6 870 ha were surveyed and egg-pods found on 3 250 ha (about 47%) at an average density of 1.5 egg-pod/m²; 9% of egg-pods were infested by parasites or affected by predators or diseases. No hatching was observed in March during these surveys, which were still in progress in northern oblasts at the end of the month. DMA hatching started on 2nd April in Jalal-Abad (Aksy district), where 400 ha were found infested by 5th April. Specialists from the Department of Chemicalization and Plant Protection together with staff from the regional offices and rural districts were carrying out large-scale surveys to identify areas in view of control operations.

• FORECAST

DMA mass hatching is expected during the 2nd half of April in Jalal-Abad, Batken and Osh oblasts while CIT hatching should start during the 1st half of May in Chui and Talas oblasts. Control operations should concern 125 000 ha in 2019, i.e. 17% less than the area effectively treated in 2018.

Russian Federation

• SITUATION

Spring egg-pod surveys started in the South and North Caucasus FDs. In the Republic of Dagestan, 22 340 ha were surveyed of which 3 057 ha were found infested at a density of 0.7 egg-pod/m². In the Republic of Ingushetia, 150 ha out of the 1 000 ha surveyed were infested at a density of 0.3 egg-pod/m². In the Astrakhan oblast, 390 ha out of the 4 690 ha surveyed against Asian Migratory Locust (LMI) were infested at an average density of 0.3 egg-pod/m² and a maximum density of 3 egg-pods/m² was found on 15 ha in Liman district. Regarding CIT, 120 ha were found infested with an average egg-pod density of 0.2 egg-pod/m²; a maximum density of 2 egg-pods/m² was found on 10 ha in Yenotaev district. In the Republic of Kalmykia, 920 ha out of 6 000 ha surveyed were found infested with locust egg-pods (no species mentioned) at an average density of 1.54 egg-pods/m². In the Republic of Kabardino-Balkaria, 185 ha out of 1 040 ha surveyed were found infested with locust egg-pods at an average density of 0.12 egg-pod/m² and a maximum density of 1 egg-pod/m² was found on 10 ha in four districts. In the Chechen Republic, 460 ha out of



3 640 ha surveyed were found infested at an average density of 0.28 egg-pod/m². In the Stavropol Region, 1 400 ha out of 5 230 ha were found infested at an average density of 1.23 egg-pods/m² and a maximum density of 20 egg-pods/m² was found on 500 ha in Neftekumsky district.

• FORECAST

In April, egg-pod surveys to assess the status of the over-wintering egg-pods will intensify and be carried out in many regions. It is planned to carry out control operations on 603 000 ha, about 12% less than the area treated in 2018.

Tajikistan

• SITUATION

DMA hatching was observed on 29-31 March in 12 districts of Khatlon and in two Districts of Republican Subordination (DRS), i.e. three to four weeks later than in 2018. CIT hatching has not been observed in March.

• FORECAST

In April, DMA mass hatching will start in most areas of the country; hopper development will occur and be followed by fledging and mating by the end of the forecast period. CIT hatching may start from the second half of April. Control operations against DMA are planned to start in early April in Khatlon and DRS. Overall, as per forecast, surveys will be carried out on 385 559 ha, of which 118 649 ha during spring (locust hatching), almost 124 201 ha during summer (fledging) and 142 709 ha in autumn (egg-laying); control operations should concern 103 017 ha in 2019, which is very close (only 4% lower) to the area effectively treated in 2018.

Turkmenistan

• SITUATION

No report was received. In view of the situation in the neighbouring countries, DMA hatching started probably in late March.

• FORECAST

DMA hatching and hopper development will continue with likely fledging by the end of the forecast period. Overall, control operations should be carried out on 110 000 ha in

2019, about 27% less than the area treated at 2018 campaign (140 000 ha).

Uzbekistan

• SITUATION

DMA hatching started in March in Surkhandarya and Kashkadarya provinces. No CIT or LMI hatching was observed so far. As of 31st March, 1 500 ha have been treated against DMA hopper bands in Surkhandarya.

• FORECAST

DMA hatching is expected elsewhere by early- to mid-April. During the forecast period, hopper development should concern all regions. CIT hatching will start during the forecast period. Control operations should be needed on 610 300 ha in 2019, about 8% more than the area treated in 2018.

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.



Events and activities from mid-February to end of March 2019

- **Training-of-Trainers in locust management:** two regional sessions held to the benefit of 18 Plant Protection/Locust Experts from Armenia (four), Azerbaijan (four), Georgia (six) and the Russian Federation (four) in Tbilisi, Georgia:
 - 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), on 26 February-2 March 2019, delivered by Mr A. Latchininsky, FAO Agricultural Officer/Locust Management, and Ms N. Muratova, Geographical Information System (GIS) Expert;
 - on locust spraying and pesticide risk reduction, including ASDC: 4-9 March 2019 delivered by Mr S. Lagnaoui, Spraying Expert, Mr S.A. Mahmoud, Environmental Expert and Ms N. Muratova.
- **Practical Guidelines on pesticide risk reduction for locust control in CCA:** illustrations finalized; Dari, Kyrgyz and Tajik layouts peer-reviewed by the services in charge of locust management in Afghanistan, Kyrgyzstan and Tajikistan and under improvement; internal FAO quality check process and clearances started.
- **Procurement of locust survey and control equipment:** process ongoing for last remaining items under projects GCP/INT/238/JPN and started under project GCP/GLO/963/USA.
- **Project TCP/KAZ/3701/C1** to the benefit of Kazakhstan extended up to 19 September 2019.

Forthcoming events and activities in April 2019

- **Training-of-Trainers in locust management:** national sessions on locust monitoring and information management, including ASDC, scheduled to the benefit of 10 Experts on 15-17 April in Kakheti, Georgia.
- **Cross-border survey in Caucasus,** scheduled on 7-10 May 2019, under preparation.
- **Practical Guidelines on pesticide risk reduction for locust control in CCA:** all versions to be finalized based on comments received, including as part of the ongoing FAO quality check process and clearances.
- **Human Health and Environmental aspects:** Action Plan received from Azerbaijan in view of the setting up of the Human Health and Environmental Monitoring Team; Development of an integral system for health and environmental monitoring of locust control operations in Georgia (scheduled in late May/early June) under preparation.
- **Procurement of locust survey and control equipment** ongoing.
- **Final Report of evaluation of project GCP/INT/238/JPN** under finalization.
- **New website “Locust Watch in CCA”** to be published.



Locust presence in Afghanistan, Central Asia and the Russian Federation - March 2019

