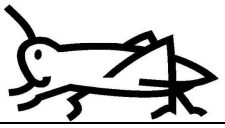
Locust Watch
Locusts in Caucasus and Central Asia

LOCUST BULLETIN No. 9



FAO - Plant Production and Protection Division (AGPM) 30 May 2011

Situation level - Moroccan Locust (DMA) in Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and probably Turkmenistan: CAUTION

Situation level for DMA elsewhere, CIT and LMI: CALM

General Situation during April 2011 Forecast until mid-June 2011

The locust situation started deteriorating from early April in southern Central Asian countries while it remained calm in Caucasian ones. In Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and probably Turkmenistan, Moroccan Locust (DMA) hopper development was in progress and more than 607,000 ha were treated up to mid-May. Natural vegetation was already dry in southern Central Asian countries, and hoppers and adults were concentrating in vegetation that remained green.

Caucasus. No hatching was reported in April. Conditions were still cool and rainy in **Armenia**. In **Azerbaijan** and **Georgia**, DMA hatching was delayed by intense rains. Italian Locust (CIT) hatching should start at the beginning of the forecast period in Armenia and Georgia if weather conditions improve.

Central Asia. During April, DMA hatching extended to all Central Asian countries, including southern **Kazakhstan**. Hopper development continued in these countries and first adults probably appeared at the end of the month in **Afghanistan**, **Tajikistan**, **Turkmenistan** and **Uzbekistan**. Survey and control operations were ongoing in Afghanistan, Kazakhstan Kyrgyzstan, Tajikistan and Uzbekistan where more than 607,000 ha were treated up to mid-May. During the forecast period, DMA hopper development will continue and come to an end, and CIT and LMI hatching will take place.

Weather and Ecological Conditions in April 2011

Temperatures increased in all CCA countries. In southern Central Asian countries, dry conditions persisted.

In **Caucasus**, rainy conditions prevailed.

In Armenia, variable weather prevailed in all regions and there were 13-15 rainy days. Day temperatures ranged from 4-8°C to 24-28°C in lowlands, from -3/+2°C to 18-23°C at foothills and from -4/+1°C to 16-21°C in mountainous areas. The monthly average temperature was lower than normal by 1-4°C. In lowlands and foothills, the flowering of fruit trees continued. In mountainous areas, the cereal started growing. The vegetation cover was abundant in lowlands and foothills and medium to locally dense in mountainous areas.

In Azerbaijan, the weather was cool, with average daily temperatures of 9-11°C, which represented an increase of 2°C only as compared to the previous month. Intense rains fell during the 2nd and 3rd decades of April, which delayed DMA hatching. Natural vegetation was green with a medium cover; crops were at tillering stage.

In Georgia, rainy conditions prevailed again throughout April and average temperature was of 10-17°C, the same as during the previous month.

In **Central Asia**, dry conditions prevailed in the South.

In Afghanistan, the rains were poor and badly distributed in time and space resulting in no or very low vegetation cover in most of Baghlan, Balkh, Jowzjan and Kunduz provinces and some parts of Faryab, Samangan, Sari-Pul and Takhar provinces. The drought, which started in March, worsened during April.

In Kazakhstan, variable weather prevailed in all regions but temperatures increased by about 15°C as compared to March. In the South, clear and sunny conditions prevailed with variable cloudiness, gusty winds and some rains and snowfalls. Average temperatures ranged from 10°C to 23°C with a minimum of -16.8°C and a maximum of 32°C. Relative humidity varied from 17 to 100%. South- and north-westerly winds prevailed at a speed of 1-13 m/s. In the East, weather was variable with rapid changes of temperatures; rain and snow fell at times. Temperatures ranged from -2.1 to 18°C with a minimum of -4°C and maximum of 28°C. Relative humidity varied from 48.8 to 98%. Prevailing south- and north-westerly winds had a speed of 1-10 m/s with gusts reaching up to 26 m/s. In the West, the weather was cloudy and variable and rainfall amounted 32.9 mm. Temperatures ranged from -3.8 to +18°C (minimum of -10°C and maximum of 24°C). The relative humidity varied from 26 to 83%. North-east and south-west winds prevailed at a speed of 1-11 m/s. In the North, weather was unstable with partly cloudy, warm and sunny days followed by cloudy and rainy periods. There were also some snowfalls. Temperatures increased gradually, ranging from -1.7 to 19.5°C with minimum dropping to -12.3°C and maximum of 27.6°C. The relative humidity ranged from 27 to 100%. Southeast, southwest and north winds prevailed at a speed ranging from 1 to 16.1 m/s and occasionally up to 50.5 m/s. Cereal crops were in sowing, germination or tillering (from beginning to full) stages, perennial herbs in shoots, growth and tillering stages (alfalfa was 20-27 cm high in the South) and fruits trees from flowering to fruit formation depending on the areas.

In western Kyrgyzstan, low vegetation cover was green up to the 1st decade of April in locust habitats; it started drying out by mid-April when temperatures increased from 5-14°C to 14-20°C and was dry afterward. In northern Kyrgyzstan, medium vegetation cover was still green by mid-month; temperatures ranged from 6 to 22°C.

In Tajikistan, drought was present in almost the whole Khatlon province, where no rain fell during April in the southern part. In Sughd province, it was snowing at times in the west. In the Region of Republican Subordination (RRS), sporadic rains fell on 15 April only. Average temperatures ranged from 12-19°C (night) to 32-34°C (day). Below than usual vegetation cover is totally dry and sheep had to be moved to oasis, in the valleys.

In Uzbekistan, the average temperatures varied from 15 to 18°C during the night and from 20 to 28°C during the day, which represents an increase of more than 10°C as compared to March. Due to persistent drought, annual vegetation of ephemerals has already dried out.

In the Russian Federation, dry weather with variable temperatures (11-15°C) prevailed in the southern areas of the Central Federal District (FD). In Southern and North Caucasian FDs, the weather was unstable and rainy, with average temperatures of 15-20°C. In the Volga FD, the average temperature was of 9-10°C. In the Siberian FD, the weather was moderately warm, with average temperatures of 10-15°C and very scattered and light rains.

Area Treated in April 2011

Afghanistan	127,511 ha (April)
Kazakhstan	49,200 ha (up to 4 May)
Kyrgyzstan	29,000 ha (up to 20 May)
Tajikistan	81,770 ha (up to 16 May)
Uzbekistan	320,000 ha (up to 23 May)

Locust Situation and Forecast

(see also the summary on page 1)

CAUCASUS

Armenia

• **SITUATION**

No hatching was observed during the surveys carried out in April.

• **FORECAST**

Because of cool and rainy conditions, hatching of Italian Locust (CIT) may be delayed. It is expected to occur during the first half of May in lowlands, in late May at foothills and in early June in mountainous areas.

Azerbaijan

• **SITUATION**

Surveys were carried out in April to check viability of DMA eggs and hatching on egg-bed sites identified last year. Up to 10% of the selected sites were examined but no hoppers were found.

Local rural populations, in particular farmers, were informed on the need report timely to plant protection services any locust hatching.

• **FORECAST**

DMA mass hatching and hopper development are expected to occur in May if the weather conditions return to normal. Chemical control should start by mid-May.

Georgia

• **SITUATION**

The same rainy conditions as during the previous month hampered the implementation of field survey. No hatching and no locusts were reported in April.

• **FORECAST**

DMA hatching should have started in early April in the Dali, Mori and Samukhi areas of the Kakheti region, in the south-eastern part of the country, along the Azeri border but at a likely much smaller scale as compared to 2010 because of unsuitable weather conditions. CIT hatching should start in May in the northern and north-western parts of the above mentioned areas as well as in the eastern part of the Kvemo Kartli region.

CENTRAL ASIA

Afghanistan

• **SITUATION**

In April, after surveys carried out in nine provinces (Baghlan, Balkh, Faryab, Herat, Jowzjan, Kunduz, Samangan, Sari-Pul and Takhar), a total of 128,000 ha of DMA hopper infestations were controlled on 2-20 April by ground spraying using Diflubenzuron and Deltamethrin. The hoppers were of 2-4 instars. Due to the drought, the locusts invaded the cultivated areas earlier than usual but it was reported that the control program was properly implemented and damage prevented so far.

• **FORECAST**

Locust control operations will continue during the forecast period. Because of expected migrations across the borders with neighboring countries, it is planned to organize joint cross-border surveys with Tajikistan and Turkmenistan to better monitor the situation.

Kazakhstan

• **SITUATION**

DMA egg-pod spring monitoring came to an end on 15 April. The density was of 8.3 egg-pods/m² in South-Kazakhstan and ranged from 0.2 to 1.5 egg-pods/m² in Zhambyl province. The average number of eggs per pod was of 25-36 and 4-18% of the egg-pods were infected by diseases and parasites. In South-Kazakhstan,

hatching was observed on 11-26 April, stretching on a shorter period as compared to 2010 due to hot and dry weather, which favoured hatching and subsequent hopper development. Densities varied from 5-15 to 20-50 hoppers/m² and reached up to 200-350 hoppers/m² in some places. On 30 April, 1st to 4th hopper instars were observed with prevalence of 1-2 instars. On 5 May, 2-4 instars only were present with prevailing 3rd instar (60 to 90% of the hopper population). From 29 April to 5 May, a very hot period with temperatures reaching 35-39°C contributed to the rapid fading of the already low vegetation cover and the subsequent spread out of the hoppers out of their traditional breeding area. A total of 49,200 ha was treated against DMA hoppers up to 4 May. In Zhambyl province, hatching was reported on 25-27 April and the density was of 0.2-1 hopper/m².

CIT egg-pod monitoring continued in Kyzylordy, Karagandy, Kostanay, Pavlodar and East-Kazakhstan provinces, where the density varied from 0.5-4.8 to 10-70 egg-pods/m², reaching locally up to 380 egg-pods/m² in Kostanay and 800 egg-pods/ m² in Pavlodar. The number of eggs per pod varied from 14-27 to 35-45 and 0.5 to 22% (and locally 30-40%) of the egg-pods were damaged by predators or diseases. Egg desiccation was noted in West-Kazakhstan. Hatching started on 23-30 April in South-Kazakhstan and up to 1 hopper/m² was observed from 26 April to 2 May in Zhambyl province.

• **FORECAST**

DMA hatching will occur in the other parts of its distribution area during the second half of May. Under suitable weather conditions, fledging will start during the 2nd decade of May in the southern provinces. CIT mass hatching is expected during the 1st half of May in South-Kazakhstan. In other regions, newly-hatched hoppers should appear from the 2nd decade of May up to the end of the month. LMI hatching should start by mid-May in South-Kazakhstan, in late May in West- and East-Kazakhstan and in early June in Kostanay province.

Kyrgyzstan

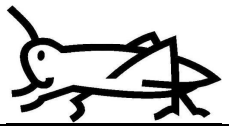
• **SITUATION**

On 21 March-27 April, end-of-winter surveys were carried out on more than 3,500 ha in six provinces (Batken, Osh and Jalal-Abad in the West, Talas, Chui and Issyk-Kul in the North); egg-pods at a density ranging from 1 to 7 pods/m² were found over 64% of the surveyed area. About 26% of the eggs were damaged by predators and parasites.

From 18 April to 20 May, DMA survey and control operations were carried out in the three western provinces: 34,538 ha out of 64,600 ha surveyed were infested by DMA hopper bands, of which 33,360 ha were above the EIT (Economic Injury Threshold). In Batken, 84% of the surveyed area (9,500 ha) was infested by gregarious 2-3 instar hopper bands, whose size varied from 2 to 25 m² and density was of 5-30 hoppers/m². In Osh, 63% of the surveyed area (8,600 ha) was infested by gregarious 2-3 instar hopper bands, whose size varied from 2 to 22 m² and density was of 4-7 hoppers/m². In Jalal-Abad, 45% of the surveyed area (46,500 ha) was infested by gregarious 2-3 instar hopper bands, whose size varied from 1 to 45 m² and density reached 40 hoppers/m². A total of 29,000 ha was treated by air (67%) and ground using 3 Antonov-2 aircraft, 9 tractors and 2 micronair sprayers in Batken (21% of the treated area), Osh (19%) and Jalal-Abad (60%) provinces.

• **FORECAST**

DMA hopper development will continue during the forecast period and adults should appear by the first decade of June. CIT hatching should start during the first half of May in northern provinces.



Tajikistan

• **SITUATION**

Following mass DMA hatching in Khatlon province and RRS, control operations against 1-2 instar hoppers started on 28 March in all infested areas. CIT mass hatching in all Khatlon districts was followed by local treatments. On 25 April, ground control operations had treated 42,888 ha, mainly in Khatlon (77% of the treated areas), involving 2,900 workers, 50 tractors and 1,700 hand-held sprayers. As compared to April 2010, three times more hectares were treated with four times more human resources and three times more equipment. A report dated 16 May indicated that DMA adults appeared during the first decade of May, two weeks earlier than usual and anticipated due to dry and hot conditions, resulting in flights between Afghanistan, Tajikistan and Uzbekistan and that additional 38,882 ha were treated on 26 April-16 May.

In early April, two seminars on locust control management were organized in Khatlon province and RRS and attended by more than 170 persons. Talks were given by Deputy-Prime Minister and Minister of Agriculture as well as by provincial and district authorities. Concerning sub-regional cooperation, regular contacts took place with Afghan, Uzbek and Kyrgyz technical staff; the latter informed that control operations should start on 30 April along the Tajik border.

• **FORECAST**

During the forecast period, DMA fledging and CIT hopper development will continue. LMI hatching should have started in late April. Dry conditions will favor early migration of locust populations towards remaining green and cultivated areas.

Turkmenistan

• **SITUATION**

No bulletin was received for April.

• **FORECAST**

DMA adults should appear at the beginning of the forecast period.

Uzbekistan

• **SITUATION**

In early April, the density of DMA 3-4 instar hoppers reached up to 200-300 individuals/m² within the bands. During the 2nd decade of May, adults were copulating. Up to the 23 May, 320,000 ha were treated, involving 1,200 persons, 220 tractors, 28 OVH sprayers, 910 hand-held sprayers, 28 micronair sprayers and 8 hang-gliders. The treated area decreased by 20% as compared to 2010, probably because control operations began timely, just after hatching, and therefore prevented the spread out of the hopper bands over large areas.

Russian Federation

• **SITUATION**

The results of end-of-winter locust and grasshopper surveys carried out in April in 5 Federal Districts (FD) were the following: average of 0.32 egg-pod/m² on 8% of the surveyed area in the Central FD; average of 4.8 egg-pods/m² on 41% of the surveyed area in the Southern FD; average of 0.8 egg-pod/m² on 59% of the surveyed area in the North Caucasus FD; average of 24 egg-pods/m² on 25% of the surveyed area in the Volga FD, and average of 10 egg-pods/m² on 44% of the surveyed area in the Siberian FD.

• **FORECAST**

Mass hatching of grasshopper species and CIT and LMI development will occur during the forecast period.

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's 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.

New information on Locust Watch in Caucasus and Central Asia. Recent additions to the website (http://www.fao.org/ag/locusts-CCA/en/index.html) are:

- Report of the Technical Workshop on Locust Control held in Dushanbe, Tajikistan, on 18-22 October 2010.
- Russian version of the Report of the 9th meeting of the Pesticide Referee Group (PRG), 2004.

2011 events. The following activities occurred or are scheduled:

- Start of the "Five-year Programme to improve national and regional locust management in Caucasus and Central Asia (CCA)", following approval of an assistance of USD 1,6 million from the United States Agency for International Development (USAID) on 9 May and of a contribution of USD 0.6 million from the FAO/Turkey Partnership Programme on 26 May.
- FAO press release entitled "Anti-locust programme in Central Asia and Caucasus" issued on 19 May 2011 (in English and Russian).