



LOCUST BULLETIN No. 6



FAO - Plant Production and Protection Division (AGPM)

15 September 2010

Situation level for DMA, CIT and LMI elsewhere: CALM

General Situation during August 2010 Forecast until mid-October 2010

Locust situation continued to be calm in August with life cycles about to be completed for the three locust species in all CCA countries. Less than 6,000 ha have been treated during the month, which represents less than one tenth of the area treated in July. Remaining DMA populations were laying eggs in southern CCA. CIT hoppers were about to fledge in Armenia and mature adults were laying eggs elsewhere in Georgia, Kazakhstan and probably south-west Russian Federation.

Treatments were carried out for the first time this year in Armenia to control hoppers on 2,560 ha; in Georgia, 3,200 ha were treated against CIT adults. LMI egg-laying was observed in Kazakhstan while hoppers were still present in Uzbekistan. During this campaign a bit more than 3 million hectares have been treated. Neither further locust development nor control activities are expected this year. In almost all CCA countries, autumn egg-bed surveys will be completed at the end of the forecast period.

Caucasus. CIT hoppers were treated over 2,560 ha in Armenia while adults were controlled over 3,200 ha in Georgia. DMA egg-laying was coming to an end in Azerbaijan.

Central Asia. No significant control operations where carried out in August in Central Asian countries. DMA populations were disappearing. CIT egg-laying was coming to an end and natural mortality was observed since the first decade of August. Remaining LMI hoppers were about to fledge in Uzbekistan and LMI egg-laying was reported in Kazakhstan. Egg-bed surveys were on-going in Kazakhstan and Turkmenistan and planned in Kyrgyzstan, Tajikistan and Uzbekistan. A late report indicated that 137,694 ha were treated in Afghanistan during the 2010 campaign, which ended in June.

Weather and Ecological Conditions in August 2010

Generally hot and dry weather conditions prevailed during August in CCA (except in Armenia and Uzbekistan where temperatures decreased), resulting locally in some crop damage.

In **Caucasus**, the weather was mainly dry and hot with a slight exception for Armenia.

In Armenia, the weather was mostly hot and dry in August, with some light rains, especially in northern areas. Day temperatures ranged from 13-18°C to 36-38°C in lowlands, from 9-14°C to 30-32°C at foothills and from 8-13°C to 26-31°C in mountainous areas; this represents an average decrease of about

4°C as compared to July. In all surveyed areas (crops, perennial plantations, meadows and pastures, fallow lands), the natural vegetation was predominantly dry. Harvest of winter cereal crops continued over the month.

In Azerbaijan, August was characterized by very hot day temperatures of 36-38°C and up to 41-43°C as well as by very dry weather. No rain was reported during the month. Such conditions continued to favor mass egg-laying. In DMA habitats (foothills, hills, plains and fallow lands), herbaceous vegetation was dry and crop maturation was completed.

In Georgia, there were only a couple of rainy days during August. Average day temperature was of 35-40°C, which represents an increase of 2°C as compared to the previous month.

In **Central Asia**, the weather was generally hot and dry. As compared to July, there was a slight temperature increase except in Uzbekistan where temperatures dropped of about 10°C.

In Kazakhstan, the weather was generally clear, sunny and hot during August with very little rain in particular in the western part where crops continued to suffer significantly. In the southern part, weather was clear with variable cloud cover and some rainfall. Day temperatures varied a lot, from 14°C to 30°C and up to a maximum of 42°C. The minimum night temperature fell under 4°C in mountainous areas of Almaty region. Relative humidity ranged between 14 and 68%. South- and north-easterly winds prevailed, at an average speed of 1-11 m/s. In the East, weather was variable with some rains. Day temperature fluctuated a lot around an average of 19.6°C (minimum of 7.3°C and maximum of 36.1°C). Relative humidity varied from 22 to 80%. Prevailing north-easterly winds had a speed of 1-10 m/s (up to 44 m/s during gusts). In the West, weather was hot and dry with very little rain, which resulted in the withering of large crop areas also affected by crop pests. Day temperatures ranged



usually from 14.5 to 30°C (with minimum of 6.2°C and maximum of 43°C). The relative humidity ranged between 8 and 53%. South- and north-easterly winds had a speed of 1-10 m/s. In the North, weather was unstable with variable cloud cover, sudden changes in temperature, cold northerly winds and some rains. Day temperatures ranged usually from 12.9 to 26.5°C with minimum of 3.6°C and maximum of 38°C. The relative humidity ranged from 25 to 92%. South-westerly, north-westerly and -easterly winds prevailed at a speed ranging from 0.1 to 14 m/s and occasionally up to 43.4 m/s. In all regions, cereal crops were in full ripeness and harvest was completed except in the North; fruit and berries harvest was ongoing or completed depending on areas.

In Tajikistan, average day temperature was of 38-44°C in Khatlon province (south-west), 34-39°C in the Region of Republican Subordination (central part) and of 35-39°C in Sughd province (north), which represents a slight increase of a maximum of 2° as compared to July.

In Uzbekistan, average day temperatures were of 25-30°C and average night temperature of 20°C, which represents a decrease of 10°C compared to July. Natural vegetation and pasture were dry. Cotton and rice harvest was ongoing.

Area Treated in August 2010

Armenia	2,560 ha (CIT & grasshoppers)
Georgia	3,200 ha (CIT)
Uzbekistan	200 ha (LMI in Karakalpakstan)

Locust Situation and Forecast

(see also the summary on page 1)

CAUCASUS

Armenia

• SITUATION

As per recent data gathered by national plant

protection officers, approximately 37,000 ha were infested by locusts and grasshoppers and densities exceeded the threshold of significant harm on 5,000 ha. CIT was observed in three provinces: Gegharkunik (centre-east), Aragatsotn (west) and Shirak (north) provinces. Ground chemical treatments were carried out against CIT hopper populations mixed with grasshoppers over a total of 2,560 ha in two areas of Gegharkunik (1,560 ha) and Shirak (1,000 ha) provinces.

• **FORECAST**

CIT mating and egg-laying will occur during September; then CIT life cycle will come to an end and adult populations will progressively disappear during the forecast period.

Azerbaijan

• **SITUATION**

In August, DMA adult populations continued mating and laying eggs under suitable conditions. In the North-West (Djeiranchel, Eldar steppes) along the Georgian border, as well as in the South-East (Garas, Padar plain), oviposition came to an end and adults disappeared progressively. No control operations were carried out in August. All interested parties, especially local populations and farmers, were informed of the completion of the anti-locust campaign and of the forthcoming egg-pod survey.

• **FORECAST**

No further development is expected. An egg-bed survey will be carried out during autumn in order to assess egg-pod density and distribution and to plan the 2011 locust campaign.

Georgia

• **SITUATION**

Control operations were carried out against CIT adult populations over a total area of 3,200 ha, of which 3,000 ha in Kakheti region (Sagarejo district) and 200 ha in Kvemo Kartli region (Marneuli district).



• **FORECAST**

CIT adult populations will progressively disappear. No further development is expected during the forecast period.

CENTRAL ASIA

Afghanistan

• **SITUATION**

A late 4-month report (dated end of June 2010) indicated that 137,694 ha have been treated against DMA and CIT from 3rd April to 25th June. Control operations concerned 10 of the 16 locust infested provinces (out of 34 in the country), all in the northern half of Afghanistan; they were still ongoing in late June in two provinces, the most mountainous ones (Bamyan and Parwan). About 59% of the treated areas were located in the four central north provinces (Samangan, Balkh, Baghlan and Kunduz by decreasing order of treated areas). DMA was the main locust pest in 9 provinces, the most northern ones, along the borders with Turkmenistan, Uzbekistan and Tajikistan. Frequent flights and swarms were observed arriving from neighboring countries. For the first time in Takhar province, large mixed DMA and CIT populations were reported on 31st May over several square kilometers. Most of the locust infested areas were located in remote hilly and desert areas, often insecure. Despite these constraints, participative control was carried out, involving staff from central and provincial Plant protection and Quarantine Department together with local authorities and voluntary farmers. As a result, wheat was saved but damage was nevertheless reported on sesame, cumin and other crops such as a melon. By the end of June, mass egg-laying was observed on large areas, which could lead to a problem in 2011.

• FORECAST

No further development is expected.

Kazakhstan

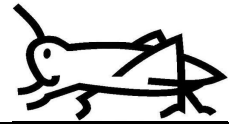
• SITUATION

During extensive surveys on DMA egg-beds covering more than 1.3 million ha in Jambyl province, egg-pods at density not exceeding 2/m² were observed; number of eggs per pod ranged from 18 to 28.

In the South, densities of mating and egg-laying CIT ranged from 2-6 to 12-15 adults/m² reaching a maximum of 20-25 (Jambyl and Kyzylorda provinces). In the West, mass oviposition at density of 1-14 adults/m² was observed from 12 August and natural mortality from 15-19 August. In the North, mass oviposition was reported from 5 to 19 August at density of 5-10 adults/m². Egg-pod density was of 0.4-0.6/m² reaching a maximum of 812 in one site, in Pavlodar province. Egg-pods contained from 35 to 50 eggs. First signs of natural mortality were observed on 9 August. In East-Kazakhstan province, egg-laying was reported up to 15 August and egg counting revealed 25 to 35 eggs per pod. Extensive surveys covered more than 9.4 million ha with observation on fixed sites to monitor populations' dynamics.

LM egg-laying was observed on 14-20 August in East-Kazakhstan, from 22 August in South-Kazakhstan and from 26 August in West-Kazakhstan. During mating and egg-laying, densities ranged from 3-20 to 150-700 adults/m² and up to a maximum of 1,020-1,200 adults/m² in West-Kazakhstan, Kostanay and Kyzylorda provinces. In Jambyl and East-Kazakhstan, parasitism concerned from 10 to 40% of the locust population. Extensive surveys covered more than 3 million ha.

To be noted that control operations against the three locust pests were completed in June.



• FORECAST

Life cycles of CIT and DMA will be completed during the forecast period and adult populations will progressively disappear.

Kyrgyzstan

• SITUATION

No locusts were reported and no control operations were carried out in August.

• FORECAST

No further DMA and CIT development is expected. Egg-bed monitoring should be carried out during the forecast period subject to appropriate and timely funding.

Tajikistan

• SITUATION

As per updated figures, a total of 79,700 ha have been controlled during the 2010 locust campaign (about 10,400 ha less than in 2009) with 62 tractors with related sprayers, 1,050 hand-held sprayers used by 1,150 workers. Some other main features of the 2010 locust campaign are as follows: 1) The egg-bed survey carried out at the end of the 2009-2010 winter indicated that 108,000 ha over the 275,200 ha surveyed were infested by egg-pods; 2) Consequently, 17 bases have been established for locust control and related staff trained to locust control operations; 3) Anti-locust operations started on 27 March in Vakhsh area (Khatlon Province); 4) For the first time over a 25-year period, chemical treatments were carried out on 300 ha in the Pamir Mountains (Darvoz district), central-south of Tajikistan; 5) In mid-July, dense CIT swarms arrived from Afghanistan in Khatlon Province, causing damage on vineyards and vegetable crops; 6) In accordance with signed protocol, joint control operations were carried out by Uzbekistan and

Tajikistan on 220 ha.

• **FORECAST**

An autumn egg-bed survey will be carried out in order to finalize the 2011 locust work plan.

Turkmenistan

• **SITUATION**

DMA life cycle was completed by mid-July and populations started disappearing from that period. Treatments ended in mid-June in the eastern parts of the country and in mid-July in the southern and western ones; therefore no control operations were carried out in August. Monitoring of remaining adult populations and egg-bed survey took place in August and the later will be pursued in September.

• **FORECAST**

Still present locust and grasshopper populations will disappear after completion of their life cycle and no further development is expected this year.

Uzbekistan

• **SITUATION**

CIT populations were disappearing with density not exceeding 0.2 to 0.5 adults/m². Preliminary findings of the technical field mission around the Aral Sea (in the framework of the FAO project TCP/INT/3202) indicated that the LM situation remained biologically complicated in many areas with mixed populations of 2 to 5 instar hoppers and mating adults, which nevertheless did not require treatments this year. In addition, there were very high populations of CIT mixed with non-swarving species (*Heteracris*, etc.) against which limited treatments were carried out (200 ha). Further details are awaited.

No significant control operations were carried out in August and the figure of 620,000 ha treated against locusts during the 2010 campaign remained valid, of which: 228,700 ha in Kashkadarya Province (south-east); 87,000 ha in Surkhandarya Province (extreme



south-east); 76,500 ha in Jizzakh Province; and 56,600 ha in Karakalpakstan.

• **FORECAST**

Following completion of their life cycle, locust populations will progressively disappear. As previously indicated, egg-bed survey will take place in late October or early November. Lake Aydarkul area is likely to become an issue next year because of its vicinity with neighboring countries.

Russian Federation

• **SITUATION**

A report dated early August indicated that mass CIT infestations occurred by the end of July in the extreme south-west of the Russian Federation (North-Caucasian and Southern federal districts) as well as in one southern province (Kurgan). In Kalmykia Republic, infestations were observed on 173,800 ha (55% of the surveyed area) at densities exceeding 500 hoppers/m² in the bands (on 130,100 ha) and 100 imagos/m² in the swarms (on 7,600 ha). In Stavropol Territory, hoppers were reported on 81,100 ha (47.4% of the surveyed area) at maximum density of up to 500 hoppers/m² (on 100 ha), and imagos were present on 118,300 ha at maximum density of 250 adults/m² (on 30 ha). In Rostov Province, hopper infestations were observed on 140,400 ha (16% of the surveyed area) at a maximum density of 1,500 hoppers/m² (on 15 ha) and adults were present on 1,500 ha at a maximum density of 20 individuals/m² (on 1,000 ha). In the Dagestan Republic, very dense hopper bands were observed on 19,100 ha (15% of the surveyed area) and density of adults exceeded 95 individuals/m² in some places. In Chechnya Republic, hoppers were reported on 167,186 ha (78% of the surveyed area) at a maximum density of 200-600 individuals/m² (on 2,780 ha) and imagos on 113,208 ha with density up to 200 adults/m²

on (700 ha). In Volgograd Province, about 600,000 ha (56% of the surveyed area) were infested by hoppers at maximum density of 1,800 individuals/m² and adult density reached 500 individuals/m² in some sites. In Krasnodar Territory, dense groups of LMI adults were observed in meadows on about 300ha; CIT populations were also reported on 130,000 ha at a maximum density of 30 individuals/m².

• **FORECAST**

No further development is expected in 2010 because of completion of locust life cycle.

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:

- Agenda of the forthcoming Technical Workshop on Locust Control.
- Latest information on implementation of FAO regional project TCP/INT/3202 (D).

2010 events. The following activities occurred or are scheduled:

- **Technical assistance** for assessing LMI situation was provided on 10-25 August in Uzbekistan, in the framework of the FAO regional project TCP/INT/3202 (D).
- **Regional Technical Workshop on Locust Control** will be held on 18-22 October, in Dushanbe, Tajikistan.