PROGRAMME REGIONAL DE PRODUCTION INTEGREE DU COTON EN AFRIQUE

Bénin, Burkina Faso, Cameroun, Côte d'Ivoire, Mali, Sénégal, Tchad et Togo

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INFOS PR-PICA

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2024/2025 COTTON SEASON

Low to medium pest infestations in PR-PICA countries

2024/2025 cotton season continues, with pockets of drought recorded in most countries for the month of August. A few cases of flooding have also been noted. These rainfall irregularities could have a negative impact on seed cotton yields in affected areas.

Pest infestations were low to average in all countries, with the jassid, *Amrasca biguttula*, still dominant. As for the pest *H. armigera*, average localized infestations were noted in some countries.

For several countries, the herbicide products used this season were the same active ingredients, albeit with different trade names.

In addition, as part of the monitoring of activities for the 2024/2025 season, a PR-PICA technical mission visited trials set up in Benin and exchanged views with cotton sector actors.

RAINFALL FOR THE MONTH OF AUGUST 2024

Agro-ecological zones	Dekad	Bénin		Burkina Faso		Cameroun		Côte d'Ivoire		Mali		Sénégal		Tchad		Togo	
		nber days	height (mm)	nber days	height (mm)	nber days	height (mm)	nber days	height (mm)	nber days	height (mm)	nber days	height (mm)	nber days	height (mm)	nber days	height (mm)
Dry zone/ North	Dekad 1	3	42	3	55	3	40	6	166			4	66	1	18	1	5
	Dekad 2	4	97	5	119	6	178	5	136			4	92	5	141	3	54
	Dekad 3	4	97	3	99	8	122	5	121			2	41	5	162	3	113
	Total	**11**	**236**	**11**	**274**	**17**	**340**	**16**	**423**	**NA**	**NA**	**9**	**199**	**11**	**321**	**7**	**172**
Median zone/ Center	Dekad 1	2	18	2	44	0	0	2	26			3	54	2	53	1	10
	Dekad 2	3	42	4	115	5	116	4	138			5	116	4	117	2	37
	Dekad 3	4	76	4	96	7	185	4	61			3	71	5	176	2	20
	Total	**9**	**136**	**10**	**255**	**12**	**301**	**10**	**225**	**NA**	**NA**	**11**	**242**	**10**	**346**	**5**	**67**
Humid zone South	Dekad 1	1	11	2	35	5	142	1	38			4	88	4	82	1	3
	Dekad 2	1	29	4	110	7	147	5	86			5	87	4	157	1	22
	Dekad 3	3	53	3	60	7	87	7	183			5	71	4	157	1	20
	Total	**5**	**93**	**9**	**205**	**19**	**376**	**13**	**307**	**NA**	**NA**	**13**	**246**	**11**	**395**	**3**	**45**
AVERAGE AUGUST 2024		**8**	**155**	**10**	**245**	**16**	**339**	**13**	**318**	**NA**	**NA**	**11**	**229**	**11**	**354**	**5**	**95**
RAINFALL DISTRIBUTION		**XX**		**XX**		**XX**		**XX**		**NA**		**XXX**		**XX**		**X**	

X= Low distribution. **XX** : Average distribution. **XXX** : Good distribution

NA = Not Available

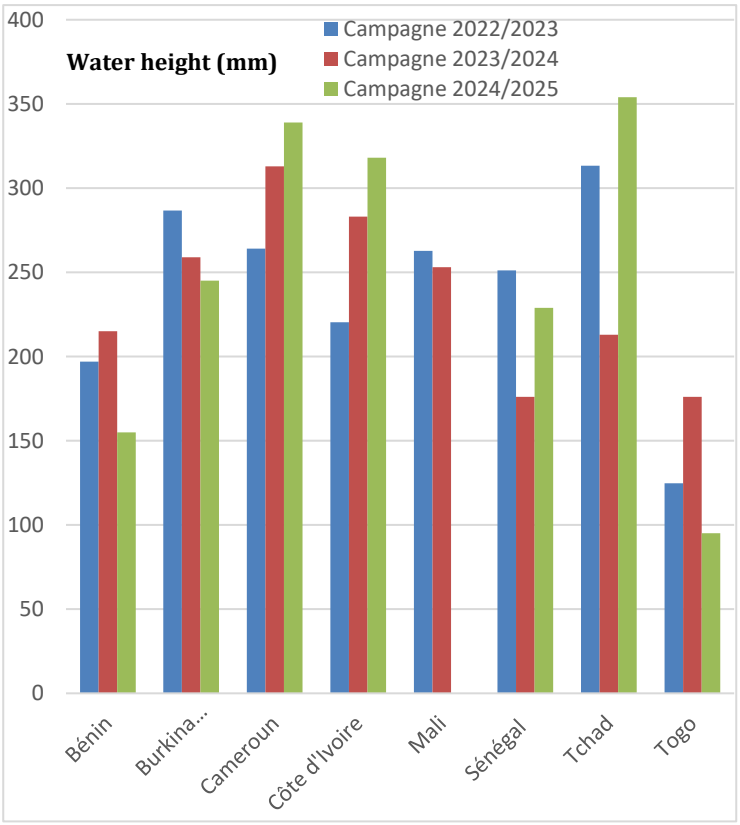
August 2024 was moderately rainy in all countries, with rainfall amounts ranging from 95 mm in Togo to 354 mm in Chad.

The distribution of rainfall was poor to good, depending on the country, ranging from 5 days in Togo to 16 days in Cameroon.

Long pockets of drought were noted in most countries. For example, in Benin and Togo's Central and Southern zones, pockets of drought lasting close to 30 days were recorded. This situation disrupted normal maintenance and fertilization operations. A few cases of flooding were recorded in Cameroon and Chad.

These rainfall irregularities could have a negative impact on seed cotton yields in the areas affected.

Compared with rainfall in August of the previous season, there was a decrease in the amount of water in August 2024 in Benin (-60 mm), Burkina Faso (-14 mm) and Togo (-81 mm). On the other hand, there was an increase in Cameroon (+26 mm), Côte d'Ivoire (+35 mm), Senegal (+53 mm) and Chad (+141 mm).



Rainfall in August 2024 compared to the last two seasons

AVERAGE PEST SITUATION AT 31 AUGUST 2024

Ravageurs	Infestation level by country								Observations
	Bénin	Burkina Faso	Cameroun	Côte d'Ivoire	Mali	Sénégal	Tchad	Togo	
H. armigera	XX	X	X	X	X	X	X	XX	Medium infestations in Benin, Togo and some sectors in Senegal
Earias spp	X	X	X	X	X	X	XX	X	Medium infestations in Tchad
D. watersi	X	X	X	X	X	X	X	X	Low infestation
T. leucotreta	X	X		X				X	Low infestation
P. gossypiella	X	X		X				X	Low infestation
Bemisia tabaci	X	X	X	X	X	X	XX	X	Medium infestations in Chad and in the SECO zone of Côte d'Ivoire
Jassides (*Amrasca biguttula*)	X	XX	XX	X	XX	XX	XXX	XX	Medium to heavy infestations in all countries except Benin and Côte d'Ivoire.
Jassides (Autres)	X	X	X	X	X	X	X	X	Low infestation
***Dysdercus* spp**	X	X	X	X	X	X	X	X	Low infestation
A. gossypii	X	X	X	X	X	X	X	X	Low infestation
P. latus	X	X		X	X	X	X	X	Low infestation
H. derogata	X	X	X	X	X	X	X	X	Low infestation
A. flava	X	X		X	X	X	X	X	Low infestation
S. littoralis	X	X	X	X	X		X	X	Low infestation
Virescence florale	X	X		X					Low infestation
Fusariose	X			X		X			Low infestation
Bactériose	X			X		X			Low infestation
S. frugiperda (sur coton)	X			X		X			Low infestation
S. frugiperda (sur maïs)	X		XX	X	X	X	XX	XX	**Observed on maize** in most countries with medium to low infestation

X = Low infestation; XX = Medium infestation; XXX = High infestation

Pest pressure was low to moderate in all countries, depending on the type of pest.

For carpophagous pests, average infestations of *H. armigera* were noted in Benin, Togo and a few areas in Senegal.

Increased monitoring of this pest is necessary in all countries to avoid heavy infestations during the 2nd peak of the pest, between mid-September and mid-October.

As for sucking pests, average infestations of the jassid *Amrasca biguttula* were observed in most countries, with heavy infestations in Chad.

However, adequate use of the jassid control products recommended by PR-PICA has proved effective against this pest, keeping infestations under control.

Average localized infestations of whitefly were observed in Côte d'Ivoire and Chad, requiring regular monitoring of this pest.

Localized boll rot is on the increase in some areas of SOFITEX in Burkina Faso. It is necessary to take this concern into account in the phytosanitary protection program in Burkina Faso.

HERBICIDE TREATMENT, 2024/2025 SEASON

Pre-emergence herbicides

Country	Product (Trade name)	Formulation (Active ingredient)	Rate of use (L or g/Ha)
Bénin	COTTONEX PG 560 SC COTOCHEM 560 SC	Fluométuron 250 g/l + Prométryne 250 g/l + Glyphosate 60 g/l	2
Burkina Faso	ACTION 80 DF DIURALM 80 WG POWER	Diuron 800 g/kg	1 000 g
	METONYX	S-metolachlore 960 g/l	1
Cameroun	ACTION 80 WG	Diuron	900 g
	ACTION 80 WG	Diuron	680 g
	HERBICOTON DUO	S-metolachlore+Prometryne	3
Côte d'Ivoire	TOPDIURON 800 W ACTION 800 WG	Diuron 800 g/l	1 000 g
	AKAFARI 800 SC TEMPRA 800 SC KORNIGNOUMAN 800 SC	Diuron 800 g/l	1
	COTOMAX EXTRA 412,5 EC	Prometryne 250 g/l + S-metolachlore 162,5 g/l	3
Sénégal	CALIFOR-G	Fluométuron 250 g/l + Prométryne 250 g/l+ Glyphosate 60 g/l	3
	POWER	Diuron 800 g/kg	1 000 g
	FINISH	Glyphosate 360 g/l	1
Togo	TEMPRA 80 WP	Diuron 800g/kg	1 000 g

NB: Mali data not available

Post-emergence herbicides

Country	Product (Trade name)	Formulation (Active ingredient)	Rate of use (L or g/Ha)
Bénin	DEAL 11 OD	Trifloxysulfuron-sodium 11 g/l	1
	DEAL PLUS	Haloxyfop-R-Méthyl 100 g/l +Trifloxysulfuron 10 g/l	1
Burkina Faso	GRAMI 108 EC IKOKADIGNE HALOSTAR PRO MALIK 108 EC	Haloxyfop-R-méthyle 108 g/l	0,9
	MIRACULOUS	Haloxyfop-p-méthyle 100 g/l + Trifloxysulfuron sodium 10 g/l	0,8
Cameroun	PALACE SPYRIT	Pyrithiobac-sodium	140 g
	MIYIDIMA	Haloxyfop r-methyl ester	0,9
	MIRACULOUS	Haloxyfop-p-methyl et Trifloxysulfuron	1
Côte d'Ivoire	VOX 11 OD BINCORO 11 OD MIRACULOUS 110 OD FLATIA 11 OD	Trifloxysulfuron-sodium 11 g/l	1
	AKATELI 108 EC GRAMI 108 EC HALCOT 108 EC	Haloxyfop + Ethoxy Ethyl	1
	TORIDE SUPER 108 EC	Haloxyfop R Methyl 200 g/l	0,9
	CHÔFÔLÔ 220 OD	Haloxyfop R Methyl 200 g/l + Trifloxysulfuron Sodium 20 g/l	0,5
Sénégal	VOX	Trifloxysulfuron sodium 11 g/l	1
	MALIK	Haloxyfop-R-Méthyl108 g/l	0,9
	SELECT	Cléthodime 120g/L	1
	MIRACULOUS	Haloxyfop-p 100g/l +Trifloxysulfuron sodium 10 g/l	0,8
Tchad	MIRACULOUS	Haloxyfop-p-méthyl 100g/l + Trifloxysulfuron 10g/l	0,8
Togo	SHIF 11 OD	Trifloxysulfuron sodium 11g/l	1
	Malik 108 EC	Haloxyfop methyl Ester 108g/l	0,9

NB: Mali data not available

Total herbicides

Country	Product (Trade name)	Formulation (Active ingredient)	Rate of use (L or g/Ha)
Bénin	KILLER 480 SL	Glyphosate 480 g/l	2
Burkina Faso	GLYPHALM 360 SL	Glyphosate (concentre soluble)	2
	KALACH EXTRA 70 SG	Glyphosate (granule soluble)	4 sachets
Cameroun	HERBISTAR PLUS 757 WSG	Glyphosate	1040 g
	LADABA 480 SL	Glyphosate	1,5
Côte d'Ivoire	GNAKPO PLUS/BIFAGANA 480 SL	Glyphosate 480 g/l	4
	BIFAGANA 757 WG (Granulé)	Glyphosate sel d'ammonium 757 g/Kg	1 000 g
Tchad	KILLER 480 SL	Glyphosate sel 360 g/l	2-4
	GLYPHALM 360 SL	Glyphosate 360g/l	2-4
Togo	FINISH 360 SL	Glyphosate 360 SL	3

NB: Mali data not available

VISIT TO PROGRAM TRIALS IN BENIN

From September 02 to 07, 2024, a PR-PICA technical mission, comprising the Head of the Entomology Commission, Dr. S. A. Omer HEMA, and the Executive Secretary, Félix SAWADOGO, visited Benin, with the aim of visiting field activities and exchanging views with cotton industry actors.

Before moving on to Bohicon and Savalou, the delegation paid a courtesy visit in Cotonou to the Interprofessional Cotton Association (AIC), represented by Mr. Maurel ADONON, Internal Auditor, and to the General Manager of the Cotton Research Institute (IRC), Mr. Bertin ADEOSSI.

In Bohicon, the delegation visited the Cana laboratory, where three insects are currently being bred (*H. Armigera*, the new jassid species *A. Biguttula* and the aphid *A. gossypii*). Seed treatment trials were visited at the Permanent Experimentation Center (CPE) in Cana.

In Savalou, several trials were visited in the CPE:

- Trial of new anti-jassid products: PLINAZOLIN from SYNGENTA and nAChR from BAYER;
- A. biguttula jassid threshold definition trial;
- Confirmation trial of products against jassids;
- 03 levels of protection trial;
- Agro-mineral fertilization trial against jassids;
- Foliar biostimulant trials.

The delegation also visited a producer field in Savalou, and met with agricultural advisors and producers.

After Savalou, the delegation returned to Cotonou, where it reviewed the mission with representatives from AIC, SODECO and IRC.

Overall, the mission found that the trials had been effectively set up and were running well.

Pest infestations were low overall. However, average infestations of the jassid *A. biguttula* were observed in some places.

PR-PICA delegation with AIC representatives. Mr. Maurel ADONON, Internal Auditor (3rd from left)

PR-PICA delegation with IRC General Manager Bertin ADEOSSI (2nd from right)

<u>Mission recommendations</u> :

- **Strengthen health monitoring to rapidly detect new pests capable of causing damage to cotton plants;**

- **reduce mortality of H. armigera larvae in laboratory rearing, by transiting them from L5 at 20°C before placing them in the pre-pupal stage at 15°C ;**
- **do not apply insecticide cover treatments on plots reserved for entomology trials**
- **support producers by calibrating sprayers.**

Visit to Cana's insect breeding laboratory

Visit to the Savalou CPE trials

DOCTORAL THESIS DEFENSE

Mr. OUATTARA Adama, Researcher Agronomist at Cotton Program, INERA-Burkina Faso, member of PR-PICA successfully defended his PhD thesis on August 06, 2024 on the Theme:

« Improvement of chemical soil fertility and agricultural productivity by conservation agriculture in cropping systems based on cotton (Gossypium hirsutum L.) and cereals in Burkina Faso »

Here is a summary of the results of several years of research

In order to evaluate the effects of direct sowing under mulch-based cropping system (DMC) on soil chemical parameters and crop yields, three experiments, two were conducted in at Farako-Bâ research station (2010 to 2020 and 2014 to 2020) and one in a field (2015 to 2018). From 2010 to 2020, five forms of DMC combining grasses (*Brachiaria ruziziensis* and *Panicum maximum*) and leguminous (*Crotalaria juncea*, *Mucuna cochinchinensis* and *Stylosanthes hamata*) as cover crops with maize were compared with annual ploughing and direct sowing. From 2015 to 2018, two forms of DMC combining maize with *Brachiaria ruziziensis* + *Cajanus cajan* and *Brachiaria ruziziensis* + *Mucuna cochinchinensis* were compared with the conventional system characterised by annual ploughing in a field at farmers area. The combined effects of tillage (direct sowing and ploughing) and crop residue management were evaluated from 2014 to 2020 at Farako-Bâ research station in many year experimental trial. Soil physico-chemical parameters, mineral uptake and crop yields were assessed. At the research center, the results showed 35 % to 58 % increase of dry biomass when cover crops were combined with maize, compared with 81 % to 85 % in the field. Decreases in soil carbon content were lower with DMC than sowing after ploughing and direct sowing, which resulted 15 % and 12 % decreases respectively. Combinations with maize and legumes attenuated the drop in soil nitrogen levels. Total P and total K levels in DMC plots improved by 13 % to 43 % and 6 % to 27 % respectively. Average cotton and maize yields were statistically equivalent between the DMC plots, the ploughing and direct sowing. DMC improved 8% to 25% of organic carbon ion soil and 13 % to 33 % of nitrogen, 12 % to 16 % of phosphorus and 22 % to 59 % of potassium.

Tillage associated to crop residue showed improvements of 18 % and 21 % and 8 % and 7 % respectively of organic carbon content by composting and by mulch form with direct sowing and ploughing. Soil nitrogen were improved from 15 % and 21 % with durect sowing and 6% with ploughing. Total P and available P content did not improve, while available K improved by 26 % and 77 % under direct sowing and by 50 % with ploughing. Cotton yield improve by 22 % and 32 %, maiz yield by 22 % and 30 % and sorghum yield 16 % and 13 % respectively with recycling in compost form and conservation of harvest residues in mulch form compared with to exporting of harvest residues. The factors did not influence the mineral uptake of the crops in terms of N, P and K. The results obtained show that DMC could be an approach for sustainable production in cereal-cotton systems.

Dr OUATTARA Adama (3rd from left) with members of the jury, after the thesis defense.