THE REPUBLIC OF CHAD

THE MINISTRY OF AGRICULTURE AND ENVIRONMENTAL PROTECTION

ITRAD

The Institute of agricultural research and development of Republic of Chad

The regional centre for agricultural research in the area of Sudan

Agricultural station in Bébédjia BP: 31 Moundou

Growing season 2014/2015

THE PARTIAL TECHNICAL REPORT OF THE NAOAGRICOLE ON THE COTTON PLANT IN CHAD

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Introduction

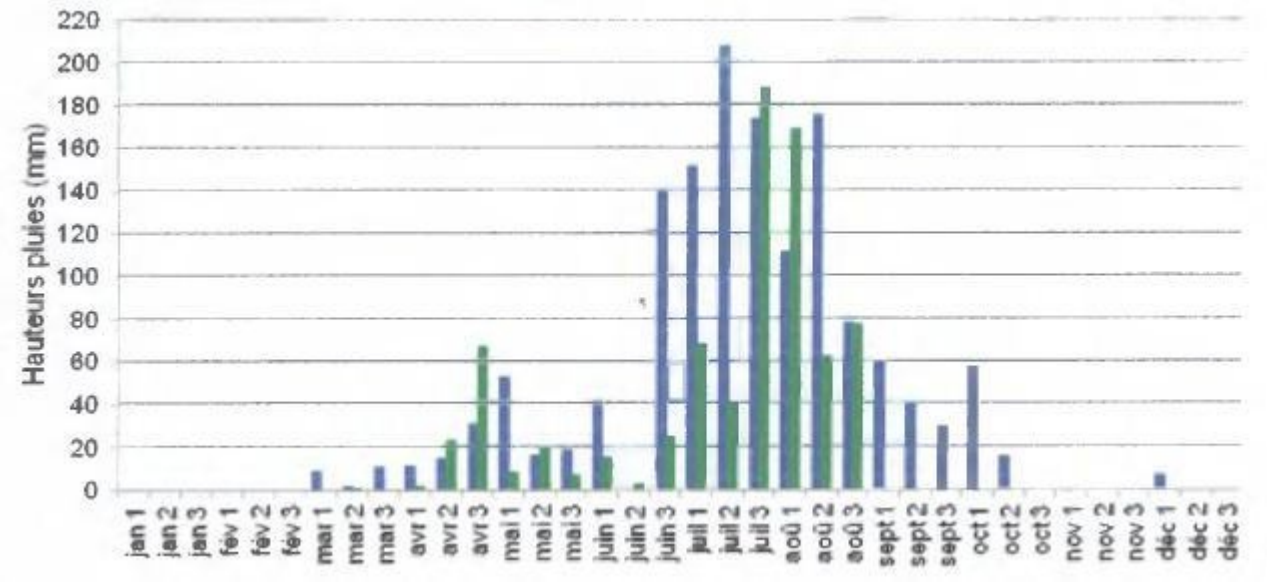
Within the framework of cooperation ITRAD with partners in development sphere the efficiency test of liquid fertilizer Nanoagricole was conducted on cotton in season 2014/2015 at Station Bébédjia. Delivery of the product to the station with a delay did not allow to adhere to the sowing of cotton, which are limited by a period no later than 5 of July.

The main objective of the trial is to check the effectiveness of the liquid fertilizer.

The sowing season has not finished yet, thank`s why we are able to discuss the intermediate results at that moment.

I. The condition of work performance

Climatic conditions of the growing season of 2014/2015 have been worse than the previous season. In fact, till 29.10.2014 at the station in Bébédjia we have registered the total rainfall of 975.6 mm for 74 days, whereas till the same date in 2013 this value was 1452.6 mm in 76 days, ie, . -477 Mm. In May and the first half of June we recorded that the rainfall was only 20 mm (Figure 1).



A graph: height of precipitation

in 2013 and 2014.

Despite the shortage of rainfall and late sowing, there is good growth and vegetative development of cotton.

II. Materials and methods

2.1. Materials

The plant material is presented with a kind of cotton A51.

The fertilizers used:

- NPKSB (19.12.19.5.1,2) widespread for cotton in Chad
- Urea(carbamide) (46%N)
- Nanoagricole: concentrated micronutrient fertilizer with biostimulant combplex

2.2. Methods

The method consists of 6 replication and treatments.

The plot: 5 м x 5 м, total is 25 м 2 .

For sowing: 20м 2

Treatments

T. Controle

El: Local fertilizer

Na : Nanoagricole

The fertilizer NPKSB for cotton is put in a doze 100 kg / hectar in seedholes on 10 cm of saplings.

Nanoagricole is deluted with urea solution at proportion 1: 100 and then the foliar nutrition is performed with the help of the equipment ULV.

2.3. Description

Spacings: 1м between raws and 0,3 м between seedholes.

First weeding is carried out at the first opportunity.

Phytosanitary protection: phytosanitary treatment is carried out when the first buds are seen, that is 45 days after germination and thereafter until ripening of culture. Insecticides used are EMACOT 019 EC, CYPERCAL 720 EC and CONQUEST 176 EC. Thus, three runs have been made taking into account the calendar processing, i.e. every 14 days, i.e. a total of 5 - 6 treatments.

III. Results

3.1. Agricultural operations

After ploughing, stationing and sowing have been carried out on July 26 2015. Processing operations were started on August 22 in order to hold the 4th phytosanitary treatment until 25 October (Table 1).

Table 1: Dates of agro-operations

The agro-operations	Date
Ploughing	17/07
Stationing	26/07
Sowing	26/07
1st weeding	22/08
Thinning out and puting in NPKSB	22/08
2nd weeding	11/09
Manual hilling	12/09
Introduction of nanoagricole	18/09
1st ; 2nd, 3rd and 4th phytosanitary processings	16/07; 30/09; 14/10 and 25/10

3.2. The total aspect of the test: vegetative growth of cotton

On the whole cotton at all studied treatments develops well. Its height varies between 1 and 1.5 m. However, the highest cotton is observed on plots treated with Nanoagricole. Nevertheless, it should be noted that the number of fruiting branches and the number of bolls with different treatments are nearly identical. If we consider the cotton in the control treatment with onventional fertilizer or Nanoagricole solution, we assume that in average for one sapling there is 10 fruiting branches and 12 bolls. This relatively small number of bolls, which is observed in the experimental cotton, is explained by later sowing.

Indeed, if we use a kind A51 and make sowing in the recommended period, we can observe up to 50 bolls at the end of the cycle.

In the course of the testing, we see that cotton is greener and stronger in the areas treated with Nanoagricole(in Fig. 1) than in the control plot (Fig. 2).

Fig. 1. Treatment with Nanoagricole

Fig. 2 The control plot without Nanoagricole

Conclusion

Despite the delay in the start of the test and bad rainy factor, vegetative growth and development of cotton is quite good. Currently cotton in the phase fruit formation / maturation. Subsequent works are connected only with phytosanitary treatment. The harvest is likely to be in December. The relevant statistical analysis of the three treatments studied will allow to estimate efficiency of each used mineral fertilizer.