

Code number: H/10/CELLADAM/0722/5

**Agricultural Office of County Fejér
Plant Protection & Soil Conservation Directorate**



**REPORT ON
PLANT CONDITIONER TRIAL**

2010



Product: Floracell

Plant: Sugar beet

**Title of trial: Examination of Floracell plant conditioner product
according to the GEP QA System in sugar beet**

1. The trial was carried out: **Agricultural Office of County Fejér Plant Protection
& Soil Conservation Directorate, Velence, Országút 23.**

1.1. Name: **Floracell**

1.2. Active ingredient, composition:

Name(s) of the product(s)	Floracell
Composition	1mg/ml celladam

1.3. Manufacturer, trading company, client: **Celladam Group (Kovács Ádám Works)**

2. Plant:

2.1. Species (English): **Sugar beet** Species (Latin): **Beta vulgaris**
Variety: **Gundula**

2.2. Date and mode of sowing (planting): **26/03/2010**

2.3. Seed volume: **1,06 U6ha** Germ number: **106.000 pieces/ha**

2.4. Depth of sowing: **3 cm**

2.5. Preceding: **winter wheat**

2.6. Weed control of preceding: **-**

2.7. Space and row of plants: **45 cm x 15 cm**

2.8. Other crop characteristics, homogeneity, infection, infestation: **Even, healthy plant
vegetation**

2.9. Date and mode of harvest: **11/September/2010**

3. Experimental site:

3.1. County, location, farm: **Fejér county, Enying; Enyingi Agrár Ltd**

3.2. Soil type: **Calcic chernozem**

3.3. Physical soil type: **loam**

K_A: **41**
pH_{KCl}: **7,2**
organic matter content: **2,9**
CaCO₃ content: **9,8**

3.4. Volume and mode of nutrient supply (kg/ha):

	N	P ₂ O ₅	K ₂ O
basic	-	-	-
in spring	-	-	-
summary	-	-	-
total in two previous years	-	-	-
manure in three years	year: 2009	volume: 40 t/ha	

4. Experimental conditions:

4.1. Plot size: 5 m x 20 m

4.2. Replicates: 6

4.3. Lay-out (blocking out):

1	2	3	4	5
2	3	4	5	1
3	4	5	1	2
4	5	1	2	3
5	1	2	3	4
1	2	3	4	5

4.4. Treatment data:

Treatments	Dose L; kg/ha	Date	Growth stage	Mode	Spray volume
1. Untreated control	-	-	-	-	-
2. Amalgerol Prémium Standard control	5,0	11/07/2010	BBCH 38	Foliar	300
3. Floracell	0,6	11/07/2010	BBCH 38	Foliar	300
4. Floracell	1,0	11/07/2010	BBCH 38	Foliar	300
5. Floracell	1,2	11/07/2010	BBCH 38	Foliar	300

Mode of treatment:

foliar treatment

Equipment for applications:

Nissan King Cab plot sprayer working with pressured air

Type of nozzles:

Tee Yet 11004 DG VS

Spray volume (l/ha)

250 l/ha

Pressure (bar):

3,0

4,5. Meteorological data at the time of application:

Date	Temperature	Wind	Rain in a day	
	°C	m/s	Time after the treatment (hours)	Amount (mm)
11/07/2010	18,8	0,9	-	-

5. Plant protection and other agricultural works: -

6. Weather conditions during vegetation period: (data in attachment):

Weather conditions during trial period

Month	Mean temperature (°C)	Rain (mm)	Number of rainy days
June	21,5	211	12
July	26,0	52	5
Augustus	22,5	118	12
September	16,27	152	14

7. Examined parameters, method and date of measuring or sampling:

Examinations on field:

Yield measurement

11/09/2010

Laboratóriumi vizsgálatok

Determination of sugar content (digestion%)

05/10/2010

8. Trial conditions:

Assessment:

The trial was carried out on the land of Enyingi Agrár Ltd in Enying on the well supplied with nutrients, manure-fertilized Calcic chernozem type of soil.

Weed control was done on the trial area in three times (first before the emergence, twice after that). Later mechanical weed control was done, also in the interest of the soil loosening. Plant protection was carried out against fungi and pests too.

The treated and the untreated plots received the same treatment and cultivation at all.

There were no visible changes observed after the treatments. At the end of the trial the total plots were harvested, and measurable differences were observed between the yield amounts.

2,8-3,6% yield increase was caused by the trial products comparing to the untreated control.

Significant difference was measured in case of the 0,6 l/ha dosage on P 1% level, in case of the 1,2 l/ha dosage on 5% level was significant the increase.

The rate of quality improvement (sugar content increase) was 2,6% in case of the 1,0 l/ha dose of Floracell, in case of its 1,2 l/ha dose the improvement was 3,4%.

These increases were significant on 1% probability level.

Phytotoxic effect:

There were not phytotoxic symptoms observed.

Suggestion:

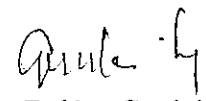
The 1,0 and the 1,2 l/ha dosages of Floracell, applied it at the stand canopy stage of sugar beet, resulted partially yield increase, and mainly quality improvement. According to our measurements this improvement was significant.

Taking into account economic aspects the 1,0 l/ha dosage of Floracell is suggested to use. Product is suggested to apply in 200-300 l/ha spray volume in tiny droplets, under 3 bar pressure, using TeeJet 11004 or something like these nozzles.

Velence, 30/November/2010


dr. Ottó Pálmai
Director




Balázs Gyulai
Study director

Yields (t/ha)

Treatment	Dosage l/ha	Replicates						Average
		1.	2.	3.	4.	5.	6.	
1. Untreated	-	71,1	70,2	70,8	72,2	70,3	72,8	71,23
2. Amalgerol premium Standard control	5,0	71,6	70	73,2	72,1	77	73,9	72,97
3. Floracell	0,6	74,1	71,8	74,3	73,7	73,4	75,6	73,82
4. Floracell	1,0	72,8	74,6	74,1	72,8	73,9	74,3	73,75
5. Floracell	1,2	71,8	73,6	75,4	71,9	71,7	74,9	73,22

**Sugar content (digestion)
%**

Treatment	Dosage l/ha	Replicates						Average
		1.	2.	3.	4.	5.	6.	
1. Untreated	-	14,1	14,4	14,3	14	14,2	14	14,17
2. Amalgerol premium Standard control	5,0	14,3	14,5	14,2	14,2	14,4	14	14,27
3. Floracell	0,6	14,6	14,4	14,2	14,4	14,1	14,3	14,33
4. Floracell	1,0	14,8	15,1	14,3	14,9	14,4	14,2	14,62
5. Floracell	1,2	14,9	14,8	14,6	14,9	14,7	14,4	14,72

Results of soil examinations
(Enying, 01/07/2010)

Measured parameter		Sample I.
pH _{KCl}		7,20
Texture K _A		41,00
Salt content %		0,02
CaCO ₃ %		9,80
Organic matter content%		2,9
(NO ₂ +NO ₃)-N	mg/kg	11,40
P ₂ O ₅	mg/kg	208,00
K ₂ O	mg/kg	231,00
Na	mg/kg	45,00
Mg	mg/kg	145,00
SO ₄ -S	mg/kg	98,00
Mn	mg/kg	36,00
Zn	mg/kg	1,90
Cu	mg/kg	2,30

Yield

TABLE OF DATA

No.	Treatments	Dose l/ha	Replicates						Average t/ha	Control 100%
			I	II	III	IV	V	VI		
1.	Untreated control	-	71,1	70,2	70,8	72,2	70,3	72,8	71,23	100,0
2.	Amalgerol Prémium (St. control)	5,0	71,6	70	73,2	72,1	77	73,9	72,97	102,4
3.	Floracell	0,6	74,1	71,8	74,3	73,7	73,4	75,6	73,82	103,6
4.	Floracell	1,0	72,8	74,6	74,1	72,8	73,9	74,3	73,75	103,5
5.	Floracell	1,2	71,8	73,6	75,4	71,9	71,7	74,9	73,22	102,8

ANALYSIS OF VARIANCE

Factors	SQ	FG	MQ	F-value		P=	SzD
				calculated	table		
All	85,05						
Replicate	18,61	5			2,25	10%	1,41
Treatment	26,39	4	6,598	3,30	2,87	5%	1,70
Error	40,04	20	2,002		4,43	1%	2,32

F-test: P5% signifikant

Yield

Date of evaluation: 11/09/2010

Mode of evaluation: 1kg averages samples/plot

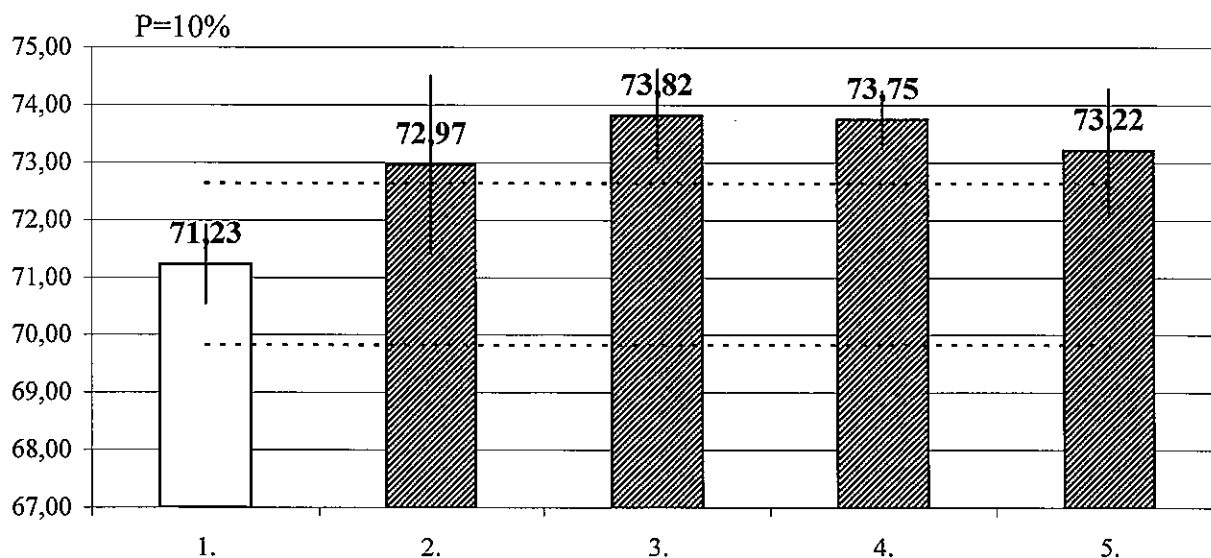
TABLE OF RESULTS

No.	Treatments	Dose l/ha	Date of treatments	Stage of fenologi	Average t/ha	Control 100%	
1.	Untreated control	-	-	-	71,23	100,0	
2.	Amalgerol Prémium (St. control)	5,0	11/07/2010	BBCH 38	72,97	102,4	**
3.	Floracell	0,6	11/07/2010	BBCH 38	73,82	103,6	***
4.	Floracell	1,0	11/07/2010	BBCH 38	73,75	103,5	***
5.	Floracell	1,2	11/07/2010	BBCH 38	73,22	102,8	**
<i>SzD</i> 10% = *					1,41	2,0	
<i>SzD</i> 5% = **					1,70	2,4	
<i>SzD</i> 1% = ***					2,32	3,3	

CV= 1,9 %

Yield

yield
t/ha



Sugar content (digestio)

TABLE OF DATA

No.	Treatments	Dose l/ha	Replicates						Average %	Control 100%
			I	II	III	IV	V	VI		
1.	Untreated control	-	14,1	14,4	14,3	14	14,2	14	14,17	100,0
2.	Amalgerol Prémium (St. control)	5,0	14,17	14,5	14,2	14,2	14,4	14	14,24	100,5
3.	Floracell	0,6	14,24	14,4	14,2	14,4	14,1	14,3	14,27	100,8
4.	Floracell	1,0	14,27	15,1	14,3	14,9	14,4	14,2	14,53	102,6
5.	Floracell	1,2	14,53	14,8	14,6	14,9	14,7	14,4	14,65	103,4

ANALYSIS OF VARIANCE

Factors	SQ	FG	MQ	F-value		P=	SzD
				calculated	table		
All	2,27						
Replicate	0,68	5			2,25	10%	0,17
Treatment	1,04	4	0,259	9,26	2,87	5%	0,20
Error	0,56	20	0,028		4,43	1%	0,27

F-test: P1% signifikant

Sugar content (digestio)

Date of evaluation: 05/10/2010

Mode of evaluation: 1kg averages samples/plot

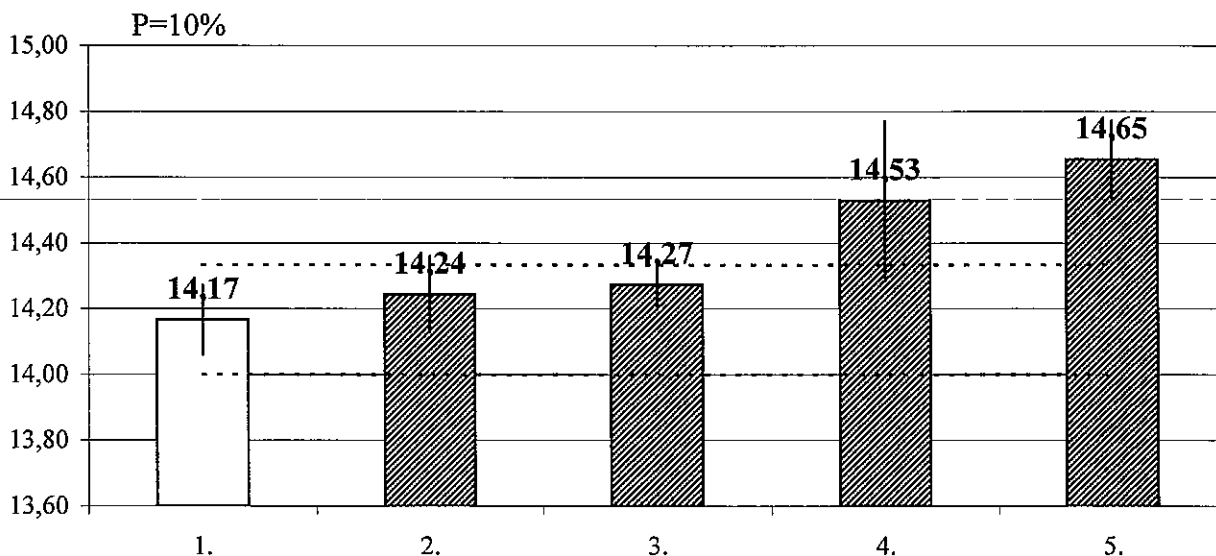
TABLE OF RESULTS

No.	Treatments	Dose l/ha	Date of treatments	Stage of fenologi	Average %	Control 100%
1.	Untreated control	-	-	-	14,17	100,0
2.	Amalgerol Prémium (St. control)	5,0	11/07/2010	BBCH 38	14,24	100,5
3.	Floracell	0,6	11/07/2010	BBCH 38	14,27	100,8
4.	Floracell	1,0	11/07/2010	BBCH 38	14,53	102,6 ***
5.	Floracell	1,2	11/07/2010	BBCH 38	14,65	103,4 ***
<i>SzD</i> 10% = *					0,17	1,2
<i>SzD</i> 5% = **					0,20	1,4
<i>SzD</i> 1% = ***					0,27	1,9

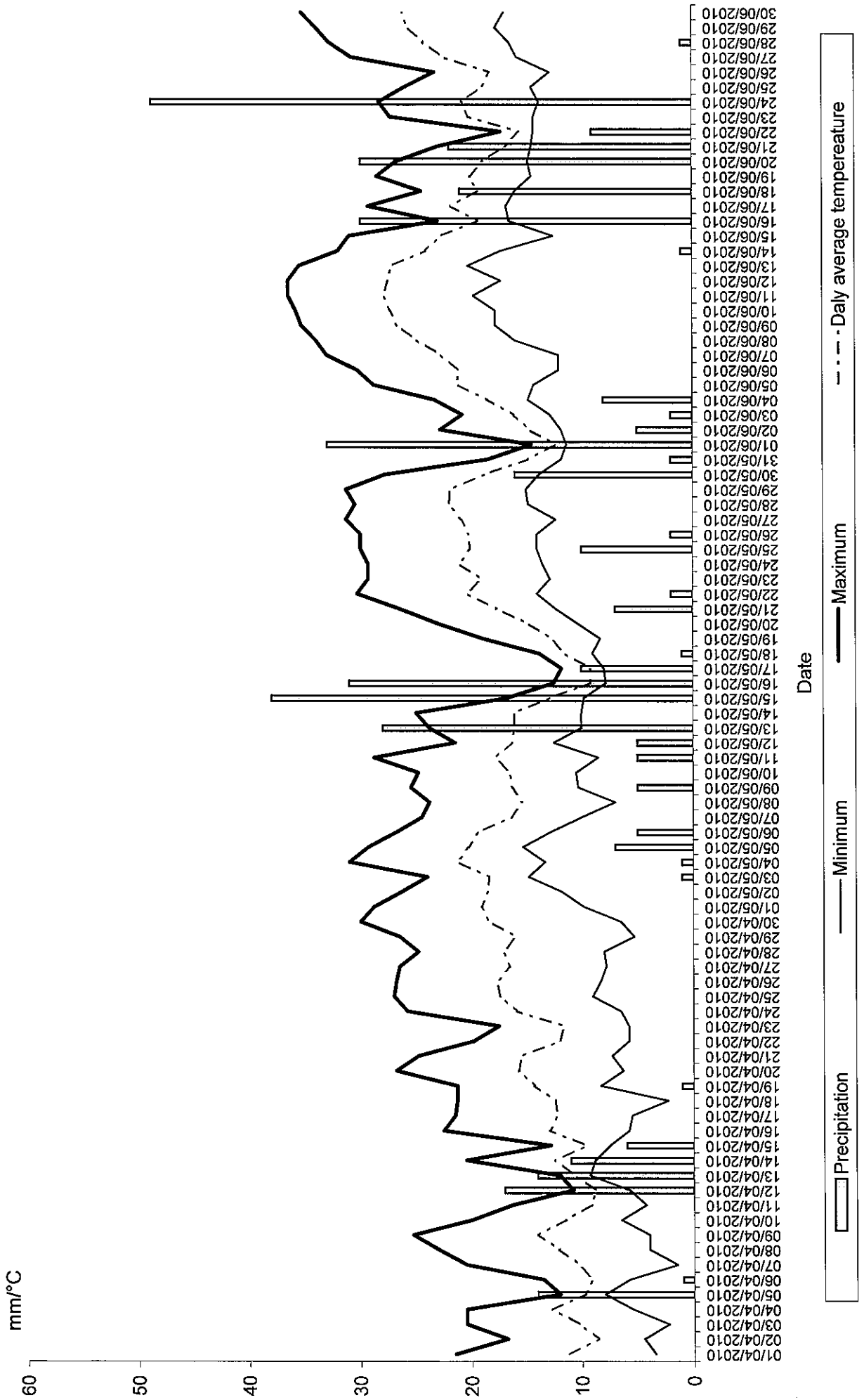
CV= 1,2 %

Sugar content (digestio)

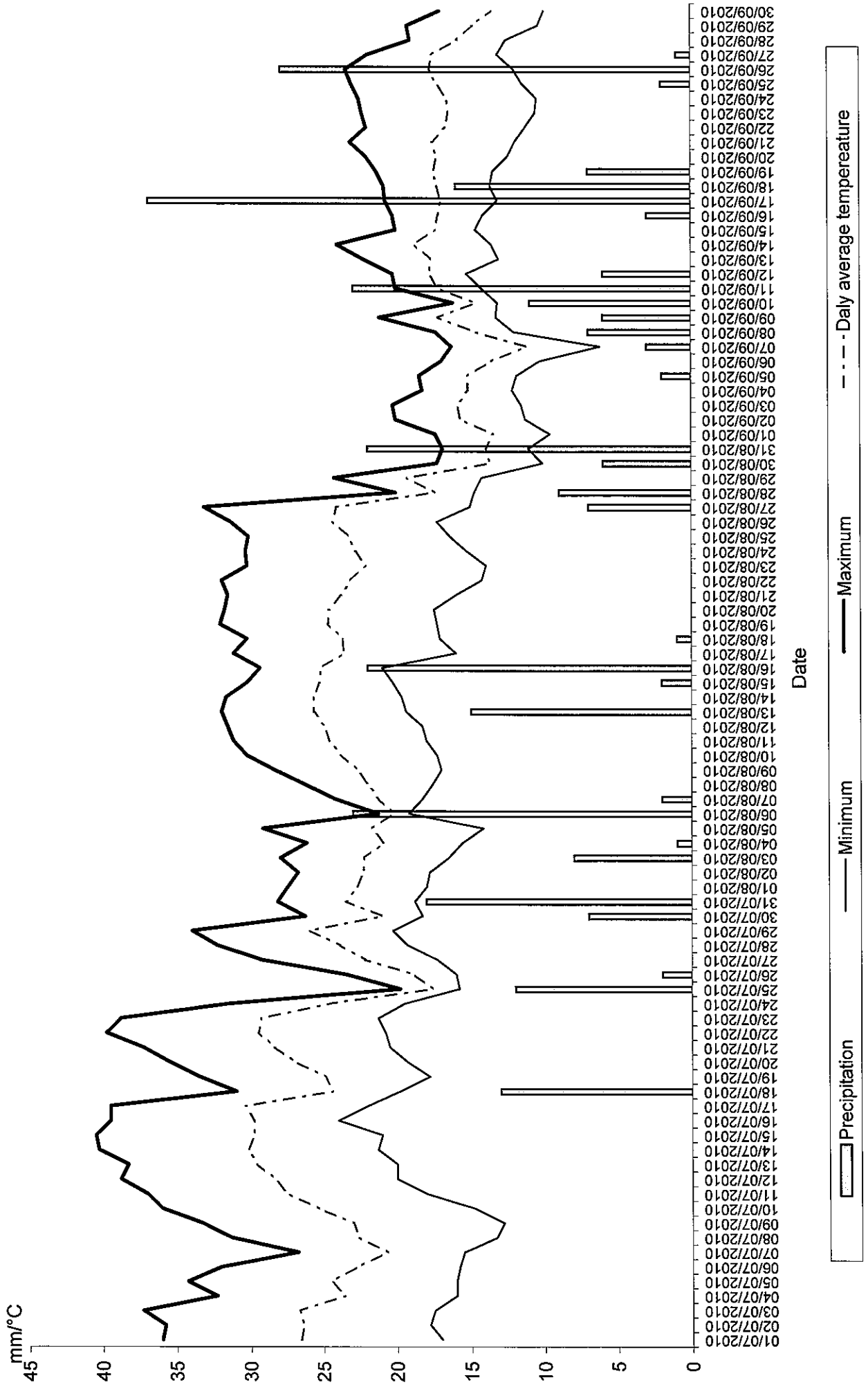
sugar content
%



Meteorological data
2010/April-June



Meteorological data
July-September/2010





**Central Agricultural Office
Coordination and Audit Division**

✉ 1149 Budapest, Tábornok u. 2., Hungary
☎ 1/460-6300; Fax: 1/222-6065

30 March 2010

No.: 02.7/23/10/2010

Subject: Certificate of Official Recognition
of Efficacy Testing Facilities
or Organisations in Hungary

At the request of Agricultural Office of County Fejér, Directorate of Plant Protection and Soil Conservation Pest Diagnostic Laboratory (H-2481 Velence, Ország út 23., Hungary), I, acting as the food chain control body of first instance, make the following

DECISION.

I hereby certify that the testing facility of the Agricultural Office of County Fejér, Directorate of Plant Protection and Soil Conservation, Pest Diagnostic Laboratory located in H-2481 Velence, Ország út 23., Hungary is officially recognised as being competent to carry out efficacy trials in compliance with the principles of Good Experimental Practices (GEP). The above testing facility may carry out efficacy trials of authorization in the following categories of products and cultivation in Hungary:

- product categories: herbicides, fungicides, bactericides, zoocides, growth regulators and yield enhancing substances, additives;
- cultivation categories: field crops, vegetables, fruits, grapevines, ornamental plants, forest, public place, others.

This certificate is valid for 2 years from its entry into force.

No further complaint shall be lodged against the present decision through state administration. With reference to infringement of law, judicial review of the decision may be requested. Within 30 days of the communication of the decision a complaint may be lodged against it, addressed to the head of Budapest Court but submitted to the authority having issued the decision of first instance (Central Agricultural Office Coordination and Audit Division) or sent to the same body by registered mail.

Submission of the complaint has no delaying force on the implementation of this decision.

R E A S O N

According to Article 22 paragraph (5) of the *Decree 89/2004 (V. 15.) FVM on the authorization of placing on the market and use, as well as on the packaging, labelling, storage and transport of plant protection products (hereinafter: Ministerial Decree)*, the Central Agricultural Office made an official inspection in the above testing facility and concluded that the Agricultural Office of County Fejér, Directorate of Plant Protection and Soil Conservation, Pest Diagnostic Laboratory meets the requirements concerning the efficacy trials specified in the Ministerial Decree. Statements made during the local inspection are reported in the protocol No. 02.7/23/4/2010.

Validity of this certificate is determined according to Article 22 paragraph (6) of the Ministerial Decree.

The deadline of the administrative procedure is 14 May 2010.

I call your attention that the present certification is without prejudice to either the licences concerning the operation/follow-up of activity laid down in other provisions of legislation or the obligation for obtaining them.

Furthermore I call your attention that you are obliged to notify the Central Agricultural Office, within 15 days, about any important changes concerning the certified activity of the testing facility.

Respect of the provisions laid down in the legislation on GEP certification and in this Decision shall be randomly controlled by my competent authority according to Article 22 paragraph (9) of the Ministerial Decree.

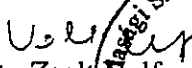
If during the official inspection it is found that the testing facility does not meet the relevant GEP requirements, the competent authority may suspend the activity related to the category specified in this decision for maximum 2 months or may revoke the GEP-certificate. If during the official inspection it is found that some details are missing in relation to a trial, the competent authority responsible for authorization may exclude the trial, depending on the extent of missing details, from those that may be accepted for authorization.

Acting according to Article 22 paragraph (1) of the Ministerial Decree, I made the present Decision in compliance within my jurisdiction laid down in 13 paragraph (5) and, Article 2 paragraph (3) of *Government Decree 274/2006 (XII. 23.) concerning the establishment and operation of the Agricultural Office.*

I made this decision in compliance with Articles 71 paragraph (1) and Article 72 paragraph (1) of *Act 140 of 2004 on general rules of administrative official procedure and service (hereinafter: Act 140/2004).*

I excluded the possibility of appeal in compliance with Article 39 paragraph (4) point o) of Act 46 of 2008 on food chain and its official control. I provided the possibility of judicial review in compliance with Article 109 paragraph (1) of Act 140/2004 and Article 330 paragraph (2) of Act III of 1952 on Civil Procedure.

on behalf of László Lukács
president


Dr. Zoltán Koltford
head of division

