



**THE COMBINED ADD EFFECTS
OF FODDER ADDITIVES
(YEA-SACC 1026+ACTIGEN) ON SOME
PRODUCTION AND CONSUMPTION
INDICES AND ON HEALTH STATUS
IN CHICKEN BROILERS**

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INTRODUCTION

Starting with **January 2006, European Union** interdicted the use of promoters, basis on antibiotics in farm animal fodder, so it became necessary to find some alternatives

(EC Regulation No. 1831 2003; De Jong *et al*, 2012)

Such promoter is the **probiotic YEA-SACC 1026** with important role in increasing the fodder assimilation degree and its efficiency.

(Paryad *et al*, 2008)

An extremely efficient **prebiotic Actigen** is produced by Alltech Company® from Kentucky (USA), and is obtained from the cellular walls of **Saccharomyces cerevisiae yeast**, cultured on a complex mixture of sugars.

(Nawaz *et al.*, 2016; Patterson and Burkholder, 2003)

AIM OF OUR STUDY

was to follow **the effects of combined add** of some fodder additives (**YEA-SACC 1026+Actigen**) on:

- **production and consumption indices**
- **health status** expressed by blood indices in chicken broilers

MATERIALS AND METHODS

The study was done during **September-October 2016** on a number of **50 meat chickens of Ross-308 hybrids** (in Biobasis of Poultry Farming Discipline, Faculty of Animal Science and Biotechnologies, UASVM Cluj-Napoca)

The chickens were distributed in **two lots of 25 capita/lot** during a time period of **42 days**

For the **control lot L(M)** was administered simple combined fodder having the **same protein level** as for **L1(E)**

In **experimental lot L1(E)** was added in combined fodder the **probiotic YEA-SACC 1026+Actigen** **0.1%+0.08%**



MATERIALS AND METHODS

Fodder and water were *ad libitum*.

Chicken broilers benefited of **same breeding system and identical microclimate and feeding conditions.**

Experiment was done having into consideration **all attendance and feeding rules specific for Ross-308 hybrid**

www.aviagen.com

During the experiment period, **no vaccines or medication were done.**



MATERIALS AND METHODS

Chickens of two lots were weighed at experiment start and further weekly, having in view the **body weight, daily gain, fodder consumption and fodder conversion index.**

After 42 days, from each lot were collected **5 blood samples** for **health status parameters' analysis.**

(Spectrofotometer UV-VIS Screen Master Touch, Medical Lab of VMF)

The experimental data were statistically analyzed with **Student test by GraphPad InStat ver.3.10 program.**

RESULTS AND DISCUSSIONS

Average values and variability of body weight in broiler chickens on starter phase 1 (1-14 days) (g/capita)

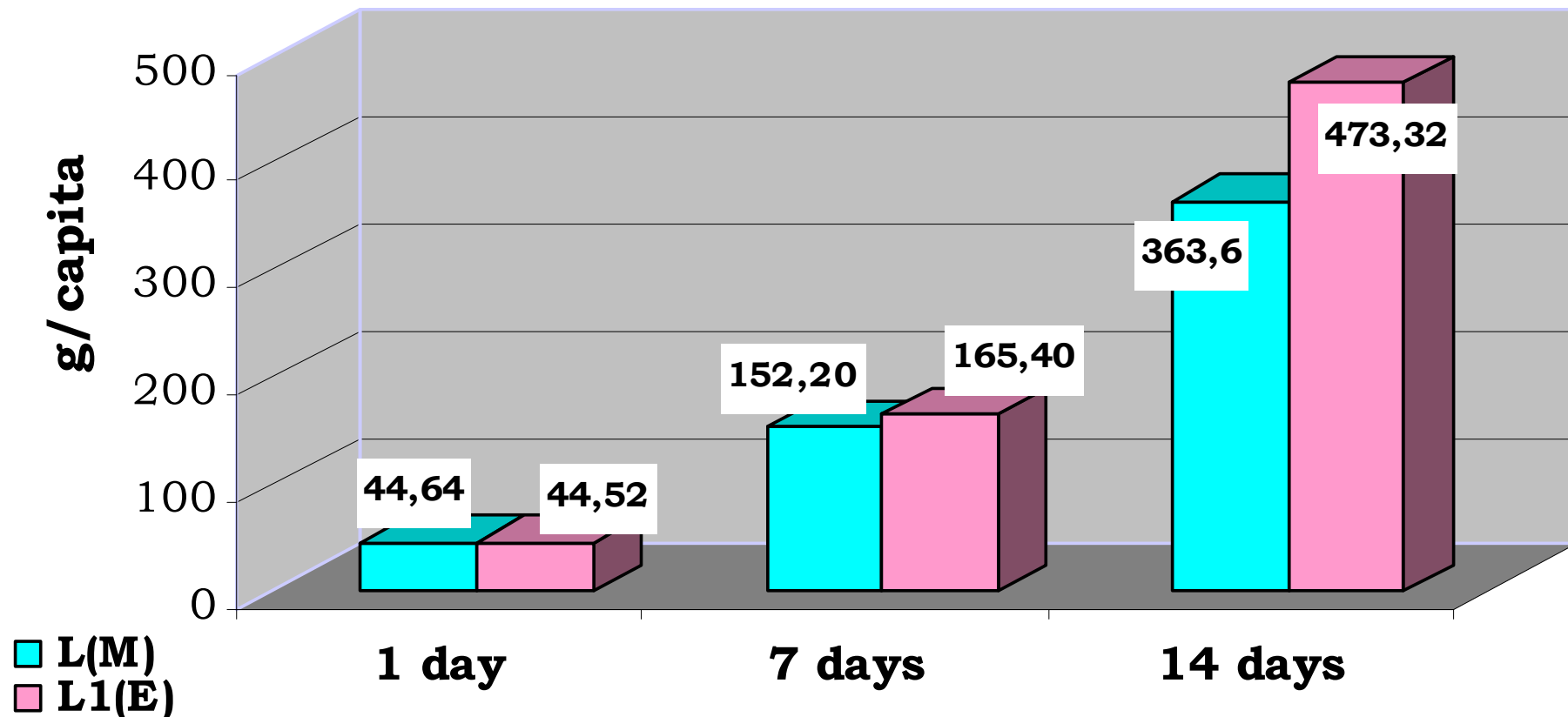
Age (days)	L(M) n=25		L1(E) n=25 YEA-SACC 1026 0.1% +Actigen 0.08%	
	$\bar{X} \pm S_x$	V%	$\bar{X} \pm S_x$	V%
1 day	44.64±0.58	6.58	44.52±0.58	6.60
7 days	152.20±3.27	9.55	165.40**±3.54	10.13
14 days	363.60±12.82	11.62	473.32***±12.98	13.71

X=average; s_x =standard error of average; V%=variation coefficient;

*p<0.05 significant differences; **p<0.01 distinct significant differences; ***p<0.001 very significant differences

RESULTS AND DISCUSSIONS

**Average values of body weight
in starter phase 1 (1-14 days) (g/capita)**



RESULTS AND DISCUSSIONS

Evolution of average gain on starter phase 1(1-14 days)

Age (days)		UM	L(M) n=25	L1(E) n=25 YEA-SACC 1026 0.1% +Actigen 0.08%
Phase 1 (1-14 days)	At 7 days	g	107.56	120.88
		%	100	112,38
	At 14 days	g	211.40	269.04
		%	100	127.26

RESULTS AND DISCUSSIONS

Body weight average values and variability in broiler chickens during production phase 2 (15-35 days) (g/capita)

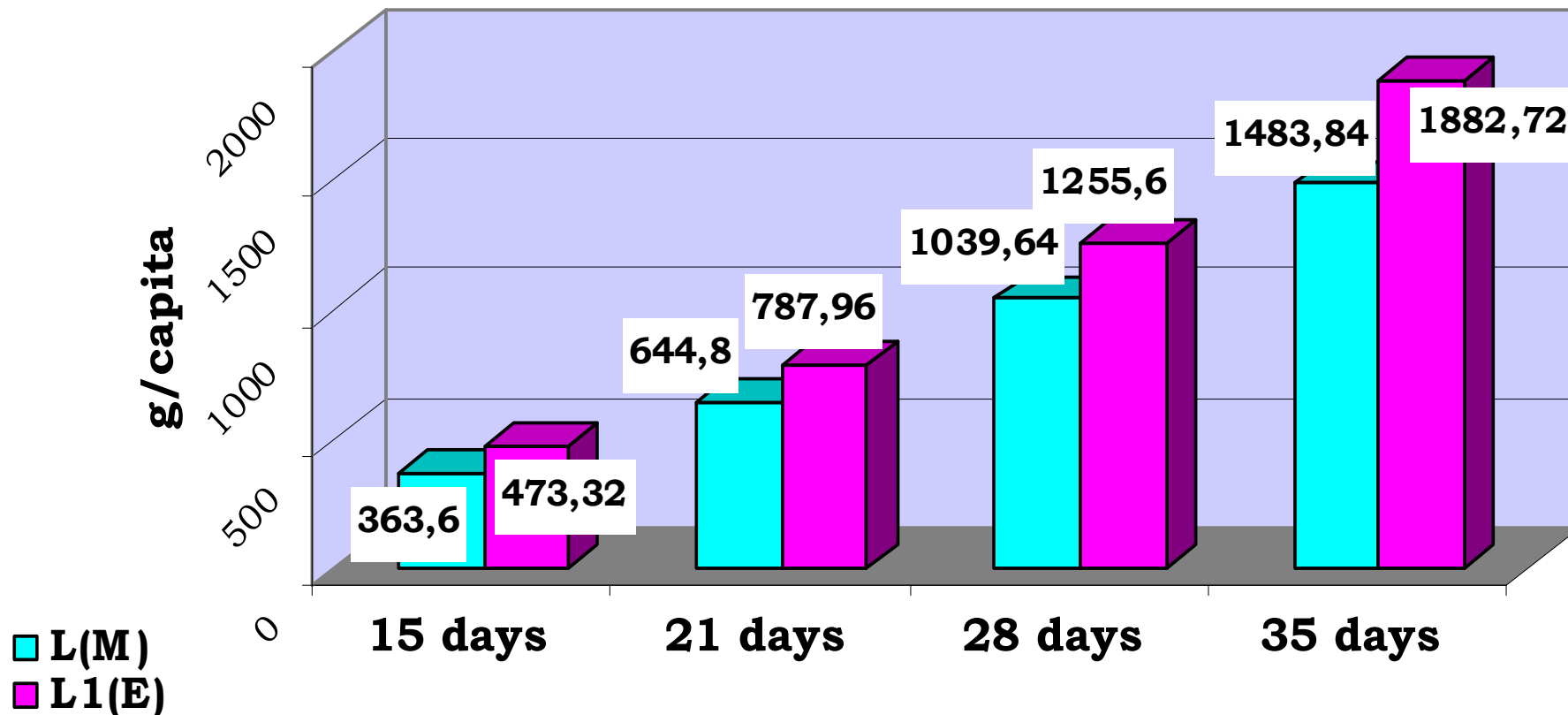
Age (days)	L(M) n=25		L1(E) n=25 YEA-SACC 1026 0.1% +Actigen 0.08%	
	$\bar{X} \pm S_x$	V%	$\bar{X} \pm S_x$	V%
At 15 days	363.60±12.82	11.62	473.32***±12.98	13.71
At 21 days	644.80±17.62	13.66	787.96***±23.84	15.12
At 28 days	1039.64±23.29	11.20	1255.60***±36.53	14.54
At 35 days	1483.84±65.17	14.62	1882.72***±44.91	11.92

X=average; s_x =standard error of average; V%=variation coefficient;

*p<0.05 significant differences; **p<0.01 distinct significant differences; ***p<0.001 very significant differences

RESULTS AND DISCUSSIONS

Average values of body weight in production phase 2 (15-35 days)



RESULTS AND DISCUSSIONS

Evolution of average gain on production phase 2

Age (days)		UM	L(M) n=25	L1(E) n=25 YEA-SACC 1026 0.1% +Actigen 0.08%
Phase 2 (15-35 days)	At 21 days	g	281.2	307.92
		%	100	109.50
	At 28 days	g	394.84	467.64
		%	100	118.43
	At 35 days	g	444.2	627.12
		%	100	141.17

RESULTS AND DISCUSSIONS

Body weight average values and variability in broiler chickens on finishing phase 3 (36-42 days)

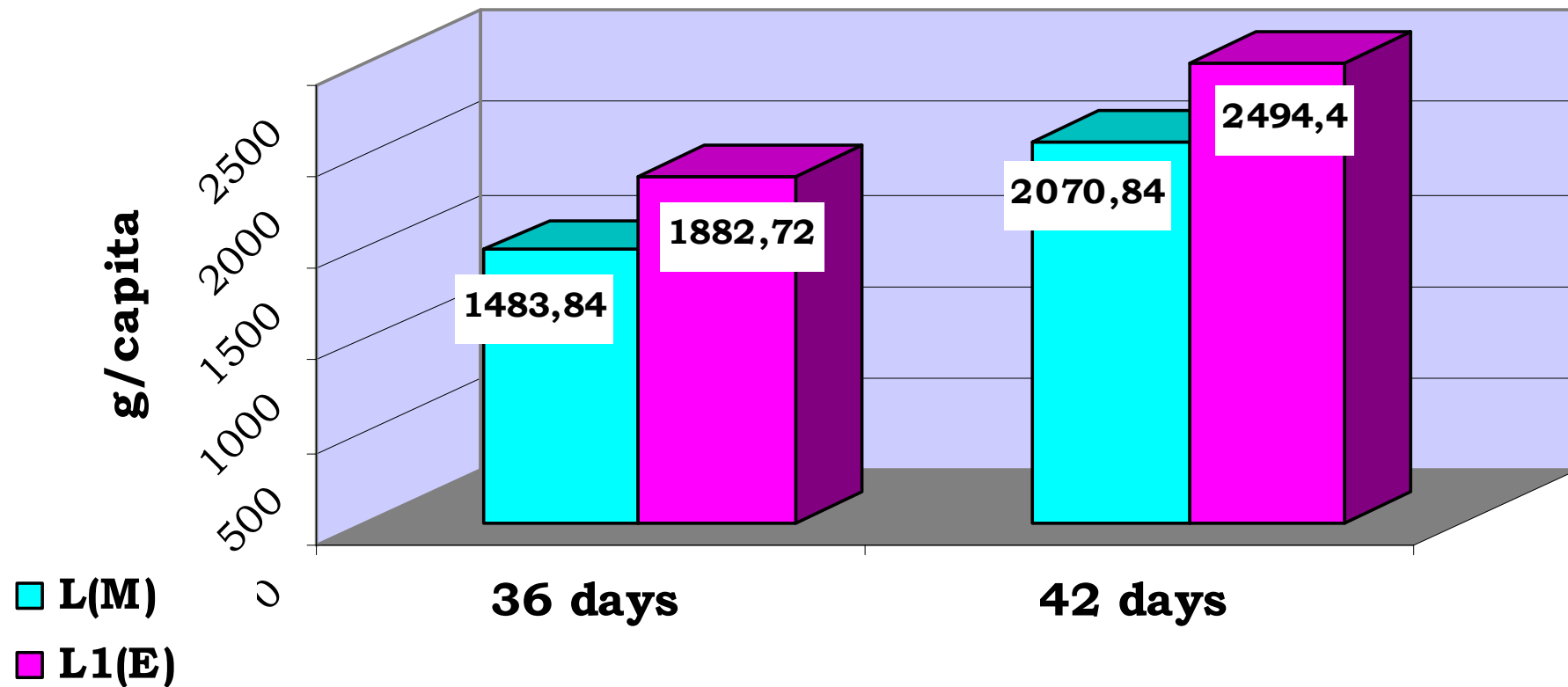
Age (days)	L(M) n=25		L1(E) n=25 YEA-SACC 1026 0.1% +Actigen 0.08%	
	$\bar{X} \pm S_x$	V%	$\bar{X} \pm S_x$	V%
At 36 days	1483.84±65.17	14.62	1882.72***±44.91	11.92
At 42 days	2070.84±30.47	7.35	2494.40***±22.41	4.49

X=average; s_x =standard error of average; V%=variation coefficient;

*p<0.05 significant differences; **p<0.01 distinct significant differences; ***p<0.001 very significant differences

RESULTS AND DISCUSSIONS

Average values of body weight in finishing phase 3 (36-42 days)



RESULTS AND DISCUSSIONS

Evolution of average gain on finishing phase 3 (36-42 days)

Age (days)		UM	L(M) n=25	L1(E) n=25 YEA-SACC 1026 0.1% +Actigen 0.08%
Phase 3 (36-42 days)	At 36 days	g	444.2	627.12
		%	100	141.17
	At 42 days	g	587	611.68
		%	100	104.20

RESULTS AND DISCUSSIONS

Evolution of fodder consumption in broiler lots during the study (1-42 days)

Age (days)		UM	L(M) n=25	L1(E) n=25 YEA-SACC 1026 0.1% +Actigen 0.08%	
Starter phase 1 (1-14 days)	7 days	g	34.03	36.28	
	14 days	g	36.05	37.77	
	Average consumption	g	35.04	37.25	
Production phase 2 (15-35 days)	21 days	g	63.15	68.96	
	28 days	g	116.22	122.14	
	35 days	g	159.55	149.75	
	Average consumption	g	112.97	113.61	
Finishing phase 3 (36-42 days)	42 days	g	188.71	199.62	
Average daily consumption on entire period	Average consumption/ day/capita	g	X±s _x	99.61±24.37	102.42±26.92
			s	59.43	67.25

X=average; s_x=standard error of average; s=standard deviation

RESULTS AND DISCUSSIONS

Evolution of fodder conversion index during entire experimental period

Age (days)	UM	L(M) n=25	L1(E) n=25 YEA-SACC 1026 0.1% +Actigen 0.08%
Phase 1 (1-14 days)	Kg/Kg	1.53	1.33
		100	86.92
Phase 2 (15-35 days)	Kg/Kg	2.11	1.70
		100	80.56
Phase 3 (36-42 days)	Kg/Kg	2.25	2.28
		100	101.33
Final average on entire period	Kg/Kg	1.96	1.77
	%	100	90.30

RESULTS AND DISCUSSIONS

Values of GPx U/ml Ht (glutation peroxidase)

Samples	L(M) n=5	L3(E) n=5 YEA-SACC 1026 0.1% +Actigen 0.08%
1	72.4	96.7
2	70.9	100.00
3	75.61	90.3
4	75.61	112.1
5	77.6	104.7
$\bar{X} \pm s_x$	74.42\pm1.21	100.76\pm3.67
s	2.71	8.22
V(%)	3.64	8.15

X=average; s_x =standard error of average; s=standard deviation; V%=variation coefficient

RESULTS AND DISCUSSIONS

Values of blood count (Hct-%, Hb-g/dl, Ery-mill/mm³)

Specification	UM	Parameters	L(M)	L1(E)
		n	5	5
Hct	%	$\bar{X} \pm x_s$	28.88±0.52	29.8±0.72
		s	1.16	1.62
		V%	4.01	5.43
Hb	g/dl	$\bar{X} \pm x_s$	9.93±0.24	9.93±0.17
		s	0.55	0.17
		V%	5.53	1.71
Ery	millions/ mm ³	$\bar{X} \pm x_s$	2.42±0.11	2.21±0.16
		s	0.26	0.23
		V%	10.74	10.40

Hct (hematocrit), Hb (hemoglobin), Ery (erythrocytes)

\bar{X} =average; x_s =standard error of average; s=standard deviation; V%=variation coefficient

CONCLUSIONS

The use of **probiotic YEA-SACC 1026 combined with Actigen** in fodder of broiler chickens determined a **substantial improvement of production and consumption indices:**

- **body weight at 42 days** in **experimental lot L1(E)** was superior with **20.45%** given to **control lot L(M)**.
- **average daily gain** on entire experimental period was superior in **experimental lot L1(E)** with **18.82%** given to **control lot L(M)**.

CONCLUSIONS

Even the **fodder consumption** was greater with 2.81% in experimental lot L1(E) given to control one L(M), the **fodder conversion index** was more reduced with 9.70% in experimental lot **L1(E)** than in control **L(M)**.

Health status was positively influenced in lot **L1(E)** and values of blood count were in normal levels.

RECOMMENDATION

The use of **probiotic YEA-SACC 1026 (0.1%) combined with **prebiotic Actigen (0.08%)** in broiler chicken fodder with the mentioned doses is recommended because they have positive effects on all production indices and also on health status.**



Thank you for attention