







شبكة المعلومـــات الجامعية التوثيق الالكتروني والميكروفيا.



جامعة عين شمس

التوثيق الالكتروني والميكروفيلم



نقسم بللله العظيم أن المادة التي تم توثيقها وتسجيلها على هذه الأفلام قد اعدت دون آية تغيرات



يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

40-20 في درجة حرارة من 15-20 منوية ورطوبة نسبية من

To be kept away from dust in dry cool place of 15 – 25c and relative humidity 20-40 %









BIICIE

Effect of dry live yeast as feed additive on lactating cows and growing sheep performance

By

Ahmed Mohamed Abd El-Hafeez Mostafa

B.Sc. Agric., (Animal Production), 1988
Faculty of Agriculture, Fayoum
Cairo Univ.

Thesis

Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science

in

Agricultural Sciences (Animal Nutrition)

Department of Animal Production

Faculty of Agriculture

Fayoum

Cairo University

Effect of dry live yeast as feed additive on lactating cows and growing sheep performance

By

Ahmed Mohamed Abd El-Hafeez Mostafa

Thesis

Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science

in

Agricultural Sciences (Animal Nutrition)

Department of Animal Production, Faculty of Agriculture

Fayoum, Cairo University

Approved as to style and contents by:
1-Prof. Dr. Taha Mohamed El-Bedawy
Professor of Animal Nutrition, Faculty of Agriculture, Caird University. ———————————————————————————————————
2- Prof. Dr. Mohamed Mohamed El-Said Hassouna
Professor of Animal and Fish Nutrition, Faculty of Agriculture Fayoum, Cairo University. M. Hamouna
3- Prof. Dr. Sobhy Mahmoud Allam
Professor of Animal Nutrition, Faculty of Agriculture, Faoyoum Cairo University. S.M Allam.
4- Prof. Dr. Gamal El-Deen Aboul-Fotouh Ahmed
Professor of Animal Nutrition, Faculty of Agriculture, Faoyoun Cairo University. G. F. Aboul-Fotoul.

Supervision Committee

Effect of dry live yeast as feed additive on lactating cows and growing sheep performance

 $\mathbf{B}\mathbf{y}$

Ahmed Mohamed Abd El-Hafeez Mostafa

Thesis

Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Agricultural Sciences (Animal Nutrition)

Department of Animal Production, Faculty of Agriculture Fayoum, Cairo University

Supervised	d by:
------------	-------

1-Dr. Sobhy	Mal	nmoud A	llam			
Professor	of	Animal	Nutrition,	Faculty	of	Agriculture
Fayoum, C	Cairo	Universi	ity	4.0		
		S	M-AL	lann.		•••••
			3			•

2-Dr. Gamal El-Deen Aboul-Fotouh Ahmed

Professor	of	Animal	Nutrition,	Faculty	of	Agriculture,
Fayoum, C	airo	Universi	ity	1 -		4.1.
	6.	二	Abo	ul-f	-a.7	touh
		5 0	l'	/		

ACKNOWLEDGMENT

I wish to express my sincere gratitude to **Prof. Dr. S. M. Allam,** Professor of Animal Nutrition, Anim. Prod. Dept., Fac. of Agric., Fayoum, Cairo Univ. for suggesting the problem, supervision and continuos helpful throughout this work.

I wish to express my great indebtance to **Prof. Dr. G. E. Aboul-Fotouh,** Professor of Animal Nutrition, Anim. Prod.

Dept., Fac. Of Agric., Fayoum, Cairo Univ. for suggesting the problem, keen supervision, continuous guidance, encouragement, providing the facilities and helping to overcome all obstacles to bring this work into light.

I'm sincerely grateful to **Prof. Dr. M. M. E. Hassouna**, Head of Animal production Department, Faculty of Agriculture, Fayoum, Cairo Univ. for encouragement throughout this work.

Sincere thanks for the members of Animal production.

Cardial thanks and gratitudes to my wife and my family for their encouragement and sincere devotation all the time.

ABSTRACT

Dry live yeast, Saccharomyces cerevisiae, (SC) as feed additive in cows and sheep rations were nutritionally evaluated through three trials of digestibility, lactation for cows and growth for sheep. The levels of yeast supplemented were 0, 10, 20 and 30 g/head/day for cows and sheep to find out the best level of dry live yeast. Accordingly, the tested rations were R₁, R₂ and R₃ along with the control ration (C) forming 4 treatments. The control ration (C) was composed of 50% concentrate mixture, 40% clover plus 10% wheat straw. At the end of lactation and growth trials simple economic evaluation was estimated. The results showed that the yeast contained 45.62% CP, 2.25% EE, 3.0% CF, 42.23% NFE and 6.9% ash. Nutrient digestibilities of the tested rations were insignificantly improved by adding yeast. The feeding values of the tested rations were better when yeast was added. Feed intake of lactating cows was significantly higher (p < 0.01) by adding yeast. Moreover, milk yield and milk composition were improved with yeast supplementation. From economical point of view use of R₁ (10 g/yeast/cow/day) could be recommended to improve milk production and feed conversion. Lambs body weight gain and feed conversion were significantly improved ($p \le 0.05$) by adding dry live yeast. It could be concluded that R₁ (10 g yeast/lamb/day) could be used as growth promoter for growing sheep ration.

Key words: yeast, cows, lambs, performance, milk yield, milk composition, body weight gain, feed conversion, economic evaluation.

CONTENTS

	Page N	NO.
1.]	INTRODUCTION	1
2.	REVIEW OF LITERATURE	3
	2.1. Chemical composition of yeast	3
	2.2. Effect of yeast supplementation on feed intake	4
	2.3. Effect of yeast supplementation on digestibility	7
	2.4. Effect of yeast supplementation on feeding values	11
	2.5. Effect of yeast supplementation on milk yield and	
	its composition	12
	2.6. Effect of yeast supplementation on growth rate	23
	2.7. Effect of yeast supplementation on feed conversion.	25
	2.7.1. Effect of yeast supplementation on feed	
	conversion for milk production	25
	2.7.2. Effect of yeast supplementation on feed	
	conversion for growth performance	26
3.	MATERIALS AND METHODS	28
	3.1. Trial one: Digestibility and feeding values	28
	3.2. Trial two: Effect of dry live yeast on lactation	-
	performance	29

3.3. Trial three: Effect of dry live yeast on growth	
performance of Ossimi lambs	33
3.4. Chemical analysis	33
3.4.1. Rations and faeces	33
3.4.1.1. Dry matter	33
3.4.1.2. Ash	33
3.4.1.3. Crude protein	33
3.4.1.4. Ether extract	34
3.4.1.5. Crude fiber	34
3.4.1.6. Organic matter	34
3.4.1.7. Nitrogen free extract	34
3.4.2. Milk	34
3.4.2.1. Total solids	34
3.4.2.2. Ash	34
3.4.2.3. Fat	35
3.4.2.4. Protein	35
3.4.2.5. Solids not fat	35
3.4.2.6. Lactose	35
3.4.3. Fat corrected milk (4% Fat)	35
3 4 4 Milk energy	35

III	
3.5. Rations feed intake	35
3.6. Digestibility and nutritive values determinations	35
3.7. Feed conversion of the tested rations	36
3.8. Economic evaluation	36
3.9. Statistical analysis	36
4. RESULTS AND DISCUSSION	37
4.1. Chemical composition of dry live yeast and the tested rations	37
4.2. Digestibility coefficients and feeding values of the tested rations	37
4.3. Feed intake of the tested rations by dairy cows	43
4.4. Lactating performance of dairy cows	46
4.4.1. Milk yield and its composition	46
4.4.2. Feed conversion of yeast supplemented rations	52
4.4.3. Economic evaluation of the tested rations for milk production	52
4.5. Effect of yeast supplemented rations on ram Lambs performance	57
4.6. Economic evaluation of the tested rations for growth performance	61
5. SUMMARY	63
6. REFERENCES	
APARIC SIIMMAPV	

LIST OF TABLES

Page N	1 0.
Table 1: Composition of the tested rations % (on DM basis).	30
Table 2: Chemical composition of feedstuffs (on DM basis)	32
Table 3: Chemical composition % of the dry live yeast and tested rations that fed in digestibility lactation and lambs performance Trials (on DM basis)	
Table 4: Digestibility coefficients % of the tested rations (on DM basis)	40
Table 5: Feeding values of the tested rations (on DM basis)	41
Table 6: Average DM intake of the tested rations by dairy cows	44
Table 7: Unadjusted milk yield and its chemical composition as affected by the tested rations	48
Table 8: Adjusted daily milk yield and its composition as affected by the tested rations	49
Table 9: Feed conversion of the tested rations for milk production	53
Table 10: Economic evaluation of the tested rations for milk production	55
Table 11: Effect of yeast supplemented rations on ram lambs performance	58
Table 12: Economic evaluation of the tested rations for	62
growth performance	

LIST OF FIGURES

Page	No.
Fig.1. Model for the action of yeast cultures in the rumen	7
Fig.2. The plan of work of lactation Trial (Trial 2)	31
Fig.3. Feeding values % of the tested rations, on DM basis.	42
Fig.4. Feed intake of the tested rations by dairy cows, per	
Kg metabolic body weight	45
Fig.5. Adjusted daily milk yield as affected by the tested	
rations	50
Fig.6. Milk components yield, g/d/cow	51
Fig.7. Feed conversion of the tested rations by dairy	
cows	54
Fig.8. Effect of yeast supplemented rations on lambs	
gain	59
Fig.9. Effect of yeast supplemented rations on feed	
conversion by sheep	60