J. Agric. Sci. Mansoura Univ., 29 (10): 5617 - 5628, 2004

EFFECT OF DIETS CONTAINING DIFFERENT TYPES OF SILAGE ON PRODUCTIVE AND REPRODUCTIVE PERFORMANCES OF DOE RABBITS AND GROWTH PERFORMANCE OF THEIR BUNNIES.

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ABSTRACT

This study aimed at investigating effects of feeding doe rabbits on diets containing different types of silage on their productive and reproductive performances and growth performance of their bunnies. A total of 25 NZW doe rabbits (6 months old) were allotted into 5 similar groups fed on 100% concentrate feed mixture (CFM) and was served as control group (G1) as compared to those fed different types of silage (30%) including carrot roots (G2), carrot tops (G3), berseem (G4) and corn (G5) silages. All groups were fed on the tested rations from 6 weeks of age up to the first litter size. Only inclusion of carrot tops silage insignificantly reduced number of service per conception and conception rate as compared to the control died and other silage groups. However, LBW of does of parturition, gestation period, litter size (LS) and litter weight (LW) at birth were not affected significantly by diets containing silage. Only LS and LW at weaning were affected significantly ($P<0.05$) higher in all silage groups than the control group, except berseem silage diet, which did not differ significantly than the control and other silage groups. Average LBW of does at different suckling weeks did not differ significantly among dietary groups, but only does fed carrot roots silage diet did not show reduction in their weight through the suckling weeks. Average daily milk yield was not affected by dietary treatments, ranging between 133.8 and 154.7 g/day all silage groups versus 126.9 g/day in the control group. Inclusion of silages in diets of does resulted in significant ($P<0.05$) changes in fat, lactose, total solids and solids not fat in milk of does. Only, bunnies of does fed corn silage diets showed significantly ($P<0.05$) the highest LBW and average silage during suckling weeks.

Generally, feeding doe rabbits on berseem and corn silage diets resulted in some improvement concerning milk yield and composition and in turn good growth performance and viability of their bunnies.

Keywords: *Rabbit, silage, reproductive, productive, growth performance*

INTRODUCTION

The domestic rabbit is emerging as a viable livestock species due to its high prolificacy and growth rate and its better meat quality than other farm animals. In addition, rabbits are able to consume forages containing high levels of fiber (Cheeke, 1986). In many developing countries, good quality forage may only be available on a seasonal basis suggesting a need for forage preservation as silage or hay. Silage from tropical crops has higher levels of water soluble carbohydrates which make it appropriate for rabbit feeding (Partridge et al., 1985).

Viability of bunnies during the suckling period, litter weight gain and some other productive traits including post-weaning mortality and weight of growing rabbits depend on the milk yield of doe rabbits. Increasing milk production during lactation period contributes to the success of rabbit production (Mohamed and Szendro, 1992). Litter milk efficiency explains the relation between the total milk yield (MY) and litter weight gain (LW) throughout the suckling period (El-Sherif *et al.*, 2002). Increasing total MY may be considered as a favorable maternal trait which may result in improvement of LW at weaning (Balley *et al.*, 1988 and Yamani *et al.*, 1991). Conclusively, the doe live weight and MY of the breeding doe may be considered as maternal traits of good indices to improve LW for meat production in NZW rabbit (Yamani *et al.*, 1991). Correlations between MY at all stages of lactation and each of stillbirths and mortality rate at the first week of lactation were negative and highly significant indicating that mortality rate increases with the decrease in milk yield (Nasr, 1994). No available data on productive and reproductive performances of doe rabbits fed different types of silage under Egyptian condition.

Therefore, the current study aimed to evaluate the effects of feeding doe rabbits on diets containing different types of silage on their productive and reproductive performances as well as growth performance and viability of their bunnies during the suckling period.

MATERIALS AND METHODS

The present study was carried out on a flock of NZW rabbits belonging to Sakha Animal Production Research Station, Animal Production Research Institute (APRI), Agriculture Research Center, Ministry of Agriculture during the period from June 2003 to March 2004.

A total of 25 NZW doe rabbits 6 months old was divided into five equal groups, according to their weights, five animals in each. All does were individually housed in wire cages (60 x 50 x 40 cm).

Rabbits in the control group (G1) was fed 100% complet feed diet (CFD), while those in silage groups were fed on diets containing 70% CFD and 30% silage including carrot roots (G2), carrot tops (G3), berseem (G4) and corn (G5) silage.

All does in the experimental groups were fed on the tested diets from their weaning ages (5 weeks) up to weaning their first litter. Feed amounts were offered to does in all groups according to recomindation **(APRI, 2000)** for doe rabbits at pregnancy and suckling. The CFD was composed of different feedstuffs as shown in table (1). Amounts of CFD for each group were offered individually at 8 a.m., the amounts of silage were offered at 12 p.m. for all silage groups.

Amounts of CFD and silage were adjusted according to the physiological status of the rabbits (i. e. pregnancy stage and suckling week). Chemical compositions of CFD and different types of the silage are shown in table (2).

Live body weight (LBW) of does at parturition and throughout suckling weeks and LBW of their bunnies during the suckling weeks were weekly recorded. Thereafter, changes in LBW were calculated at various weeks

studied. Reproductive performance of doe rabbits including number of services per conception, conception rate at the 1st service, litter size and gestation period were recorded. During suckling weeks, milk Intake by bunnies of each doe and milk composition were recorded. Milk intake at the first three successive days within each week was determined by the differences in LBW of does before and after suckling, while milk composition was estimated using milko-scan (Model 133 B).

Results were statistically analyzed according to Snedecor and Cocharn (1982). However, the significant differences among treatments were tested using Duncan's Multiple Range Test (1955).

Table (1): Composition of concentrate feed mixture used in rabbit feeding.

Ingredient	%	Ingredient	%
Wheat bran	30.0	Limestone	1.0
Soybean meal, 44%	16.0	Premix*	0.5
Yellow corn	20.0	Sodium chloride	0.5
Barley grain	30.0	Di-Ca phosphate	2.0
Total			100

*** One kg of premix contained 3.3 x 10^6 IU Vit. A; 3.3 g Vit. E ; 3.3 x 10^5 IU Vit. D_3 ; 0.33 g Vit. K; 0.33 g Vit B_1 ; 1.33 Vit. B_2 ; 6.67 Vit B_5 ; 0.50 g Vit B_6 ; 3.3 g Vit. B_{12} ; 3.3 Pantothenic acid ; 0.33 Folic acid ; 16.67 mg Biotin ; 166.67 g Cholin ; 1 g Copper ; 10 g Iron ; 13.3 g Mn ; 15 g Zn ; 0.1 g Iodin ; 0.03 g Se and Carrier $CACO_3$ to 1 kg.**

Table (2): Chemical analysis on DM basis of CFD and different types of silage used in rabbit feeding.

Item	DM %	Chemical analysis (%) on DM basis					
		OM	CP	EE	CF	NFE	Ash
CFD	91.4	89.6	18.0	1.9	12.6	57.1	10.4
Carrot roots silage	54.9	88.2	15.9	2.1	14.7	55.5	11.8
Carrot tops silage	57.8	83.9	15.4	1.6	16.4	50.5	16.1
Berseem silage	53.6	89.1	17.0	2.2	15.5	54.4	10.9
Corn silage	56.1	90.4	15.5	2.1	16.0	56.8	9.6

RESULTS AND DISCUSSION

Reproductive performance of does:

Data in table (3) show that does fed carrot tops silage showed more than one service to conceive (1.4 s/c). However, does in the other silage groups and the control group required one service per conception. This reflected in 100% conception rate in all groups except the carrot tops group, which showed 60% conception rate at the 1st service and 40% at the 2nd one.

Inspit the nearly similarity in live body weight of dose in all groups at parturition, the gestation period length and litter size at birth were slightly higher for does fed different types of silage as compared to the control group. However, litter size and litter weight of all silage groups at weaning were significantly ($P<0.05$) higher than the control one, except berseem silage

group, which did not differ significantly than the other silage groups and control group (Table 3).

Tabie (3): Reproductive performance of doe rabbits in different dietary groups.

Item	Control (CFD)	CFD plus silage of			
		Carrot roots	Carrot tops	Berssem	Corn
Number of service /conception	1	1	1.4	1	1
Conception rate (%) at the 1st service	100	100	60	100	100
LBW of doe at parturition (kg)	2.90±0.01	2.86±0.1	2.97±0.09	2.91±1.2	2.87±0.05
Gestation period length (d)	31.8	32.0	32.0	32.0	32.0
Litter size at birth	5.5±1.2	7±0.5	6.75±0.4	5.75±0.6	6.75±0.7
Litter weight at birth (g)	340.0	347.5	355.0	327.5	352.0
Litter size at weaning	4.5^{b}±0.1	5.75^{a}±0.1	5.75^{a}0.1	5.25^{ab}0.1	5.75^{a}0.1
Litter weight at weaning (g)	1.98^{b}±0.	2.51^{a}±0.1	2.72^{a}±0.2	2.42^{ab}±0.2	3.42^{a}±0.2

a and b: Group means denoted with different superscripts are significantly different at P<0.05.

The present results indicated the beneficial effects of feeding corn silage on reproductive performance of does and their bunnies as compared to the other silage types and the control diet.

Generally, Tawfeek and El-Gaafary (1991) and Rashwan and Gaafary, (1992) found that average conception rate in natural mating ranged from 60 to 65.2%. The results of conception rate obtained on NZW rabbits ranged between 61.75 and 100% (El- Kerdawy and Rashwan, 1998; Ibrahim, 1999; Gadalla *et al.*, 2002 and Goerg, 2004)

The present values of litter size in all groups espicially for silage groups are in agreement with those repoted on NZW rabbits by several authors. Values of litter size in NZW rabbits were found to range between 5.75 and 9.70 as reported by many authors under Egyptian condition, (Tawfeek and EL-Gaafary, 1991; El-Kerdawy and Rashwan, 1998 and Ibrahim, 1999).

Ibrahim, (1999) showed that litter size at day 21 ranged between 3.5 and 7.3 and litter size at weaning ranged between 2.5 and 7.3. Results of Gadalla *et al.* (2002) showed that values of litter size at birth, 21 and 28 days in the NZW rabbits were 7.09, 6.40 and 6.13, respectively.

In accordance with the obtained results, gestation period length ranged between 30.4 and 33.0 days as found in the literature on NZW rabbits (Tawfeek and El-Gaafary, 1991; Yamani *el al.* 1994; Gadalla *et al.*, 2002 and Goerg, 2004), which indicated unaffected gestation period in all silage groups.

Live body weight of does during suckling period:

During different weeks of the suckling period, there were insignificant group differences in LBW of does, although there was a tendency of heavier weight of does fed carrot tops silage and lighter weights of those fed carrot roots, berseem and corn silage than the control does (Table 4).

Concerning the changes in LBW of does at successive weeks of the suckling period, it is of interest to note that does in all groups showed marked reduction in their LBW, except those of carrot roots and carrot tops groups.

On the other hand, does feed corn silage showed the highest reduction during all suckling weeks (Table 4).

The present trend of decrease observed in the control, berseem silage and corn silage groups is in agreement with that reported by Goerg (2004) during suckling weeks for NZW does on the same flock. The observed continuous increase of LBW of does fed carrot roots or carrot tops silage, being higher in carrot roots than in carrot tops group may indicate satisfactory growth performance rather than the milk yield of does in these groups. This also may indicate that beside the available nutrients for milk production, a part of the available nutrients in diets of these groups is diverted to growth, which may suggest poorer feed utilization for milk yield of does fed carrot roots or carrot tops silages.

Table (4): Average live body weight of does in different dietary groups during suckling weeks.

Suckling week	Control	CFD plus silage of			
		Carrot roots	Carrot tops	Berseem	Corn
Live body weight (g):					
0	2900±72	2860±96	2970±85	2910±116	2870±49
1	2923±21	2824±120	2969± 46	2880±124	2865± 46
2	2899±18	2836±119	2970±39	2860±109	2802 ±7.5
3	2885±15	2874±112	2976±42	2908±102	2773 ±46
4	2878±10	2890±119	2983±56	2905±94	2748 ±93
Changes in live body weight (g):					
0 ~ 1	23	-36	-1	-30	-5
1 ~ 2	-24	12	1	-20	-63
2 ~ 3	-13	38	6	48	-29
3~ 4	-7	16	7	-3	-25
1~ 4	-21	20	11	-5	-122

Milk Intake:

Data in table 5 show that average daily milk intake (ADMI) of does did not differ significantly among dietary groups at each of the suckling week. Generally, average daily milk yield during each of suckling week was insignificantly higher in all silage groups than the control one, being the highest in does fed corn silage diet.

The present results indicated the negative relationship between milk intake and LBW of does during different suckling period (Pascual *et al*, 1996 and Rashed, 2002). Increasing milk intake of does fed corn silage diet may be related to a tendency of increasing their litter size (LS) at different suckling weeks (Rouvier *et al.*, 1973; Balley *et al.*, 1988; Yamani *et al.*, 1991 and Goerg, 2004). Also, Lukefahr *et al.* (1983) and Nasr (1994) found highly significant positive correlations between milk yield and litter size at different stages of lactation. Also, this increase may be attributed to the higher utilization of lactating cows fed corn silage diet (Mohi-Eldin and Sewify, 2004).

Table (5): Average daily milk yield of doe rabbits in different dietary groups at successive suckling weeks.

Age (week)	Control	CFD plus silage of			
		Carrot roots	Carrot tops	Berseem	Corn
1	80.0±8	87.5±23	77.5 ±14	88.8±17	115.0±4
2	157.5±11	141.3±8	152.5 ±13	151.3±13	163.8±7
3	160.0±6	167.5±20	163.8 ±10	165.0±9	176.3±11
4	110.0±8	145.0 ±35	141.3 ±6	145.0 ±13	163.8±12
Overall mean	126.9±11	135.3±19	133.8±13	137.5±14	154.7±11

Generally, Hassan *et al.* (1994) suggested that the changes in MY might be related to the changes in the physiological efficiency of the doe especially those related to the capacity of mammary glands.

Gradual increase in ADMI of does was found in all dietary groups up to the 3rd week, thereafter it decreased at the 4th week of lactation period. This trend was obtained in NZW rabbits by Yamani *et al.* (1991) and Goerg (2004).

Milk composition of does:

Milk composition including percentages of fat, protein, lactose, total solids and solids not fat presented in table (6) revealed that all chemical contents in milk showed inconsistent trend of differences as affected by dietary treatments at different suckling weeks. Fat percentage was not affected significantly by treatment during the 1st and 2nd week in milk of does ranging between 6.37 - 7.0% in all groups.

It is of interest to note that, fat content showed significantly ($P<0.05$) differences at the 3rd and 4th suckling week, being always significantly ($P<0.05$) higher and more pronounced in carrot roots silage group as compared to the other groups (Table 6). The trend of change in milk fat content was in negative relationship with milk yield at the 3rd and 4th week (Goerg, 2004). The significant ($P<0.05$) increase in fat content of milk for does fed carrot roots silage group may be related to increasing carotene and vitamin A content in carrot roots than in the other types of silage.

Average protein content did not differ significant among treatment groups, however it markedly increased by advancing suckling week in all groups (Table 6).

It is worthy noting that lactose content was higher in all silage groups during the first three weeks of the suckling period, but the differences were significant ($P<0.05$) at the 1st and 3rd week. However, at the 4th week only does fed corn silage showed significantly ($P<0.05$) higher lactose content than the control group. Lactose content showed slight trend of change through successive suckling weeks (Table 6).

In contrast to fat and protein content, lactose showed the highest content in milk of doe rabbits fed control and carrot roots silage diets at the 2nd week and in those fed carrot tops and corn silage at the 4th week, while it was the highest at the 3rd week in berseem silage group.

The present milk contents regard to fat, protein and lactose may be in accordance with the earlier higher activity of lactose and later higher activity of lipase and protease in digestive tract of bunnies during suckling period (Cheeke, 1978).

Table (6): Average percentages of contents of milk of does in different dietary groups at successive suckling weeks.

Item	Control	CFD plus silage of			
		Carrot roots	Carrot tops	Berseem	Corn
Fat (%):					
1 week	9.4±0.10	9.37±0.12	9.7±0.2	9.4±0.1	9.63±0.1
2 Week	9.6±0.03	10.0±0.23	9.9±0.06	9.6±00	10.0±0.2
3 week	10.0±0.10^{b}	11.8±0.8^{a}	10.3±0.17^{b}	9.8±0.1^{b}	10.1±0.1^{b}
4 week	10.1±0.07^{b}	12.8±0.6^{a}	10.5± 0.03^{b}	10.2±0.06^{b}	10.2±0.1^{b}
Protein (%):					
1 week	3.4±0.07	4.0±0.15	3.7±0.84	4.6±0.32	4.6±0.5
2 Week	5.0±0.3	5.3±0.09	4.1±0.14	5.2±0.19	4.7±0.6
3 week	6.8±1.1	7.0±1.1	6.4±0.14	6.4± 0.26	6.0±0.1
4 week	8.5±0.25	7.7±0.31	7.2±0.09	7.2±0.29	7.4±0.4
Lactose (%):					
1 week	0.53±0.08^{b}	0.97±0.09^{a}	0.90±0.10^{a}	1.10±006^{a}	0.93±0.08^{a}
2 Week	1.40±0.11	1.40±0.10	1.00±018	1.17±0.12	1.00±0.20
3 week	0.87±0.07^{c}	1.10±0.06^{ab}	1.03±0.03^{b}	1.27±0.06^{a}	1.10±00^{ab}
4 week	1.00±0.11^{b}	1.17±0.03^{b}	1.27±0.03^{ab}	1.17±0.12^{b}	1.40±0.11^{a}
Total solids (%):					
1 week	20.1±0.09^{b}	20.30±0.2^{b}	20.3±0.78^{b}	22.0±0.25^{a}	22.5±0.32^{a}
2 Week	22.6±0.46	22.8±0.35	21.0±0.14	21.93±0.27	21.77±1.0
3 week	24.4±0.88	25.9±1.6	23.77±0.77	23.57±0.29	23.17±0.1
4 week	25.4±0.41^{ab}	26.7±1.0^{a}	23.71±0.07^{b}	25.6±0.78^{ab}	24.8±0.18^{ab}
Solids not-fat (%):					
1 week	14.3±0.14^{ab}	14.0±0.17^{ab}	13.6±0.86^{b}	15.1±0.21^{a}	15.1±0.27^{a}
2 Week	15.7±0.35^{a}	15.8±0.31^{a}	14.1±0.19^{a}	15.3±0.27^{ab}	14.8±0.78^{ab}
3 week	15.8±0.15	17.0±0.96	16.4±0.21	16.3±0.43	16.1±0.11
4 week	18.1±0.15	17.3±0.29	17.4±0.26	17.3±0.1	18.0±0.26

a and b: **Group means denoted with different superscripts are significantly different at P<0.05.**

Percentage of total solids (DM) in milk of doe rabbits was affected significantly (P<0.05) by dietary treatment only at the 1st and 4th week, being significantly (P<0.05) the highest in berseem and corn silage groups at the 1st week and in carrot roots silage group at the 4th week (Table 6).

The significantly differences in total solids was attributed to the highest fat and protein contents and higher lactose content at the 4th week of lactation, which had negative relationship with milk yield. Pascual *et al.* (1996) reported that the highest values of DM content in milk of doe were mainly related to fat content.

It is of important point of view to note that solids not fat content in milk of does in all groups showed nearly similar trend to those of total solids content, being significantly ($P<0.05$) the highest in does fed berseem and corn silage at the 1st week and insignificantly the highest in those fed carrot roots silage and control diets at the 2nd week (Table 6). This trend was associated with fat content.

Generally, the present milk composition of doe rabbits in all groups were nearly similar to that reported by Lebas (1968). On the other hand, (Kalugin, 1992) protein percentage of milk at different times during lactation ranges from 13.0 to 16.9, fat from 9.1 to 17.5, and lactose from 0.2 to 1.63. However, fat percentage were 21-24% and percentage of protein 12-16%) remained relatively constant throughout lactation (Duby *et al.*, 1993)

It is of interest to note that all milk contents of does showed different trends for all contents as affected by dietary treatments. Generally, milk composition was affected by dietary factors including level of fat (Pascual *et al.*, 1996) and curd protein (Rashed, 2002) in diets of rabbits.

The pronounced changes in milk composition in all treatment groups throughout lactation weeks were indicated by Lebas (1972); Pascual *et al.* (1996) and Rashed (2002). El-Sayiad, (1994), who observed considerable changes in milk composition after the 3rd lactation week.

Bunnies performance:

Average live body weight:

At birth, only bunnies from does fed carrot tops silage showed live body weight (LBW) and average daily gain (ADG) similar to that of the control group, while, bunnies of the other groups showed lighter LBW and ADG as compared to the control. Bunnies of does fed berseem silage showed insignificantly the heaviest weight and the highest ADG during the 1st and 2nd week, however, those of does fed corn silage showed significantly ($P<0.05$) the heaviest weight and the highest ADG during the 3rd and 4th week of the suckling period, as compared to the other groups (Table 7).

The observed improvement ($P<0.05$) in LBW and ADG of bunnies from does fed corn silage during the 3rd and 4th week of the suckling period was associated with a tendency of higher milk yield (Table 7), higher lactose content (Table 7) in milk of their dams during these weeks and/or with the higher OM and NFE contents in corn silage (Table 2). It is known that bunnies start to pick solid feeds from 18-21 days of birth (Ceecke, 1978). Nasr (1994) reported that the bunny body gain was the highest at the third week, probably due to the increase in milk yield in that period.

Holdas and Szendro (1982) found positive correlation coefficient of weight gain of bunnies with milk yield of their dams, ranging between 0.84 and 0.90. They added that amount of milk necessary for 1g gain between 1 and 21 days was estimated as 1.82g.

Table (7): Average live body weight and daily gain of bunnies during the suckling period in different dietary groups.

Age (week)	Control	CFD plus silage of			
		Carrot roots	Carrot tops	Berseem	Corn
Live body weight (g):					
0	59.2 ± 4.7	49.6 ± 5.6	58.8 ± 3.1	52.4 ± 8.9	56.0 ± 3.4
1	117.4±18.6	105.0 ±7.8	124.1 ± 5.5	141.3±22.2	133.7±11.3
2	202.1±29.1	191.2±14.7	232.3 ±67	232.3±20.8	235.5±15.7
3	292.7±29.5^{b}	286.1±26.4^{b}	332.9 ±9.3^{ab}	336.7±17.5^{ab}	370.4±22.7^{a}
4	439.9±22.7^{b}	4359±12.5^{b}	473.8±13.8^{b}	461.8±14.1^{b}	595.5±6.9^{a}
Average daily gain (g/d):					
0 ~ 1	8.3± 1.5	7.9±1.3	9.3±0.9	12.7±1.2	10.7±1.6
1 ~ 2	12.1±1.9	15.5 ±1.7	15.5±1.8	13.0 ±1.7	14.9 ±1.9
2 ~ 3	13.0±2.1^{b}	13.0 ±2.2^{b}	14.4±1.9^{b}	14.9 ±1.8^{b}	20.8 ±2.0^{a}
3 ~ 4	21.3±2.2^{b}	21.8 ±2.1^{b}	20.1±2.1^{b}	17.9 ±2.4^{b}	30.8±2.6^{a}

a and b: Group means denoted with different superscripts are significantly different at P<0.05.

The present values of LBW and ADG of bunnies in all groups are in agreement with those reported on the same flock by Goerg (2004). Also in NZW does, average weight of the young at birth and at the 3rd week of age was 58.2-57.9 and 286 g, respectively (Kowalska, 2000).

Viability rate:

Viability rate of bannies presented in table (8) was not affected significantlly by dietry treatments. It is of interest to not that viability rate at the 1st week after birth and from 3 week to waning was 100 %. Between 1-2 and 2-3 week, bunnies of dose fed berseem silage showed the highest vaibility rate as compared to the other silage groups and the control one (Table 8).

Generally, the overall viability rate during the suckling period was the highest in berseem silage grroup, followed by corn and carrot tops silage groups, however, those in carrot roots and control groups showed the lowest viability (Table 8).

Table (8): Viability rate (%) of bunnies during the suckling period in different dietary groups.

Age (week)	Control	CFD plus silage of			
		Carrot roots	Carrot tops	Berseem	Corn
(0 ~ 1)	100	100	100	100	100
(1 ~ 2)	90.9	85.7	92.6	91.3	92.6
(2 ~ 3)	90.0	95.8	92.0	95.5	62.0
(3 ~ 4)	100	100	100	100	100
(0 ~ 4)	81.8	82.1	85.2	91.3	85.2

Based on thehregoing results, feeding doe rabbits on berseem and corn silage diets resulted in some improvement concerning milk yield and composition and in turn good growth performance and viability of their bunnies.

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تأثير الغذاء المحتوى علي أنواع مختلفة من السيلاج علي الأداء الإنتاجي والتناسلى لأمهات الأرانب وخصائص النمو للخلفات.

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تهدف هذه الدراسة لفحص تأثيرات تغذية أمهات الأرانب علي علائق محتوية علي أنواع مختلفة من السيلاج علي كفاءتها الإنتاجية والتناسلية وكذلك على الخافة الناتجة. استخدم في هذه الدراسة ٢٥ من أمهات الأرانب النيوزلاندى عمر ٦ شهور قسمت إلي خمس مجموعات تجريبية، المجموعة الأولي غذيت علي ١٠٠% عليقة مصنعة بينما المجاميع الاخرى غذيت علي ٧٠% عليقة مصنعة و٣٠% سيلاج (المجموعة الثانية غذيت علي سيلاج الجزر والمجموعة الثالثة علي سيلاج عروش الجزر والمجموعة الرابعة علي سيلاج البرسيم والمجموعة الخامسة علي سيلاج الذرة الكامل). وغذيت كل المجاميع من عمر ٦ شهور وحتى الولادة الأولي ويمكن تلخيص النتائج المتحصل عليها كالتالي:-

١- انخفض عدد التلقيحات اللازمة للإخصاب وكذلك ومعدل الخصوبة في أمهات الأرانب المغذاة علي عرش الجزر مقارنة بالمجموعات الأخرى بينما لم يتأثر وزن الأمهات عند الولادة- فترة الحمل – عدد ووزن الخلفات عند الولادة بالمعلملات الغذائية.

٢- زاد عدد ووزن الخلفات عند الفطام في مجموعات السيلاج عن مجموعة المقارنة ماعدا مجموعة سيلاج البرسيم التي لم تختلف معنويا عن المجموعة المقارنة أو مجموعات السيلاج الأخرى.

٣- لم يتأثر وزن الجسم للأمهات أثناء أسابيع الرضاعة بين المجموعات التجريبية ولكن فقط مجموعة سيلاج الجزر لم تظهر أى انخفاض في الوزن أثناء أسابيع الرضاعة.

٤- لم يتأثر انتاج اللبن اليومي بالمعاملات الغذائية وتراوح بين ١٣٣,٨ -١٥٤,٧ جم/يوم في مجموعات السيلاج مقارنة ب ١٢٦,٩ جم/يوم لمجموعة المقارنة.

٥- ادخال السيلاج في علائق لأرانب أدى إلي تغيرات معنوية في دهن – لاكتوز- الجوامد الصلبة الكلية والجوامد الصلبة اللادهنية في اللبن.

٦- أظهرت فقط صغار أمهات الأرانب المغذاة علي سيلاج الذرة الكامل أعلي الأوزان وأعلي معدل نمو يومي معنويا.

عموما فإن الدراسة المقدمة توصى بإدخال سيلاج البرسيم والذرة والجزر فى علائق أمهات الأرانب دون التأثير علي كفاءتها الإنتاجية والتناسلية.