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Original Article

EVALUATION OF SUPPLEMENTING HERBAL PRODUCT TO SOWS FOR IMPROVING LITTER WEIGHT AND REDUCING PIGLET MORTALITY

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ABSTRACT

Objective: To examine the impact of the herbal product in improving litter weight, reducing piglet mortality and increasing milk production in sows.

Methods: 20 sows which were in their late gestation period were randomly divided into two groups (n=10). Group T_0 sows served as no treatment control group, and T1 group sows were supplemented with herbal galactagogue premix, Payapro (*M/S Ayurvet Ltd., Baddi*) administered for 5 d prior to farrowing and & 10 d post farrowing.

Results: The analyses of result revealed that the postpartum milk yield (Approximately for 2 mo) was found to be increased in Payapro supplemented group (166 liters) in comparison to control group (103.5 liters). A significant reduction in mortality in Payapro supplemented group was evident at the time of weaning. Mean piglet weight was improved in the treatment group by 38.8%. Average litter size was also more in Payapro supplemented group (8.6) than the control group (7.7).

Conclusion: Payapro premix can enhance the sow productivity in terms of milk production and number of. pigs produced per litter.

Keywords: Galactogogue, Mean piglet weight, Average mortality

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INTRODUCTION

Pig producers are paid for every produced pig for slaughter or sold piglet, depending on the type of production. Piglet mortality is not only an economical issue but also is an ethical and animal welfare problem due to the suffering of the dying piglets [1]. The piglet mortality has been reported to be highest in the first week after farrowing [2]. Furthermore, a major part of the piglet mortality in the first week occurs within the first 24 h after farrowing. Ideal conditions for successful farrowing and subsequent lactation include appropriate hygiene measures, good quality and quantity of food provided for the sow, adequate provision of drinking water, optimal environmental temperature, and humidity, as well as human intervention and assistance where necessary [3-6]. Inadequate energy stores in newborn pigs contribute to the high mortality rate in piglets in the swine industry. The rearing capacity of sows during the lactation period largely depends on their ability to produce and transfer colostrum and milk to their piglets. Quantities of maternal energy reserves from both prefarrowing and current food intake help to determine the milk output of the sow [7]. Management procedures in modern intensive pig production include a number of practices that might act as stressors on the animals. The present study examined the impact of Payapro premix (M/S Ayurvet Limited, India) on the survivability of piglets before weaning and post-farrowing, postpartum milk production, body weight at the time of birth and litter size.

MATERIALS AND METHODS

Experimental design

A field trial was carried out in Proddatur Mandal of Kadapa District of Andhra Pradesh. The sows belonged to the local farmers of Kadapa District of Andhra Pradesh. The experiment was conducted on a total of 20 sows which were in their late phase of the gestation period. The sows were randomly divided into two groups-T_0 (n = 10) & T_1 (n =10). Group T_0 sows served as untreated control, and no dietary treatment or anti stress or product was given to sows of this group. Group T_1 sows were supplemented with Payapro premix at 15 g for 5 d prior to farrowing and 10 d post farrowing. Milk yield post partum (Approx. for 2 mo in liters), survivability % at the time of weaning, mean piglet weight per sow per group, average litter size per sow were recorded.

RESULTS AND DISCUSSION

Average milk production (liters)

Sow productivity is often measured in terms of the number of a piglet born and weaned per year. The production and composition of colostrums and milk is essential for the piglet ability to survive and grow, both during lactation and after weaning [8-10]. Sow milk is very important for the supply of nutrients to piglets that will later ensure a profitable meat product. Average milk production in the untreated control group was found to be 103.5 liters and in Payapro premix supplemented group the average milk production was 166 liters (table 1). The increase in milk production may be due to the use of an herbal preparation containing *Foeniculum vulgare, Leptadenia reticulate, Nigella sativa* and *Pueraria tuberose* which are known to have milk production increasing properties [11].

Average mortality and survivability (%) at the time of weaning

Pre-wean mortality results from either non-infectious or infectious factors. Non-infectious reasons are deaths due to overlaying and crushing by the sow, starvation, emaciation and stress, whereas infectious reasons are scouring or diarrhea, pneumonia, and other illness. The major cause of piglet mortality is piglets being laid on by a sow, which is usually referred to as piglet crushing [12, 13]. The problem of piglet crushing is not only an economic loss but a welfare concern, as nearly 70% of crushed piglets are otherwise healthy and viable [14]. In present study, in uncomplemented control group high mortality at the time of birth (19.48 %) and during pre-weaning period (14.52%) was observed as compared to Payapro premix supplemented group in which the mortality at the time of birth and during pre-weaning period was recorded to be 6.97 % and 6.25 %, respectively (table 2). In Payapro premix supplemented and untreated control group, the survivability percentage at the time of weaning was recorded to be 87.2 % (75 out of 86 born) and 68.83% (53 out of 77 born), respectively (table 2). The improvement in survivability percentage in Payapro premix supplemented group may be attributed to immunomodulatory potential of its ingredient herb viz *Cuminum cyminum* and *Glycyrrhiza glabra* [15].

Table 1: Average milk production (liters) in un supplemented and Payapro premix supplemented group

Group T_0: Un supplemented control											
Sow number`	**Sow**	**Sow**	**Sow**	**Sow**	**Sow**	**Sow**	**Sow**	**Sow**	**Sow**	**Sow**	**Mean**
Parameters	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
Milk yield post partum (Approx. in lts. For 2 mo)	100	100	110	110	105	100	105	100	100	105	103.5
Group T1: Supplemented with Payapro premix											
Milk yield post partum (Approx. in lts. For 2 mo)	170	160	170	170	160	160	160	170	170	170	166

Table 2: Average mortality and Survivability (%) at the time of weaning in un supplemented and Payapro premix supplemented group

Group T_0: Un supplemented control											
Sow number	**Sow1**	**Sow2**	**Sow3**	**Sow4**	**Sow5**	**Sow6**	**Sow7**	**Sow8**	**Sow9**	**Sow10**	**Mean**
Parameters											
Mortality at the time of birth	1	1	1	1	1	2	2	2	2	2	15 out of 77 born (19.48 %)
Mortality during pre-weaning period	--	--	2	--	2	--	3	--	2	--	9 piglets out of 62 born (14.52 %)
Survivability % at the time of weaning	7	7	4	7	4	6	3	6	3	6	53 out of 77 born (68.83%)
Group T_1: Supplemented with Payapro premix											
Mortality at the time of birth	1	0	0	1	1	0	1	1	1	0	6 out of 86 born (6.97 %)
Mortality during pre-weaning period	0	0	1	0	1	1	0	0	1	1	5out of 80 (6.25 %)
Survivability % at the time of weaning	7	9	7	8	6	8	8	8	6	8	75 out of 86 born =87.2 %

Mean piglet weight (Kg) and litter size per sow

Many factors influence litter size. These include genetics, gilt management, lactation length, parity distribution, disease, stress and boar fertility [16]. In Payapro premix supplemented group the mean piglet weight was found to be 1.25 kg and mean litter size was 8.6 whereas in control group mean piglet weight per sow was 0.90 kg and mean litter size was 7.70 (Table3).

The high body weight and litter size in Payapro premix supplemented group may be attributed to its ingredient herbs viz *Asparagus racemosus* which is reported to have anti stress activity [17].

Table 3: Mean piglet weight (Kg) and litter size per sow in un supplemented and Payapro premix supplemented group

Group T_0: Un supplemented control											
Sow number	**Sow1**	**Sow2**	**Sow3**	**Sow4**	**Sow5**	**Sow6**	**Sow7**	**Sow8**	**Sow9**	**Sow10**	**Mean**
Parameters											
Mean piglet weight/Sow/Group (Kg)	0.75	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.75	0.75	0.90
Average litter size per sow	8	8	7	8	7	8	8	8	7	8	7.70
Group T1: Supplemented with Payapro premix											
Mean piglet weight/Sow/Group (Kg)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Average litter size per sow	8	9	8	9	8	9	9	9	8	9	8.6

CONCLUSION

Payapro premix supplementation had significantly increased the milk yield postpartum. Mortality was decreased, and survivability was increased in piglets of Payapro premix supplemented sows. This suggests that Payapro premix can enhance the sow productivity in terms of milk production and number of. pigs produced per litter.

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CONFLICT OF INTERESTS

Declared none

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