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**STUDY ON THE EFFECT OF HERBAL SUPPLEMENT (Alphacool) ON  
GROWTH PERFORMANCE AND FEED INTAKE DURING HEAT  
STRESS IN SWINE SPECIES**

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**ABSTRACT**

Pig Farming is India growing very fast and northeast part is very predominant in this. Even though India has huge pig population but still there is lack of knowledge towards the best management practices of pig farming. In India there is a time from March until September where temperature got up to 45 degree and cause enormous effect on growth and well being of human as well animal species. In dairy and Poultry sector various approaches are made to reduce the impact of heat stress especially by manipulating diet with substitutes which can control or eliminate heat stress. Alphacool is one such product marketed by Alphafacts health solution BVBA which claimed to be effective in Heat stress. In this Trial study Alphacool is supplemented in pig diet and two groups were measured for growth performance comparison and feed intake related parameters. The Field Trial was done for 95 days and at end of trial it was observed that group which was supplemented with Alphacool have higher body weight as well daily gain as compare to the group which does not have Alphacool in diet. Hence it is recommended that Alphacool (a herbal Supplement) have beneficial effect in controlling heat stress in Swine Species.

**Keywords:** Swine Species, Pig Farming, Heat stress, Alphacool, A herbal Supplement

**INTRODUCTION**

As hotter temperature getting nearer, Farmers must be prepared to reduce heat stress in their pigs. Even though most swine species are managed inside, it is not every time feasible to overcome negative effects of high temperatures on swine performance. Stress caused by excessive heat is the major concerns in pig production because pig overall do not have functional sweat glands which are otherwise present in other livestock species and assist them in efficiently controlling and eliminating body high temperature. For pigs it's the two processes which help

them to reduce the effects of heat stress: i.e. increased heat dissipation and reduction in body heat production. Pig species attempt for heat dissipation by elongating the contact of their body with a cooler surface, increased respiration, panting, increases the air flow, evaporation of water from the lungs and finally by releasing additional heat. Swine as a whole reduce the amount of heat generated in the body by reducing feed intake, decreasing activity, and increasing water consumption. Hence overall heat stress leads to result, pigs exhibit poor growth rate and feed conversion, reduced milk production during lactation, impaired fertility, and increased mortality rates.

Some of these events happen over a range of temperature because there are certain factors that may influence what the pig may be experiencing as far as temperature is concern. Certain Factors affecting temperature experienced by the swine are: air speed, humidity, group size, surface temperature, building materials, etc.

To overcome these issues related with Heat stress a study was planned in swine species to check efficacy of Product Alphacool from Alphafcats health Solution BVBA in Institutional Pig Farm, Mathura. The product has significant effects in controlling the heat stress in poultry birds as well on Dairy animals, but its effect on swine species were very limited.

## **MATERIAL & METHOD**

The experiment was conducted at the Experimental Farm, Institutional pig farm, Mathura, Uttar Pradesh, India. The pigs housed in a facility 3.4m high, covered with tiles. Two treatment groups were compared in this trial study where one group diet was supplemented with Alphacool while other group was just plain without the herbal product Alphacool in diet.

Both group included 6 castrated males and 9 females (all F1 Landrace x Large White), starting with an average age of 60d and finishing with an average age of 145d. Considering both the groups 30 pigs were raised. The pigs were fed ad lib with a 19% CP grower diet. Feed consumption was noted for both group, comparing the difference between the feed supplied during the period and that left at the end of each group. The pigs were weighted at different period i.e. 0, 30, 60 and 90d of the experiment, so weight gain during the period was calculated. Feed conversion was calculated per group, by comparing data on feed consumption with weight gain during trial period. Temperature and relative humidity during the trial period were also analyzed and keep tract so as to keep check on amount of heat stress during the trial period. The various effects of treatments within lots were analyzed with repeated measures. The growth parameters like average feed consumption, average weight gain and feed conversion ratio were compared across treatments by Simple average mean calculation method.

<b>Table 1. Diet composition in Experiment</b>			
<b>Group-1</b>		<b>Group-2</b>	
Corn	70	Corn	70
Soybean meal (46.5% CP)	25	Soybean meal (46.5% CP)	25
DCP	1	Dicalcium phosphate	1
Alphacool	0	Alphacool	0.1
LSP	0.40	Limestone	0.40
L-lysine HCl	0.45	L-lysine HCl	0.45
L-threonine	0.15	L-threonine	0.15
DL-Methionine	0.12	DL-Methionine	0.12
Salt	0.30	Salt	0.30
Rice Bran Oil	2	Rice Bran Oil	2
Vitamin premix	0.70	Vitamin premix	0.70
Trace mineral premix	0.10	Trace mineral premix	0.10

## **RESULT & DISCUSSION**

This trial investigated the dynamic effect of Alphacool on swine growth performance during high temperature treatment. The results indicated that high temperature treatment decreased swine growth performance especially when observed in group 1. Dietary supplementation with Alphacool improved swine growth performance in heat stressed pigs, especially on Group 2 whose diet was supplemented with Alphacool @ 1 Kg/MT. The current results show that a high temperature does not affect swine feed intake, but it does affect feed: gain ratio. The Pig supplemented with Alphacool achieved more weight gain daily as illustrated in table-2.

In the current study, the nutrient utilization were decreased by high temperature especially in group 1 which indicates that heat stress induced the reduction of intestinal digestion and nutrient absorption. Various previous studies also concluded that high temperature alter nutrient digestibility. In conclusion, a high temperature stress decreased the growth performance of pig

and by dietary supplementation with Alphacool there is drastic improvement in pig growth performance.

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**Table.1**

Growth Performance of pigs fed diets without (Control) and with Alphacool @ 1 Kg/MT					
	Start Weight (kg)	End weight (kg)	No. Of days	Total Gain(kg)	Gain/day(gm)
Group 1(Control)	54.5	128	95	73.8	778
Group 2(Treatment)	54.2	142	95	77.8	924

**Table.2**

Feed Consumption of pigs fed diets without (Control) and with Alphacool @ 1 Kg/MT		
	Feed each Pig Daily(Kg)	Feed per gain(g/g)
Group 1(Control)	2.50	3.2
Group 2(Treatment)	2.54	2.74