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Effects of Form of Sulfa on Medicated Water Consumption

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Summary

Four-week old weaned pigs demonstrated a marked preference in medicated water consumption depending on form of sulfa. Medicated water consumption was greatly reduced when sulfamethazine was used. Sulfadimethoxine was the most readily accepted one evaluated and sulfathazine preferred least.

Introduction

Sulfa preparations have been used in treating swine for numerous diseases. Adding a sulfa salt to the drinking water is often indicated because sick pigs will drink but frequently will not eat. Medication can often be provided quicker through the water than added to the feed. This study was conducted to determine palatabilities of the sodium salts of sulfa dimethoxine (SDM), methazine (SM), and thiazole (ST).

Procedures

We conducted two trials using 200 pigs. In both trials 100 four-week old crossbred pigs were weaned and placed in 5' x 10' totally slatted pens in an environmentally controlled nursery. Feed was provided from a self-feeder and the water or sulfa medicated water was offered in Pigglyi-Tanker waterers (a three gallon plastic tank with an attached cup waterer). Pigs were given a 12 hour adjustment period to learn to use the waterers before the experiment started. Two waterers were provided in each pen. The following comparisons were made:

Pen 1	H_2O - H_2O	Pen 6	ST - SDM
Pen 2	H_2O - Sulfathiazole (ST)	Pen 7	SM - SDM
Pen 3	H_2O - Sulfamethazine (SM)	Pen 8	ST - ST
Pen 4	H_2O - Sulfadimethoxine (SDM)	Pen 9	SM - SM
Pen 5	ST - ST	Pen 10	SDM - SDM

Water consumption was determined at 12 hour intervals. The sulfamethazine and sulfathiozole initially were offered as a .19% solution (1 lb in 70 gallons of water) and sulfadimethoxine as a .07% solution (500 ml of 12½ solution in 25 gallons). After 48 hours the concentrations were halved and offered an additional 72 hours.

Results and Discussion

Table 25 summarizes consumption of water by pen during the first 48 hours of the 120-hour trial. Palatabilities of the three sulfas differed markedly, and most noticeably the first 48 hours while full strength solutions were offered, and the palatability pattern persisting through the 120-hour test. Pigs consumed much less medicated water when sulfamethazine was used than the other sulfas, or water, and when sulfamethazine was the only liquid available. Sulfathiazole was not consumed as well as water or SDM. However, consumption of liquid when only ST was offered was not greatly reduced.

Pigs preferred water to SDM but the intake of SDM markedly exceeded intake of ST or SM, and intake of SDM the first 48 hours was excellent.

Even though lights were on 24 hours a day, the pigs drank more water from 7 AM to 7 PM than the next 12 hours. There was no evidence of post-weaning diarrhea or pneumonia, so efficacies of the sulfas were not evaluated.

Table 25. Water Consumption as Influenced by Form of Sulfa[a]

Treatment	Intake for 48 hrs		Intake for 120 hrs	
	lb	liters	lb	liters
H_2O	27.1	12.3	69.4	31.5
H_2O	31.1	14.2	73.5	33.4
ST	24.7	11.2	59.0	26.8
H_2O	38.6	17.5	105.0	47.7
SM	1.7	.8	4.7	2.3
H_2O	50.6	23.0	133.3	60.6
SDM	18.1	8.3	54.2	24.6
H_2O	23.5	12.9	79.0	35.9
ST	49.6	22.6	142.0	64.5
SM	4.4	2.0	6.6	3.0
ST	15.2	6.9	35.8	16.3
SDM	32.4	14.7	85.8	39.0
SM	3.7	1.7	5.2	2.4
SDM	54.0	24.5	145.5	66.1
ST	19.1	8.7	53.0	24.0
ST	21.6	9.8	46.6	21.2
SM	7.1	3.2	23.1	10.5
SM	6.0	2.7	52.3	27,8
SDM	31.8	14.5	81.0	36.8
SDM	28.2	12.8	71.0	32.3

[a]Intake in pounds or liters per container with two containers and 10 pigs per pen. Average of two trials.