



THE EFFECT OF AQUALYTE® ON WEIGHT RETENTION DURING TRANSPORTATION OF HOGS

Technical Service bulletin No. 193 reported 1983 studies conducted by Dr. Robert Berg of the University of Minnesota on the treatment of turkeys with **AQUALYTE** prior to shipment. By adding Dawe's electrolyte powder to the birds' drinking water, Dr. Berg demonstrated significantly lower shrinkage of live weight in transit to processing.

Two similar trials on market-weight hogs have now been conducted at an Iowa farm. These trials indicate benefits for hogs consistent with Dr. Berg's earlier tests with turkeys.

Methods

Two swine trials were conducted in a confinement hog-finishing house in Iowa. The trials occurred in May and in November of the year. In each trial, an equal number of barrows and gilts were placed in the treatment pen and in the control pen, one week prior to sale.

AQUALYTE was offered to the treatment group via an automatic medicator metering one ounce of stock solution into each gallon of drinking water. One 8-ounce pack of **AQUALYTE** was added to each gallon of stock solution.

The hogs were offered **AQUALYTE** for 48 hours prior to shipment in the May trial. In the November trial, the hogs were offered **AQUALYTE** for 28 hours. In both trials, all hogs received full feed until the day of shipment.

In each trial, the hogs were weighted both prior to loading at the farm, and upon arrival at the packing plant. Ambient temperatures were recorded at the farm and the plant, as was transit time between the two locations.

The table on the next page compares the results of the May and November trials.

TABLE: CALCULATION OF WEIGHT SHRINKAGE
DURING TWO AQUALYTE® TRIALS

	<u>May Trial</u>	<u>November Trial</u>
Temperature (Fahrenheit), confinement house	73	65
Temperature (Fahrenheit), farm	69	30
Temperature (Fahrenheit), packing plant	76	38
Hours of Treatment	48	28
Time Load-out began	8:00 am	7:30 am
Hours between load-out and weigh-in	4.5	5.75
Hogs sold, CONTROL GROUP	20	25
Lbs of Control at farm load-out	4311	6240
Lbs of Control at plant weigh-in	4240	6210
Lbs of Shrink	71	30
Lbs of shrink/hog	3.55	1.20
% shrink	1.65	0.48
Hogs sold, TREATMENT GROUP	20	20
Lbs of Treatment at farm load-out	4515	5020
Lbs of Treatment at plant weigh-in	4465	5005
Lbs of weight shrink	50	15
Lbs of shrink/hog	2.50	0.75
% of shrink	1.11	0.30
(CONTROL shrink/lbs) minus (TREATMENT shrink/lbs)	1.05	0.45
(CONTROL shrink %) minus (TREATMENT shrink %)	0.54	0.18

Discussion

In each trial, the hogs treated with **AQUALYTE**® suffered less shrink than did the control group. During the May trial, treatment hogs shrunk 1.11% in weight, versus 1.65% for control hogs. In November, these results were 0.39% and 0.48%, respectively. In each trial, shrink was reduced by about one-third.

In the May trial, there were 1.05 lbs/hog less shrink for the treatment group than for the control group. The difference in November was 0.45 lbs/hog. Two factors may have influenced the superior May results: (1) ambient temperature was 38 degrees higher in May, and (2) the May treatment lasted 48 hours, versus 28 hours in November.

In each trial, the economic benefits of **AQUALYTE** were clearly demonstrated, as summarized below:

	<u>May Trial</u>	<u>November Trial</u>
Packets AQUALYTE used	3.0	2.5
Dealer price, AQUALYTE packet	<u>x \$ 0.93</u>	<u>x \$ 0.93</u>
Cost of Treatment	\$ 2.790	\$ 2.325
Cost of Treatment/hog	\$ 0.140	\$ 0.116
Added lbs marketed/hog	1.05	.45
Hog Price/lb liveweight	<u>x \$ 0.56</u>	<u>x \$ 0.41</u>
Extra Revenue/hog	\$ 0.588	\$ 0.185
Less: Cost of treatment/hog	<u>- \$ 0.140</u>	<u>- \$ 0.116</u>
Net benefit/hog	\$ 0.448	\$ 0.069
Benefit: Cost	4.200	1.595

In the May trial, for every \$1.00 spent on **AQUALYTE** the hogs earned \$4.20 extra revenue.

In the November trial, \$1.00 spent on **AQUALYTE** returned \$1.59 extra revenue

Note: further that the November hog price was \$0.41/lb, compared to \$0.56/lb in May. If the prices are adjusted to their average of \$0.485/lb, then the November Benefit: Cost ratio becomes 1.88, and May becomes 3.64.

Both trials indicate that in hot weather or cold, the benefits of **AQUALYTE** significantly exceed its cost. As with turkeys, **AQUALYTE** appears to help maintain the value of hogs subjected to the transportation stresses of marketing.