

MicroSource® S

Retains Viability When Fed in Combination with Swine Medications

a DSM Product

MicroSource® S is an effective manure management tool which can be used in all stages of swine production. *In vivo* research has confirmed that MicroSource® S remains viable when fed in combination with sub-therapeutic and therapeutic swine feed antibiotics.

***In vivo* viability studies:**

Two studies were conducted to determine the *in vivo* survival of MicroSource® S in pigs fed therapeutic and sub-therapeutic (growth promoting) levels of feed antibiotics common to the swine industry. In the first study individually fed lactating sows were given *ad libitum* access to water and a standard corn:soy ration including MicroSource® S. On day four (4) post farrowing, a fresh fecal sample was collected from each sow to determine baseline levels of MicroSource® S. Beginning on day five (5) and continuing through day eight (8), four (4) sows received the standard diet with the addition of various antibiotic treatments (Table 1). On day four (4) of treatment (day eight post farrowing), a fresh fecal sample was collected from each sow and MicroSource® S activity was determined. using standard spore enumeration methodology.



There were no significant differences between the basal level of MicroSource® S organisms in the feces and those in the feces when antibiotics were included in the feed (Table. 1). The level of MicroSource S organisms are reported as the Log CFU per g (Log of colony forming units per gram) which is a common microbiological measurement used to compare levels of microorganisms between samples.

In addition these levels are all within the normal range of levels that are obtained from field fecal samples.

Antibiotic Treatment	MicroSource S spores Log CFU per g	
	Baseline	Treated
ASP250	3.98	3.49
BMD 250	3.62	3.67
CTC 100	4.12	3.87
CTC 400	4.43	4.22
Linco 20	3.71	3.49
Neo-Terra 140/100	4.56	3.72
Pulmotil 181	3.85	3.82
Pulmotil 363	4.11	3.60
Tylan 100	4.13	3.94
Tylan 40	3.81	3.98

Table 1.

There were no significant differences ($P>0.05$) in MicroSource® S fecal spore counts between the baseline and treated.

In the second study at placement, pens of grow finish pigs were given *ad libitum* access to water and a standard corn:soy ration containing MicroSource S. On day seven (7) post placement, a fresh fecal sample was collected from each of two pigs per pen to determine baseline levels of MicroSource® S. Beginning on day eight (8) and continuing through

Unlimited. **DSM**

day fourteen (14), four (4) pens received the standard diet with the addition of various antibiotic treatments (Table 2). On the final day of feeding the test diets, a fresh fecal sample was collected from each of two pigs per pen and MicroSource® S activity was determined.

MicroSource S spores Log CFU per g		
Antibiotic Treatment	Baseline	Treated
Dengard 35	4.35	3.92
Stafac 10	4.43	4.43

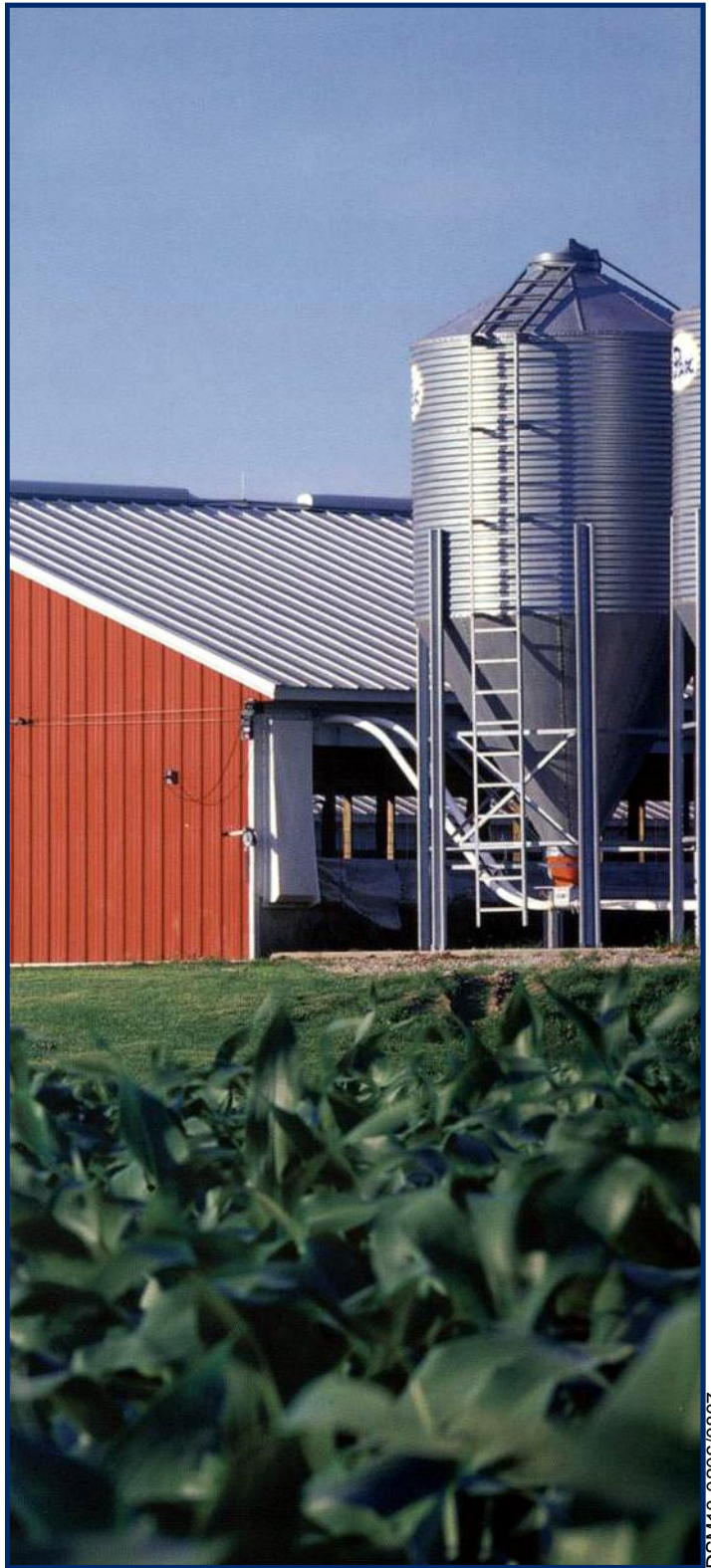
Table 2.

There were no significant differences ($P > 0.05$) in MicroSource® S fecal spore counts between the baseline and treated.

Unlike some DFM's (Direct Fed Microbials) which do not work in the presence of feed medications, MicroSource® S contains specifically selected strains of *Bacillus* which are spore formers and are resistant to antibiotics in the feed. As the medications in the feed are absorbed by the animal or broken down, MicroSource S remains unaffected in spore form. As the feces are excreted and fall into the pit the MicroSource S spores begin germinating and start to work breaking down the manure.

What About Other Drug Levels and Combinations?

Currently there are no Swine feed antibiotics which have been shown to have a detrimental effect on MicroSource® S when fed in combination with it. However if you are using a antibiotic level or combination not listed in Table 1., the viability of MicroSource in the feed can be easily proven by taking fecal grab samples. For more information on documenting the viability of MicroSource® S in the field or this *in vivo* research please contact your DSM Nutritional Products Account Manager.



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*MicroSource® S the right thing to do for you,
your employees, your pigs and the
environment.*

MicroSource® S