

Novin[®] for Swine

A multi-faceted approach to optimizing feed value

Even the best-formulated and properly mixed rations routinely deliver unwelcome toxic substances alongside desired nutrients.

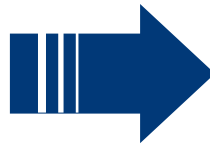
Extensive testing shows that mycotoxins are widely prevalent in feeds, potentially bringing health, performance, and efficiency challenges to every animal, every day.



- Research shows even low-level, chronic exposure can have a significant economic impact.
- Influence of multiple mycotoxins is typically synergistic: 1+1>2.
- Many common toxic compounds have not been monitored historically.

Mycotoxins impact every animal, every day.

- ✓ Toxicity in liver, kidney
- ✓ Intestinal damage
- ✓ Compromised immune function
- ✓ Inflammation
- ✓ Depressed feed intake
- ✓ Reproductive dysfunction



Fewer resources directed towards performance and profit!

What is the actual risk?

NEW OPPORTUNITY: Biomonitoring with Myco-Marker[™]

A unique, patented protocol for monitoring and tracking ACTUAL ON-FARM MYCOTOXIN EXPOSURE in pigs, combining feed and blood analysis.



Example: Myco-Marker[™] assessments in sows

Initial symptoms: vomiting, scours, low feed intake, poor reproduction, slow piglet growth

Feed tests: DON, zearalenone; 100 ppb FUM at day 30

- ✓ Simple (single blood drops)
- ✓ Comprehensive (36 toxins and metabolites)
- ✓ Direct (eliminate limitations of feed sampling)
- ✓ Only available from **Innovad[®]**

BLOOD TEST	DAY 0	AFTER 30 D with Novin [®]
DON	76.7 ppb	7.1 ppb
DON glucuronide	25.9 ppb	5.9 ppb
Zearalanone	10 ppb	ND
Fumonisin	14.7 ppb	ND
Tenuazoic Acid	4.2 ppb	Traces
T2 and H2	Traces	ND
Enniatin A	Traces	ND

Dataset of over 2,000 farm samples

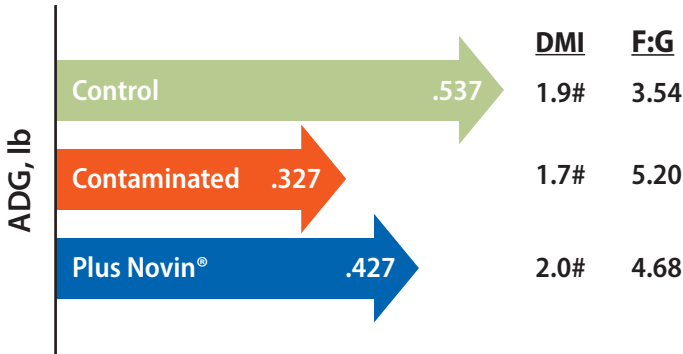
- ✓ 100% exposure to mycotoxins
- ✓ 97% exposure to two or more
- ✓ 50% exposure to 6 or more!

Novin[®] P in Nursery Pig Diets: Observed Outcomes

Evaluated from 15 to 45 days post-weaning
Starting weight 33 lb

TREATMENTS:

1. Control
2. Artificial mycotoxin contamination
3. Mycotoxins plus Novin[®]



Liver, as % BW

Control = 2.7%
Contaminated = 3.4%
With Novin[®] = 2.9%

Bilirubin, vs Control

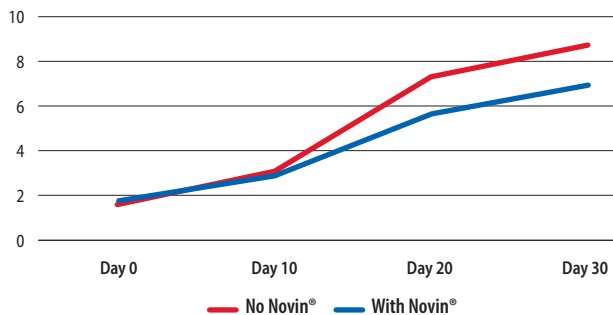
Contaminated ↑ 41%
With Novin[®] ↑ 19%

RESPONSE TO ASF VACCINATION

	Antibody Titer	Protection Level
Control	1:22.8	90%
Contaminated	1:10.2	60%
Plus Novin [®]	1:19.3	86%

Oxidative stress Biomarker

Blood malondialdehyde, ~μmol/L, after artificial feed contamination with a blend of mycotoxins



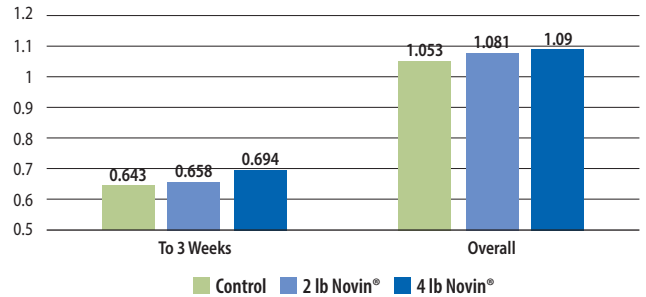
Evaluated for 45 days post-weaning
Starting weight 13.6 lb

TREATMENTS:

1. Control
2. Control plus 2 lb/ton Novin[®]
3. Control plus 4 lb/ton Novin[®]

WEEK	BODY WEIGHT, LB			P-value
	Control	2 lb Novin [®]	4 lb Novin [®]	
1	16.1	16.1	16.2	0.85
2	21.4	21.6	22.2	0.05
3	27.1	27.6	28.2	0.03
4	37.0	37.8	38.4	0.07
5	45.4	46.2	46.6	0.21
6	58.1	59.4	59.7	0.13
7	61.4	62.9	63.6	0.07

Average Daily Gain, lb



F:G
Control 1.44
2 lb/T Novin[®] 1.42
4 lb/T Novin[®] 1.41
P < 0.01

DEMONSTRATED OUTCOMES

- ✓ Liver and kidney support
- ✓ Reduced oxidative stress
- ✓ Affinity for polar toxins
- ✓ Support of natural immunity and detoxifying processes



To learn more

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