

## Dietary sodium diformate and probiotic yeast improve performance of aging laying hens against positive control

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### Introduction:

Annually, the layer industry in Asia suffers from poor bird health due to contamination with pathogenic bacteria, which often results in reduced performance and increased mortality. In this respect, organic acids' proven history against Gram-negative pathogenic bacteria in feeds, showing beneficial effects on health and performance, comes into effect. Sodium diformate (NDF – traded as Formi NDF, ADDCON) has been commercially used in layer production in tropical areas since more than a decade, but its impact on layers in South Asia was not yet thoroughly investigated, especially in combination with probiotics.

### Materials and methods:

A commercial trial was performed in India to measure the impact of 0.1% dietary NDF and 0.05% probiotic yeast on performance and health in laying hens from 50 weeks of age over a period of 30 weeks. The trial ran back to back: the first 15 weeks served as positive control, with the inclusion of antibiotic growth promoters. Treatment and control groups (approx. 25,500 Lohmann laying hens) each received a commercial diet throughout the trial.

### Results and discussion:

Feed intake was highly significantly increased in birds that received the NDF-yeast diet (117 vs. 106 g/bird/day;  $P < 0.001$ ), while hen-day egg production improved over the same period (88.5 vs. 80.5% in NDF and control groups, respectively;  $P < 0.001$ ), despite the age of the birds. Hen-day production with the acidifier diet was >4% above the standard given by the Lohmann management guide given for birds of that age. Uniformity of lay was greatly improved, with a highly reduced standard deviation in the NDF-yeast fed birds. The increased laying performance resulted consequently in an improved production efficiency (feed/egg) of the NDF-yeast birds by 3.6% (from 148 g to only 142 g feed per egg). Weekly mortality was furthermore significantly lower ( $P < 0.001$ ) by almost 45% in the group fed the acidified diet.



**Table 1:** Performance parameters in laying hens fed two different diets (with or without Formi NDF) between week 50 and 80

	Positive control (AGP)	0.1% NDF + 0.05% probiotic yeast	P-level
Avg. daily feed intake [g/d]	106 ± 8	117 ± 9	0.0007
Avg. hen day production [%]	80.5 ± 4.9	88.5 ± 1.5	<0.0001
Avg. Feed / egg [g]	148 ± 2	142 ± 1	<0.0001
Avg. Weekly mortality [%]	0.69 ± 0.16	0.38 ± 0.08	<0.0001

These data show that sodium diformate (Formi NDF), in combination with yeast, can improve performance and survival rates in layers under commercial tropical conditions in India and offer a viable alternative for antibiotic growth promoters.

