

Repellant Test of Poultry Farm



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1. Testing Place: Saemangeum Poultry Farm

- 1) Address: Dongjin-myeon, Buan-gun, Jeollabuk-do,
- 2) Size of Site: 10,019m²
- 3) Numbers of Poultry Farming Chickens: More than 110,000
- 4) Pictures



<Aerial View of Saemangeum Poultry Farm>



<Front View of Saemanguem Poultry Farm>

2. Test Details

- 1) Testing Product: NWK A-FV(Poultry)
- 2) Testing Period: From July 1st 2022 to September 30th 2022
- 3) Pictures



<Inside Picture of Saemanguem Poultry Farm>



<Spraying Process>



<Spraying Process 2>



<A Hen Infected by Mites>

4) Test Process

- ① NWK A-FV was diluted with water at the ratio of 1:3 and the solution was sprayed the walls and ceilings of Saemanguem Poultry Farm.
- ② 1 liter of NWK A-FV can be sprayed on 17 to 20 square meters and total 1,000 liters of NWK A-FV was consumed for one poultry house building. (52feet X 311feet X24feet, one line has 4 layers, other line 4 layers, about 10,000 adult hen /one poultry farm building) Korea poultry house building is compacted and crowded than other countries They sprayed one /month.
- ③ After spraying the NWK A-FV, we observe the progress and checked the various factors as mortality amount, egg production numbers, Egg livability numbers for 3 months

5) Result of the Test

- ① The poultry red mite is currently one of the most hard to control during the production cycle with conventional management method. The poultry red mite reduces poultry's welfare noticeably during egg production and this may cause poorer hen egg productivity.
- ② Infested hens expand their production of new blood cells, but during periods of rapid mite population growth and louse population growth, blood loss surpasses blood production capacity causing critical anemia.
- ③ Other negative effects of poultry red mite include high mortality, abnormal behavior (higher levels of feather change, rubbing head and gentle feather pecking), lower body weight and decreased egg quality resulted from blood spots. Serious mite infestation can increase mortality, and there is a direct effect of the amount of the mite population on poultry mortality. This means lower poultry farm's economic productivity.
- ④ Red mite prefers to settle on laying hens. In egg production industries, red mite is a serious problem, not only as a potential transmitter of several bird disease germs, but more importantly as a direct parasite influencing both productivity and welfare.

Group	NWK A-FV(Poultry)	High Infection	Very High Infection
Population Numbers	Around 10,000	Around 10,000	Around 10,000
Mortality Amount	38	55	68
Egg Production Numbers	705,753	621,826	591,307
Egg Livability Numbers	621,063	478,806	402,089

* Testing Period: From July 1st 2022 to September 30th 2022

* Numbers of Total Experimental Group: Around 30,000

<Effect of Red Mite Infestation on Morality Amount, Egg Production Numbers and Egg Livability Numbers in Poultry Breeders(Cage Systems)>

- ⑤ Poultry infested by these mites may develop anemia and behavioral abnormality, such as increased feather pecking, which may result in skin inflammation. Besides, the infestation may also result in high mortality in young poultry. Mites may be a vector of pathogenic viruses and bacteria, specifically of Salmonella, indicating that its presence in poultry farms is a source of trouble.

3. Conclusion

- 1) It was shown that the mites infection can cause anemia of poultry, lowering egg production, and death of poultry which result in serious economic damage to poultry farm.
- 2) A mite can suck 204ug of blood, and if one poultry were infected by 20,000 mites, 4g of blood loss will occur a day. Because red blood cells can be reduced by 38-58% during maximum blood sucking by mites, a large number of chickens will develop anemia or die.
- 3) After spraying NWK A-FV, mites, lice, spiders, mosquitoes, mice were significantly reduced.
- 4) Stench of hens was decreased significantly.