



# Tiamutin<sup>®</sup> and Cosumix Plus<sup>®</sup> for the control of CRD and *E. coli* infections in broiler breeders

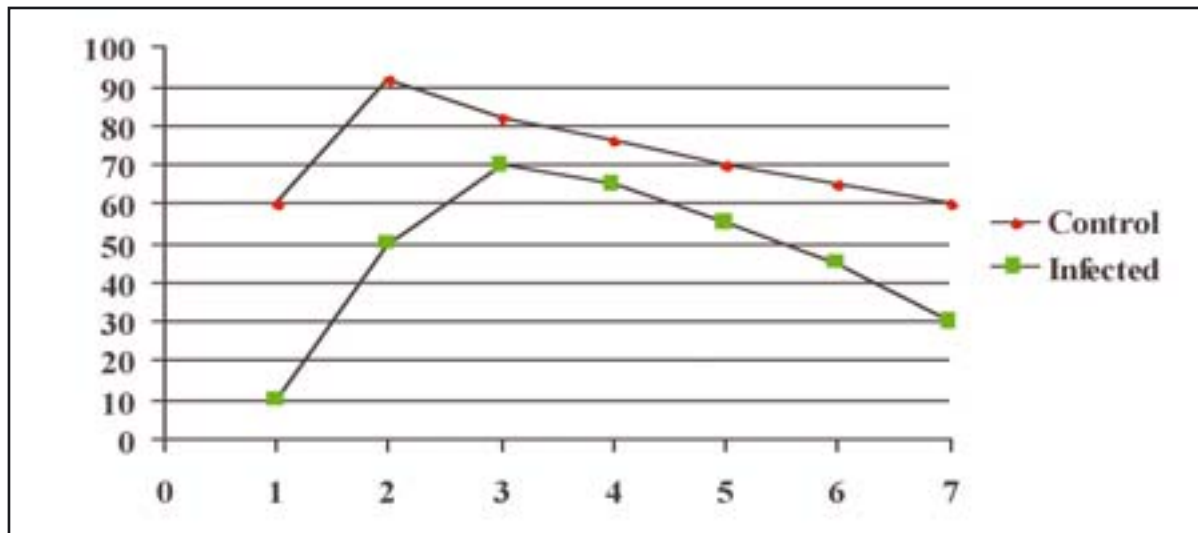
## **Introduction**

***Both Tiamutin<sup>®</sup> and Cosumix Plus<sup>®</sup> have been widely used and are well known in the market. Abundant trial work is available substantiating their benefits for farmers and veterinarians. Recently, new trial work has been carried out to evaluate the use of both products in a medication program for broiler breeders. Professor Diao Youxiang, of the Shandong Agricultural University, Jinan in China has carried out a field trial to test the efficacy of this program.***

## **CCRD in broiler breeders**

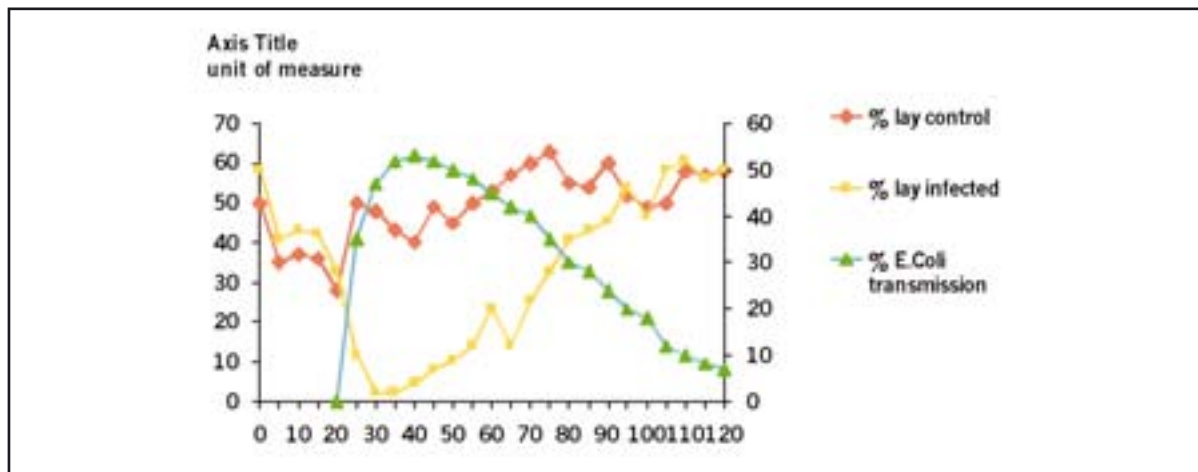
Infections of *Mycoplasma Synoviae* or *Gallisepticum* combined with *E. coli* (CCRD) frequently cause disease in broiler breeders. Especially after onset of lay, when the birds are under high metabolic stress due to the start of production, as well as stress due to transport. Mortality increases, and egg production drops. In breeders, effectiveness of treatment is far more important than costs, as costs of breeder birds as well as the hatching eggs are high. Last but not least, both *E. coli* and *Mycoplasma* are shed in the eggs. This causes mortality and further spread of the infection in the broilers, resulting in even higher economical damage.

Graph 1. Egg production of hens infected with *M. Synoviae*



Stipkovits 2002

Graph 2. Effect of *E. coli* infection on egg production and egg transmission of *E. coli* in flock infected with *M. gallisepticum*.



### Material and Methods

The treatment was carried out in a Shandong commercial broiler breeder farm. 500 birds per group of the Arbor Acres breed were treated with different treatment programs or left untreated. Tiamutin 45 % w.s. (tiamulin granulate) and Cosumix Plus (Sulphachlorpyrazine/TMP ratio 1:5) were applied in sequential pulse treatments and compared with competitive brands. The medication program started at day 1 and ended at the point of lay at 24 weeks. Medication programmes carried out were:

1. Tiamutin
  - a. 125 ppm (preventive dose) followed by Cosumix Plus 120 ppm 3 days
  - b. 250 ppm (treatment dose) followed by Cosumix Plus 120 ppm 3 days every 28 days
2. Tylosin 500 ppm 3 days every 28 days
3. Doxycycline 500 ppm 3 days every 28 days
4. Untreated controls

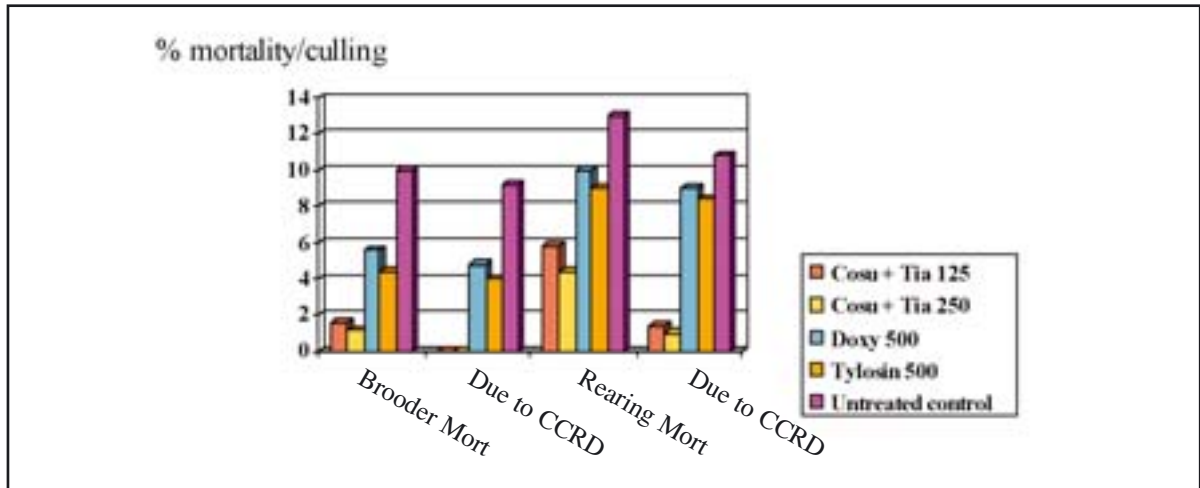
The parameters monitored were:

1. Rearing period: mortality and culling (total and due to CCRD)
2. Production (brooding) period: onset of peak, % peak, fertility and hatchability at peak, % healthy chicks at peak, average laying 25-44 weeks, % total healthy chicks/hen

## Results

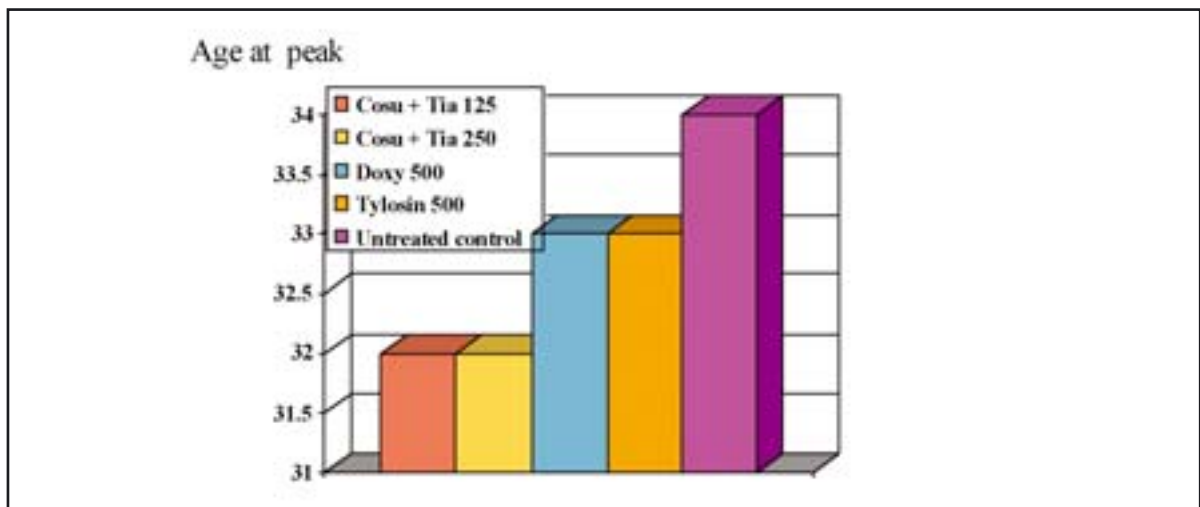
Both total mortality as well as mortality due to CCRD was lower in the Cosumix Plus/ Tiamutin treated groups in comparison with the Doxycycline and Tylosin treated and the untreated control groups. Mortality due to CCRD was even absent in the Cosumix Plus/Tiamutin treated brooder groups. Mortality in the Doxycycline and Tylosin group was 10-50 % lower than the untreated control groups, whereas mortality in the Cosumix Plus/Tiamutin groups was 50-90% lower than the control groups.

Graph 3. Mortality and culling % during brooding and rearing



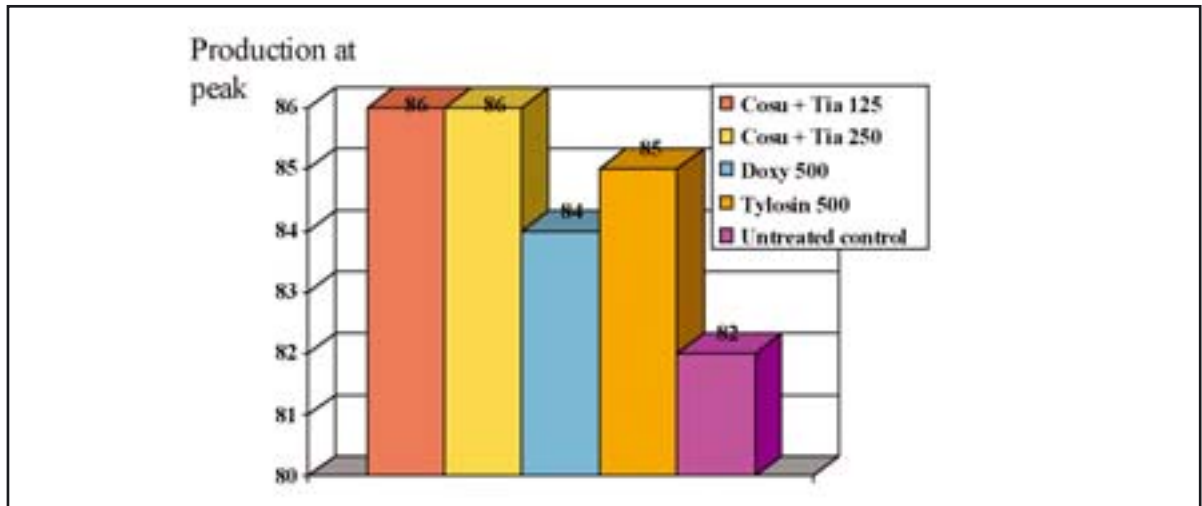
Peak production started 1 week earlier in the Cosumix Plus/Tiamutin groups than in the Doxycycline and Tylosin groups and 2 weeks earlier than in the untreated control groups.

Graph 4. Age of onset of peak production



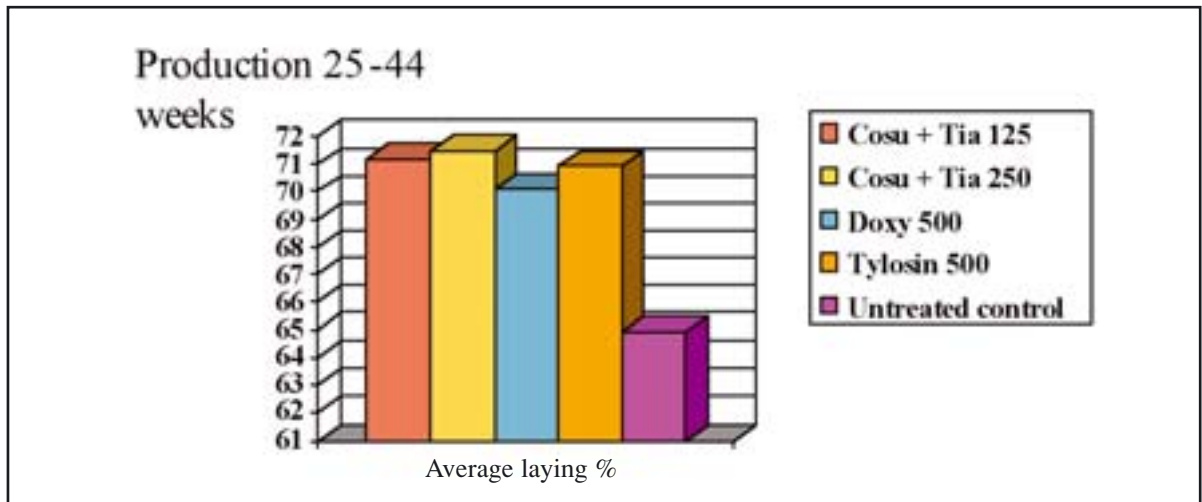
The difference in the laying performance was less marked between the treated groups. However, the difference in egg production between treated and untreated groups was clear; production was around 4 % higher egg production in the Cosumix Plus/Tiamutin treated groups.

Graph 5. Egg production % at peak



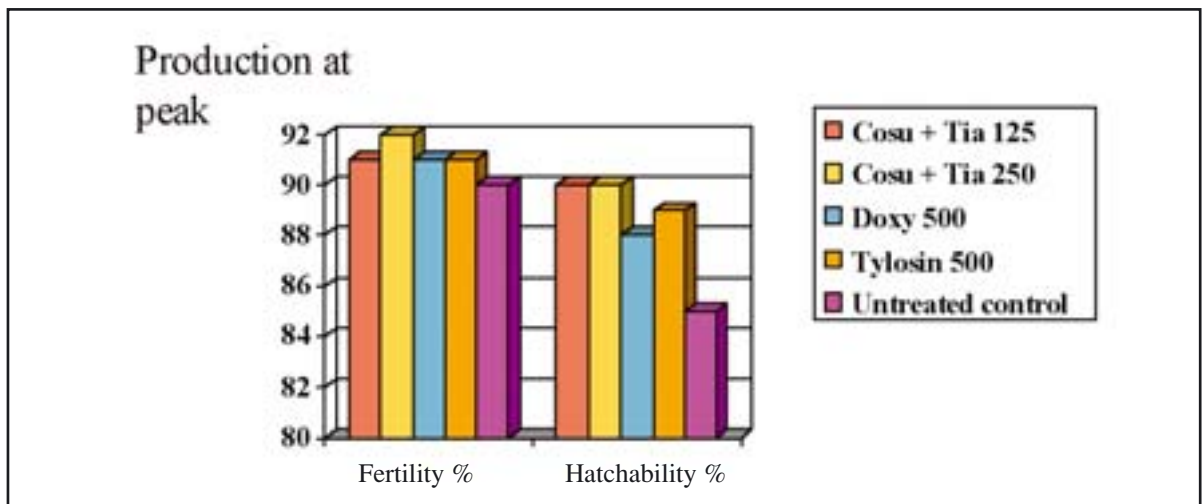
Similarly, in the production period between 25-44 weeks of age, the average egg production in the Cosumix Plus/Tiamutin treated groups was 6 % higher than that of the untreated control group.

Graph 6. Average laying % during 25-44 weeks of production



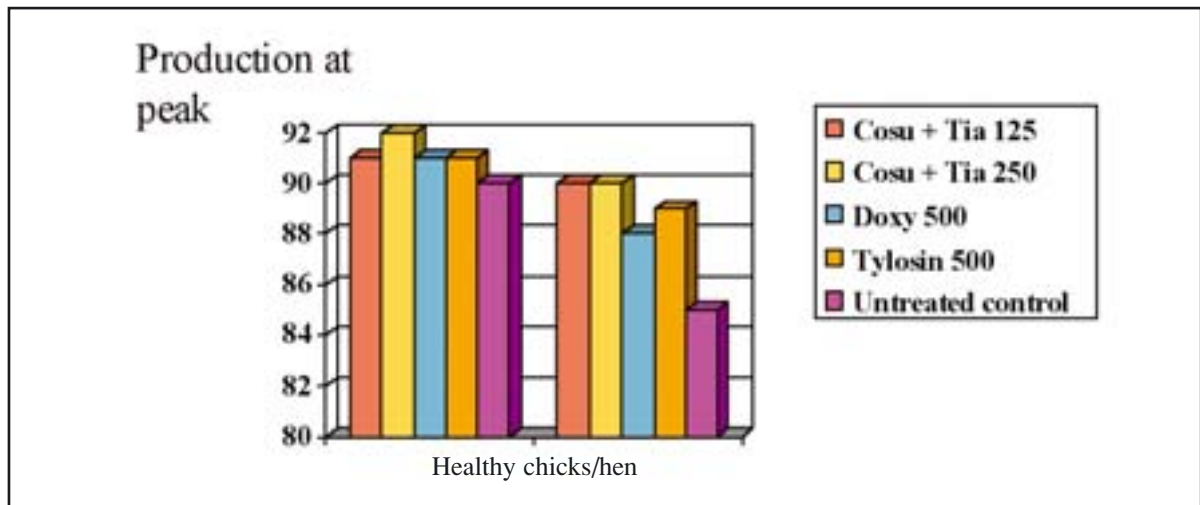
Fertility and hatchability between the treated groups were similar, but were all between 1 % and 5 % higher than the untreated control groups.

Graph 7. Fertility and hatchability % at peak



As a result, the average number of healthy saleable chicks/hen hatched from the Cosumix Plus/Tiamutin groups was 3.8-6.6 chicks more than the Doxycycline and Tylosin groups and 16.7-18 chicks more than the untreated controls.

Graph 8. Production of healthy chicks per hen



### Conclusion

Both Tiamutin and Cosumix plus are a valuable members of the Novartis Animal Health poultry range for treatment of enteric and respiratory diseases. Cosumix Plus® is the product of choice to obtain the best and quickest results against *E. coli*, and Tiamutin® is the best choice for Mycoplasma disease.

The sequential pulse treatment of Cosumix Plus® and Tiamutin® during rearing of broiler breeders provides a good control of CCRD (combined infections of Mycoplasma and *E. coli*).

This is demonstrated by the result of field trial with commercial broiler breeders:

1. Total mortality and mortality due to CCRD in Tiamutin/Cosumix Plus® treated birds is 50-70 % lower than those that are treated with Doxycycline or Tylosin and 50-90 % lower than the untreated controls.
2. Onset of egg production, peak production, production between 25-44 weeks, fertility and hatchability are improved, even after the treatment program had stopped.
3. The average number of healthy saleable chicks/hen hatched from the Cosumix Plus/Tiamutin groups was 3.8-6.6 chicks more than the Doxycycline and Tylosin groups and 16.7-18 chicks more than the untreated controls.

**Further information on the Tiamutin® (tiamulin) range of products is available from the Poultry Products Manager at Novartis Animal Health operations in over 50 countries worldwide.**