



REARING TECHNIQUES FOR AXENIC BIRDS

P. Schellenberg, J. Maillard

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strain no mutant with a *thr*⁺ *pro*⁺ *his*⁺ *Sm*^r phenotype was found. One day after the administration of the second strain, recombinants with such a phenotype appeared and their number increased up to the tenth day, at the end of the experiment. We conclude that genetic transfer between interfertile strains of enterobacteria may take place in the alimentary tract of poultry.

CHEMICAL AND AETHIOLOGICAL OBSERVATIONS ON KERATOCONJUNCTIVITIS SINUSITISES IN BIRDS

C. PAPAGEORGIOU, P. BALENCON*, H. DEBASTE*, M. BROUSTAIL**,
BOURDIOL* et J. F. GUILLOT*

*I. F. F. A. Merieux,
254, Rue Marcel-Mérieux,
69007 Lyon*

** Société Cornouaillaise agro-alimentaire,
Le Quilliou, 29143 Plogastel Saint-Germain*

*** Station Expérimentale d'Aviculture du Magneraud, I. N. R. A.,
17700 Surgères*

This preliminary study concerning keratoconjunctivitis sinusitises in birds, reveals the very important place of mycoplasma in the genesis of these diseases in chickens, turkeys, pheasants and partridges.

The association of some viruses increases the intensity of the pathological process.

The bacteria most frequently isolated from the lesions are *Escherichia coli* and *Pseudomonas aeruginosa* (10⁷ to 10⁹ bacteria per gram of tissue).

The causal agent, free of bacteria, can be cultivated in chicken embryo fibroblastes (C. E. F.) The infected C. E. F. are able to reproduce kerato-conjunctivitis sinusitis in chickens inoculated per conjunctival or intra-sinusal route or per contact.

This observation reveals that the interfering bacteria have in fact a secondary place in the aetiology of K. C. S.

REARING TECHNIQUES FOR AXENIC BIRDS

P. SCHELLENBERG et J. MAILLARD

*Station de Pathologie aviaire,
Centre de Recherches de Tours, I. N. R. A.,
Nouzilly, 37380 Monnaie*

It is absolutely necessary that the animal stock used for experimentations is as reliable as possible. With this end in view, the Avian Pathology Station (I. N. R. A.) has perfected a technique of germfree poultry production.

The breeding animals used to produce the germ-free chicken are of a White Leghorn strain, (Orthoxenic PA 12), created at our Station.

After sanitation, the eggs are hatched in protected atmosphere. On day 18 of incubation, the eggs after sterilization of the shells, are transferred into a sterile isolator. After hatching, the animals are kept in the isolator for the rest of their life. The isolators are conceived and manufactured at the Station. They are made of rigid plastic and fitted with an automatic and programmable system of conditioning, providing total working autonomy.

We produce 160 germ-free chicken twice a month (hatching rate 80 p. 100). Controls of setrili- zation effect obtained have shown that eventual contaminations are mainly due to the imper- fectly autoclaved feed (it seldom occurs, and only 1 lot out of 10 was eliminated).

SPECTINOMYCIN VERSUS SPECTINOMYCIN LINCOMYCIN COMBINATION AGAINST *MYCOPLASMA GALLISEPTICUM* IN CHICKENS

Z. ZOLLI et M. GUG*

*ABBOTT Laboratories,
North Chicago (Illinois)*

* *C. E. V. A., Besançon*

To determine whether a combination product containing spectinomycin and lincomycin was more efficacious than spectinomycin alone, experiments were conducted *in vivo* against an experimentally induced airsacculitis associated with *Mycoplasma gallisepticum* (V 248). The antibiotics were administered in the drinking water for the first three days of life of the chicks and again for a 24 hours period on the tenth day of life. On the second day of life, the desired groups of chicks were infected intrathoracically with a broth culture of *M. gallisepticum* (V 248). The experiments were terminated when the chicks reached 4 weeks of age at which time the survivors were killed, group weighed and examined for air sac lesions typically associated with *M. gallisepticum*. The various antibiotics which were administered alone or in combination were as follows :

- a) spectinomycin alone at 2 g/gal activity ;
- b) spectinomycin at 1.33 g/gal and erythromycin at 0.67 g/gal activity ;
- c) spectinomycin at 1.33 g/gal and lincomycin at 0.67 g/gal activity ;
- d) tylosin alone at 2 g/gal activity ;
- e) spectinomycin alone at 1.33 g/gal activity ;
- f) lincomycin alone at 0.67 g/gal activity.

Under the very severe experimental infection induced in this trial results indicated that the birds receiving spectinomycin alone at 2 g/gal in the drinking water showed significantly greater weight gains and significantly less severe air sac lesions than did all other medicated groups. Under the conditions of these experiments, no synergistic activity was apparent with the spectinomycin-lincomycin combination. In fact, the combination spectinomycin-lincomycin appeared only as effective as the concentration of spectinomycin which was in the combination.
