I. INTRODUCTION

Nobilis Erysipelas is an extension product designed to immunise turkeys against *Erysipelothrix rhusiopathiae*. Nobilis Erysipelas is an identical product to Porcilis Ery, a registered product for the immunisation of pigs to control against swine erysipelas. The product is indicated for use in turkeys from 6 weeks of age, and is delivered at 0.5ml by subcutaneous injection. Nobilis Erysipelas is delivered twice, the second vaccination is repeated four weeks after the first, with the second vaccination for breeder turkeys being given not later than two weeks before the onset of the laying period. The vaccine is not indicated for use during the egg laying period.

Nobilis Erysipelas is a suspension for injection containing an inactivated, lysed antigen concentrate of *E. rhusiopathiae* strain M2. The onset of immunity is 6 weeks, and the duration of immunity is at least 23 weeks. Use of the product will assist in the reduction of mortality and clinical signs of the disease.

This application was presented under the Committee for Veterinary Medicinal Products (CVMP), under a proviso designed for minor use or minor species/limited markets (MUMS). In some circumstances, with regard to the MUMS designation, there is no necessity to provide GLP supported data.

II. QUALITY ASPECTS

Product Development and Composition

Validation studies were performed on two antigen concentrates, and inactivation time for production was established at 5 days. The antigen is prepared through lysis and inactivation of cells, and then incorporated with the dl-α-tocopherol acetate adjuvant.

Results from 3 consecutive batches of antigen were analysed and found acceptable for key safety and efficacy studies.

Active Substance

Active substance

The active ingredient in Nobilis erysipelas is a cell lysate of an inactivated serotype 2 strain of *E. rhusiopathiae*. This strain has been used in the production of swine vaccines for a number of years. Nobilis Erysipelas is in the same form as the swine vaccine Porcilis Ery, the only difference is the species specific presentation. There is no monograph in the European Pharmacopoeia for this vaccine in this species. However, there is a monograph for swine erysipelas vaccines (01/2005:0064), describing a batch potency test in mice.

Other Substances

Excipients for the product are as follows: dl α-tocopheryl acetate (adjuvant), polysorbate 80, simethicone, sodium chloride, tromotamol (Tris) and water. All excipients are monographed in the European Pharmacopoeia.

Packaging Materials

The product is packaged in either an approved type I glass bottle, or a PET bottle containing 500 or 1000 doses of Nobilis Erysipelas. The bottles are closed with halogenobutyl rubber bungs, sealed with coded aluminium caps, and placed individually into cartons.

Manufacture of the Finished Product

Antigen concentrate is mixed with buffer, sodium chloride and adjuvant until a homogeneous mixture is obtained. Subsequent to pouring into Type 1 glass vials or PET vials, the product is stored at2-8^{o}C. The product is not to be frozen.

Finished Product Quality Control

Tests performed on the final product include purity and sterility tests. In addition, a sterility test monographed in the European Pharmacopoeia is also used to inactivate the antigen.

Stability of the Product

Finished Product

Shelf life of the product as packaged for sale is 2 years.

In-Use

Shelf life after first opening of the immediate packaging is 10 hours.

CONCLUSIONS ON QUALITY

The immunocompetence of the target species may be compromised by poor health, genetic factors, nutritional status, concurrent drug therapy and stress. Immunogenicity of the vaccine is reduced by wrongful storage or by inappropriate vaccination.

III. SAFETY ASPECTS

Introduction

This application for a vaccine against erysipelas in turkeys with this antigen is the first of its kind for this species. Other poultry vaccines use different inactivated antigens.

Unhealthy birds must not be vaccinated, and good immune response is reliant on a fully competent immune system.

Laboratory Tests

A laboratory test was performed to analyse the following: safety of administration of one dose, safety of administration of an overdose and safety of repeated administration of one dose.

40 6 week old commercial broiler turkeys were randomly allocated to 2 groups. The first group of birds were inoculated subcutaneously with 0.5ml of Nobilis Erysipelas, and the second group of birds with 1ml of product. The first group of birds was subsequently inoculated 28 days later

with an additional 0.5ml of Nobilis Erysipelas. Clinical observations were made daily, and all birds were inspected post-mortem for reactions at the site of injection. No local or systemic reactions were observed after vaccination and no abnormalities were noted post-mortem.

No field studies were required as this application was covered by the MUMS (minor use or minor species/limited markets) guideline as stipulated by CMDV. Laboratory trials were undertaken, but there was no requirement for field trials.

CONCLUSIONS ON SAFETY AND RESIDUES

Conclusions on User Safety

No special precautions for user safety.

Conclusions on Consumer Safety

The product has a zero days withdrawal period.

Conclusions on Environmental Safety

Any unused veterinary medicinal product or waste materials derived from such veterinary product should be disposed of in accordance with the local requirements.

IV. EFFICACY ASPECTS

Laboratory Tests

A study was performed in order to analyse the efficacy of the product in turkeys, using a formulation very similar to Nobilis Erysipelas. 30 commercially obtained broiler turkeys, not vaccinated against erysipelas, were placed into 3 groups. At five weeks of age, one group was vaccinated subcutaneously at day 0 with 0.5ml of vaccine, and then again at day 28, at 9 weeks of age. The second group was vaccinated at day 14 only, at 7 weeks of age. The negative control group received no innoculum. All animals were challenged with *E.rhusiopathiae* strain VS (type 1), at 11 weeks of age, and three days post-challenge, birds were sacrificed and the liver analysed for re-isolation of the challenge strain.

All birds in the vaccinated groups were protected against disease, and more than half of the negative control birds died. Results of reisolation, see above?

A second study analysed the duration of immunity conferred by the product. 120 commercially obtained broiler turkeys, not vaccinated against erysipelas, were allocated into 3 groups of 40 birds each. The first group of birds was vaccinated at day 0, at 6 weeks of age, and then again at day 28, at 10 weeks of age. The second group of birds was vaccinated at day 28 only, at 10 weeks of age. The negative control group was not vaccinated. All birds were challenged with *E. rhusiopathiae* strain VS (type 1). Mortality was observed for 3 days post-challenge, and the livers of all birds were analysed post-mortem for re-isolation of the challenge strain. The results showed that a remarkable degree of protection was conferred on both vaccinated groups of birds.

No field studies were required as this application was covered by the MUMS guideline as stipulated by CMDV. Laboratory trials were undertaken, but there was no requirement for field trials.

CONCLUSIONS ON EFFICACY ASPECTS

Nobilis Erysipelas was efficacious in bestowing a measure of protection against *E. rhusiopathiae.*

PART V. OVERALL CONCLUSION ON THE PRODUCT

The data submitted in the dossier demonstrate that when the product is used in accordance with the Summary of Product Characteristics, the benefit/risk profile for the target species is favourable and the quality and safety of the product for humans and the environment is acceptable.

POST-AUTHORISATION ASSESSMENTS

The SPC and package leaflet may be updated to include new information on the quality, safety and efficacy of the veterinary medicinal product. The current SPC is available on the Product Information Database of the Veterinary Medicines Directorate website.

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The post-authorisation assessment (PAA) contains information on significant changes which have been made after the original procedure which are important for the quality, safety or efficacy of the product.

The PAA for this product is available on the Product Information Database of the Veterinary Medicines Directorate website.

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