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Cover Page Footnote
Mr. Ron Vagg, Poultry Instructor, Poultry Branch and the staff of the Poultry Research Station for their assistance during the trial. Mr. R. Miles, Radio Hatchery and Mr. A. Hampton who donated the chickens used in the experiment. The Biological Institute of Australasia Pty. Ltd., who donated the fowl pox vaccine.
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DAY-OLD FOWL POX VACCINATION

A new day-old fowl pox vaccine now on the market has many advantages over the normal vaccine, which is used at about 12 weeks old.

In tests at the Poultry Research Station it gave satisfactory results.

By P. SMETANA (B.Sc. Agric.), Acting Officer in Charge, Poultry Branch

For many years the standard procedure for fowl pox prevention on West Australian poultry farms has been to vaccinate young stock at 12 weeks of age. Although most farmers have used this system successfully it has a number of weaknesses which can be overcome by day-old vaccination.

A new fully potent fowl pox vaccine specially prepared for day-old vaccination became available last year, and in June, 1961, an experiment was carried out at the Department of Agriculture's Poultry Research Station, Wembley, to test the new vaccine under local conditions. Results of the test are reported below.

There have been several recorded cases of fowl pox outbreaks on stock considerably younger than 12 weeks, and some flocks have been severely affected at six weeks. Pigeon pox vaccine can be used in young chicks but this gives only temporary immunity and is not as effective as a fully potent vaccine.

Advantages of Day-old Vaccination

All day old chicks are normally handled at least once by the time they are placed under brooders; at this age are very easy to handle, which enables greater speed of vaccination. A second handling for vaccination at about 12 weeks involves some degree of stress, as does any procedure where all birds in a flock have to be caught and individually handled. Besides the elimination of as much stress as possible—an essential factor in disease prevention—labour saved by reduced handling is also important.

During the past few years the leucosis disease complex has taken a heavy toll of young pullets on many farms. Often the first symptoms of this disease appear at the time when vaccination is usually carried out, in which case it may not be advisable to subject the flock to the stress of vaccination for fear of aggravating the condition. Vaccination is therefore postponed, sometimes indefinitely, with the result that fowl pox appears in the meantime. On some farms vaccination is delayed until the birds are approaching maturity, in which case harmful results can be experienced.

1.—Method of picking up the day old chicken. Note position of hand

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The time of vaccination with ordinary vaccines is fairly critical and it should be carried out as close to 12 weeks as possible. A flock should never be vaccinated unless it is in good health and condition.

During 1961 there were a number of cases of a condition, referred to as "post-vaccinal reaction" for want of a better name. The exact nature of this condition is not clear but in many cases there is a similarity to the symptoms of a disease known as blackhead. This is particularly so in flocks which were not dewormed before vaccination.

Several farmers experienced substantial losses from this cause. Although the disease could not be accurately defined, spectacular results were obtained with a special method of treatment which involved the use of a water-soluble broad spectrum antibiotic in the water in conjunction with furazolidone in the feed. In every case deaths stopped almost immediately after this treatment began, independent of the stage at which treatment started.

Post vaccinal reaction was responsible for losses in widely separated areas, and the age incidence varied from place to place, but the common feature in all outbreaks was that deaths started about two weeks after fowl pox vaccination.

**Experimental Procedure**

In this trial 90 day-old first cross chickens from two sources were used. The chicks were divided into two groups of 45 each, weighed, and one group was toe-marked.

Before being placed under the brooder, one group was vaccinated with a single stab needle through the web of the leg, the tissue where the thigh is connected to the body. If the chick is held in a head-down position and one leg is pulled away from the body, then the fold of skin through which the needle is pushed will appear. Care should be taken to avoid stabbing the flesh of the leg.

It is estimated that a skilled operator can vaccinate between 800 to 1,000 chicks in an hour.

Vaccination with this day-old type vaccine can be done at any time during the first few days but it is usually recommended to vaccinate when the chicks are ready to be placed under the brooder. A special needle which is supplied upon request with the vaccine is ideal for the purpose.

The two groups of birds were brooded separately under charcoal brooders. They were closely observed for six weeks, during which body weight gains were measured at weekly intervals and mortality recorded. At the end of six weeks there was no difference in weight between the two groups; in fact the weight gains were almost identical. No obvious harmful reaction was observed at any time in the group vaccinated at day old. The difference in mortality was not significant and the deaths in the vaccinated group could not be attributed to the treatment. Generally both groups were most satisfactory at the end of the six-week period.

### Comparison of Treated and Untreated Chicks

<table>
<thead>
<tr>
<th>Age</th>
<th>Control Average per Bird</th>
<th>Vaccinated Average per Bird</th>
<th>Difference</th>
<th>Control Mortality</th>
<th>Vaccinated Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day old</td>
<td>1-24 oz</td>
<td>1-30 oz</td>
<td>3-1</td>
<td>6-7</td>
<td>6-7</td>
</tr>
<tr>
<td>2 weeks</td>
<td>3-36 oz</td>
<td>3-20 oz</td>
<td>1-9</td>
<td>6-7</td>
<td>6-7</td>
</tr>
<tr>
<td>3 weeks</td>
<td>5-06 oz</td>
<td>4-94 oz</td>
<td>1-2</td>
<td>6-7</td>
<td>6-7</td>
</tr>
<tr>
<td>4 weeks</td>
<td>5-52 oz</td>
<td>6-30 oz</td>
<td>3-1</td>
<td>6-7</td>
<td>6-7</td>
</tr>
<tr>
<td>5 weeks</td>
<td>9-10 oz</td>
<td>7-86 oz</td>
<td>3-1</td>
<td>6-7</td>
<td>6-7</td>
</tr>
<tr>
<td>6 weeks</td>
<td>13-93 oz</td>
<td>13-60 oz</td>
<td>3-1</td>
<td>6-7</td>
<td>6-7</td>
</tr>
</tbody>
</table>
An examination for "takes" revealed that a scab formation at the site of vaccination was present in every bird, indicating 100 per cent. efficiency of vaccination. A proportion of the vaccinated group was retained in order to verify the manufacturer's claim of lifelong immunity. At about 15 weeks of age the birds were challenged and were found to be still immune at this age.

Some of the vaccinated stock were placed with another flock from six to 14 weeks, in which fowl pox was rife, but the disease was not contacted by any of the test birds.

Since the results of this experiment have been known, a number of commercial farmers have successfully used the day-old vaccination method. In one case severe losses were incurred in chicks where the adult vaccine was used at day old.

It is most important that only the vaccine specially prepared for day old vaccination is used.

Precautions

In this State most batches of day old chicks are relatively free from disease for the first few days, but where any signs of weakness or disease are noticeable in day old stock then it is not advisable to vaccinate at this stage. The same precaution applies to vaccination at 12 weeks in regard to the presence of disease symptoms.

Although the normal systemic reaction to fowl pox has not adversely affected any young chicks so far, if some growth depression is experienced then one of the antibiotics can be fed from the 10th to 20th days after vaccination.

From the results of this experiment and experience in the field, it appears that the special day old vaccine now available in this State is satisfactory for use in the prevention of fowl pox. Because of the advantages already outlined it is recommended for this purpose.

ACKNOWLEDGMENTS

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