

## Prerequisites for vaccinating pullets in cage-free systems: post-vaccination reactions

### Problem

Due to the high amount of vaccines given during the pullet phase, post-vaccination reactions can be expected. If hens are given outdoor access, risks of infections are higher, and more vaccines are often necessary.

### Solution

Carefully schedule and balance the vaccination program. There should be at least 2 weeks between two vaccinations targeting the same organ. Furthermore, the program can contain additional inactivated vaccines for hens with outdoor access. These vaccines have a greater chance to cause post-vaccination reactions due to the adjuvants that are included.

### Benefits

Maximizing vaccination protection with a minimum of post-vaccination reactions.

### Practical recommendations

1. Vaccines need to be applied according to the manufacturer's guidelines to prevent post-vaccination reactions and reach a maximum immunological effect.
2. After vaccination, possible adverse side-effects should be checked by examining the flock and individual birds. The time-interval after vaccination depends on the type of vaccine and its application method.

### APPLICABILITY BOX

#### Theme

Animal husbandry

#### Keywords

Animal health and welfare, Vaccinations, Post-vaccination reaction, rearing phase

#### Context

Transition to and operating cage-free housing systems for pullets

#### Application time

Year-round

#### Period of impact

Pullet phase

#### Equipment

Vaccination equipment

#### Best in

All cage-free housing systems: barn, free-range and organic production

#### Target audience

Farmers, farm advisors



**Figure 1: A – Spray Birchmeyer. B – Vaccines applied by spray or eye-drop target the respiratory tract and spread through the flock. C – Injectable vaccines provide individual protection and do not spread through the flock. (Source: Roland Bronneberg)**

## On-farm application

### System approach

- Vaccination programs for pullets in cage-free housing systems contain several basic live and inactivated vaccines. Additionally, depending on the country, housing system (free-range: yes or no) and the disease history on the farm (and region), the program can be adapted (read: tailor-made). In practice, this means that more vaccination is added instead of being removed. More vaccines equal more stress for the hen and her immune system. To reduce the impact of these vaccinations, the programs need to be set up by a specialist.
- The flock should be visited: during vaccination to check proper vaccine application, and 5-7 days after vaccination, to evaluate possible adverse post-vaccination reactions through inspection and for checking vaccine efficacy by sample taking.
- Post-vaccination reactions can be evaluated both qualitatively (inspection) and quantitatively, although the latter is more difficult due to the lack of a uniform and objective scoring system.

## Further information

### Further readings

J.J. (Sjaak) de Wit and Enrique Montiel (2022). Practical aspects of poultry vaccination. In: Avian Immunology 2022, Pages 469-488. ISBN 978-0-12-818708-1.

### Weblinks

<https://www.thepoultrysite.com/articles/pullet-vaccination-theres-always-room-for-improvement-2>

<https://www.poultryworld.net/home/vaccine-reactions-in-poultry-flocks/>

## About this practice abstract and Best Practice Hens

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**Best Practice Hens:** To support egg production in non-cage systems and improve animal welfare, a consortium consisting of 7 partners will develop Best Practices for Non-cage Egg Production Systems as a European Commission, DG SANTE pilot project. These Best Practices will provide practical support to egg producers to encourage them to convert from cage to non-cage systems, including organic production.

Project website: [www.bestpracticehens.eu/](http://www.bestpracticehens.eu/)

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