

# Study of the preening habits of one-day old broiler chicks to establish the components of the colouring agent for the spray application of the vaccine HIPRACOX®

Pagès<sup>1</sup>, M.; Dardi\*<sup>1</sup>, M.

\*Corresponding author ([martina.dardi@hipra.com](mailto:martina.dardi@hipra.com))

<sup>1</sup>HIPRA, Amer (Girona), Spain.



---

The Reference  
in Prevention  
for Animal Health

---

# Introduction

- Coarse spray is intended for the oral administration of vaccines at the hatchery. For consistent vaccination, the active ingestion of vaccine water droplets by birds is crucial.
- It has been proven by Caldwell et al. (1999, 2001) that including colouring agents to the vaccine solution has a marked effect inducing a higher preening activity and thus increasing the ingestion of spray-applied vaccines.
- Unfortunately, in most hatcheries light intensity conditions are very poor.
- It is interesting to mention that Burne et al. (1996) demonstrated that birds can respond to odorants and that, at first, they use visual stimulus and then they may use an odour stimulus.

# Materials and method

- The method and materials used are similar to the ones described by Caldwell *et al* 2001. The parameter studied was as in the article the preening events (counts of pecking events).
- We understand by preening events:
  - a) The pecking of one of the birds to the droplets on another bird.
  - b) The pecking of one bird to the droplets in his own feathers (self-preening).
  - c) Pecking of the droplets on the floor or on the sides of the hatchery cage.

# Results

## 1. Confirmation of the peak preferences at blue-violet (Light intensity = 200 lux).

Number of repetitions	Colour of the solution studied				
	Blue	Green	Red	Pale Violet	Strong violet
From 2 to 4	$8.5 \pm 3.54$ <sub>b</sub> *	$6 \pm 2.83$ <sub>b</sub>	$4.5 \pm 2.12$ <sub>b</sub>	$48.75 \pm 23.20$ <sub>a</sub>	$34 \pm 22.63$ <sub>a</sub>

\* Mean number of preening events  $\pm$  standard deviation.

Values within the same superscript <sub>a</sub> and <sub>b</sub> do NOT have statistical differences.

## 2. Confirmation of differences in preening habits when vanillin is present in the formula (Light intensities = 80 lux).

Number of repetitions	Colouring agents		Controls	
	Pale Violet	Pale Violet + vanillin	Tap water	PBS 7.4
5	$69.2 \pm 10.80$ <sub>a</sub> *	$74 \pm 8.15$ <sub>a</sub>	$8.6 \pm 5.13$ <sub>c</sub>	$23.6 \pm 8.50$ <sub>b</sub>

\* Mean number of preening events  $\pm$  standard deviation.

Values within the same superscript <sub>a</sub>, <sub>b</sub> and <sub>c</sub> do NOT have statistical differences.

# Conclusion/ Discussion

- **The addition of the colouring agent pale violet in the sprayed solution has proven to increase the preening events** and thus, to enhance the ingestion of spray-applied vaccines.
- **The addition of a vanillin aroma has demonstrated to significantly increase the preening events** when spray application is done **under poor light intensity conditions.**
- The components selected to be included in the colouring agent to administer the vaccine HIPRACOX<sup>®</sup> via spray enhance the spray-applied vaccine ingestion in conditions of either normal or poor light intensities.

