Egg drop and egg deformation

Impact of aMPV and vaccine efficacy

Laying performances

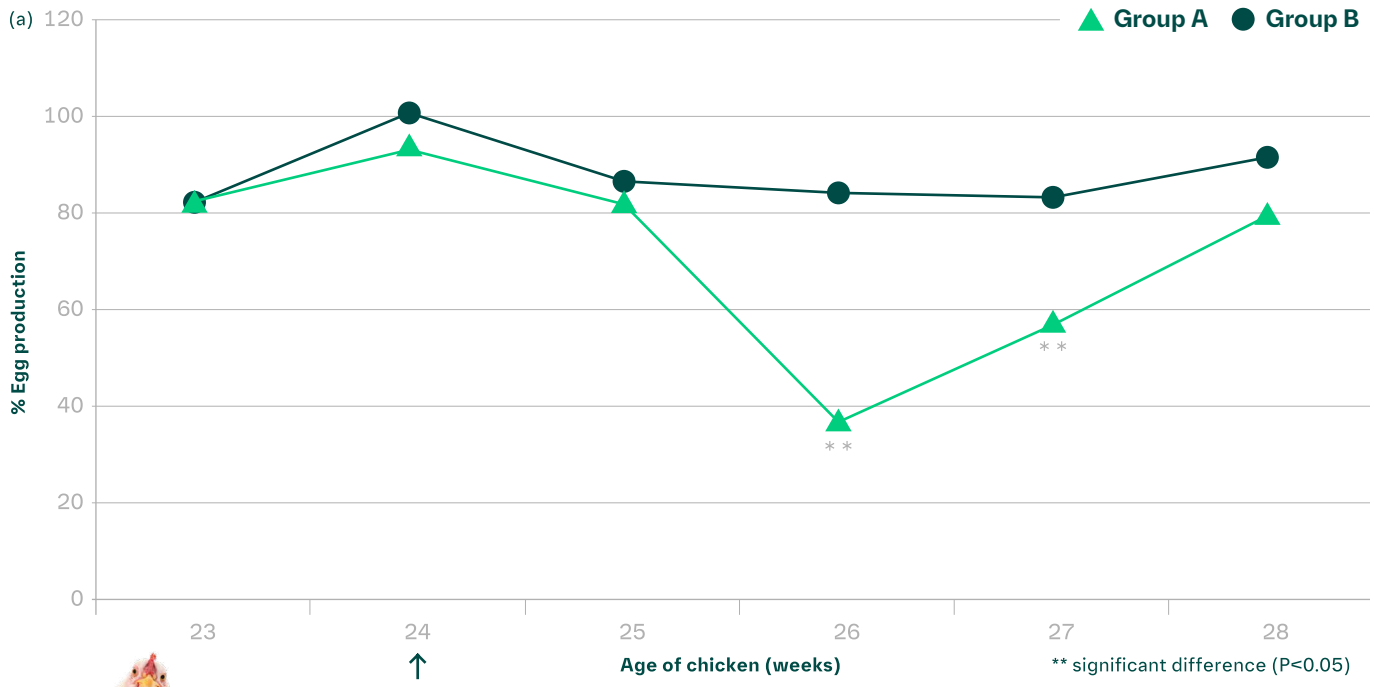
The avian Metapneumovirus (aMPV), has been reported in turkeys and chickens in most parts of the world.

The virus is implicated not only in swollen head syndrome but also in drops in egg production and quality.

A laboratory study investigated the impact of Metapneumovirus (aMPV) on egg drop and egg deformation in laying hens [1].

At 24 weeks of age, a group of White Leghorn SPF hens (group A) was inoculated intravenously (IV) with aMPV strain PLE8TI, isolated from broiler chickens affected with swollen head syndrome. Group B (control group) received an equivalent volume of saline.

Graph showing the impact of aMPV on egg production (group A) compared with controls (group B)[1].



Egg production in group A dropped to 36% by 2 weeks post inoculation (p.i.) and then gradually recovered. It remained significantly lower than that of the negative control group during 2 and 3 weeks post-infection [a].

[1] *Sugiyama M. et al., 2006, J. Med. Sci., 68, 783-787*

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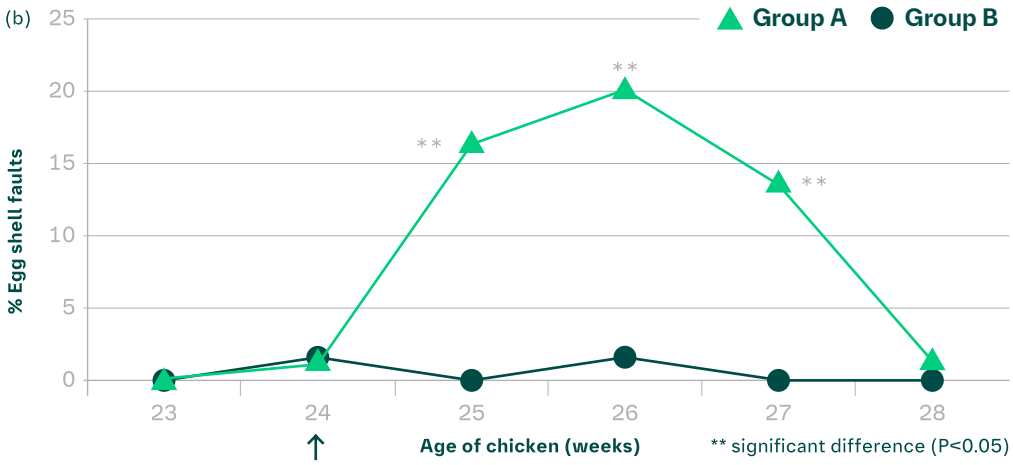
Graph showing the impact of aMPV on egg shell faults (group A) compared with controls (group B)[1].



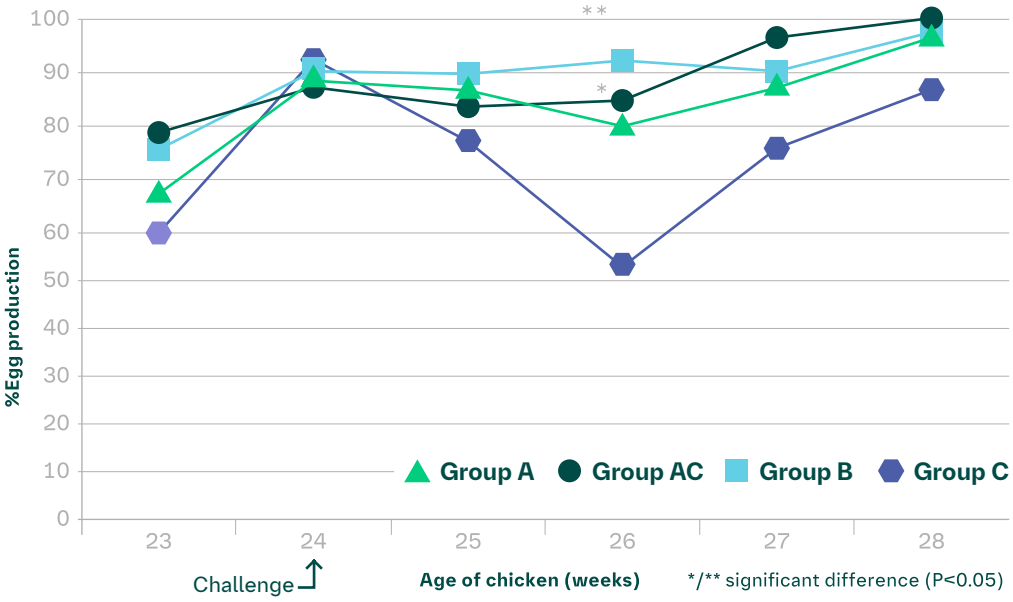
Abnormal eggs observed in group A were malformation of egg shells, including soft or thin shells. These abnormal eggs were laid predominantly before the drop in egg production and during the convalescent phase[b].

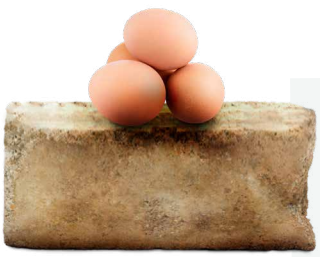
The aMPV strain was found to have a major impact on egg production and malformation. The same study also evaluated the efficacy of aMPV vaccines against aMPV infection in laying hens, using the PLE8TI strain as a challenge virus. White leghorn SPF layers received a live attenuated aMPV vaccine at 7 or 77 days of age and an inactivated aMPV vaccine at 105 days old. All groups (except one) were challenged IV with aMPV strain PLE8TI at 168 days of age[1].

Group	NEMOVAC® (7d)	NEMOVAC® (77d)	Inactivated aMPV vaccine (105d)	aMPV Challenge (168d)
A	+		+	+
AC	+		+	
B		+	+	+
C				+

Egg production before and after challenge with aMPV[1].

(significant differences between groups AC, B and C.)





Groups A and B showed a high serological response prior to challenge and protected the birds from a drop in egg production. This suggests that aMPV vaccines have efficacy not only against respiratory symptoms but also against egg drop caused by aMPV.

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