

## Edible Gel for vaccines, probiotics and nutrients

Edible gel drops containing vaccine, probiotic and nutrients is now the fastest-growing advance for poultry gut health, either in the hatchery before transport or on arrival to farms. Gel-Pac<sup>®1</sup> is a stabilizing, powdered gel you add to local tap water, then mix in your live vaccine, probiotic or supplement and spray for chicks to eat. Chicks immediately consume the soft gel drops, consuming more vaccine than chicks vaccinated by water spray (Table 1) and earlier than chicks vaccinated by feed spray.

Hatcheries and farms also use Gel-Pac to combine respiratory and *Salmonella* vaccines with coccidiosis vaccine (Graphs 1 and 2), all conveniently mixed in one single spray solution. Gel-Pac is stabilized to preserve all live vaccines, including Bronchitis, Newcastle, and *Salmonella*, as well as probiotic bacteria against water quality issues or harsh coccidiosis oxidizers. Chicks immediately receive protection targeted for the gut and respiratory tissues, promoting intestinal health while at the same time increasing respiratory defenses.

## **COCCIDIOSIS PROTECTION**

Table 1 Gel improves coccidiosis vaccination

Application	Vaccine Counts	Vaccine Uniformity
Gel Beads	3687*	97%
Aerosol Spray	63	87%

Vaccinated day 1 and counted days 5-8. Gel increased vaccine dosage (OPG, \* p<.05) and uniformity (Jenkins et al., 2012).

## **RESPIRATORY PROTECTION**



Respiratory and enteric vaccines in Gel-Pac deliver abundant antigen to mucosal tissues. The gel pictured was initially consumed, later seen spreading out from nares and oropharynx upon dissection. Hatchery managers can efficiently increase the number of vaccines they spray in one pass, and simply use their local tap water for the application. Stabilized Gel-Pac protects against harmful water elements.

Spraying Salmonella vaccine and probiotics on day 1 in Gel-Pac supports modern food safety goals. These protections reduce salmonellosis in poultry and decrease vertical transmission of Salmonella to meat and eggs for humans. Salmonella vaccine and competitive exclusion bacteria manufacturers have researched Gel-Pac and demonstrated better vaccine stability and stronger Salmonella prevention.

Graph 2 shows a *Salmonella* vaccine's significant deterioration over time when sprayed in water or with coccidiosis vaccine. The vaccine potency reduction was completely prevented by Gel-Pac's stabilizing properties. Safely combining the 2 vaccines in 1 solution offers hatcheries great potential for efficiently protecting the gut with a single Gel spray. Consuming the edible gel puts the vaccines directly to the gut, where they both begin their protective work.

Gel-Pac is a logically appropriate route for beneficial bacteria to colonize the gut on day 1, before young birds leave the hatchery or consume environmental bacteria. Competitive exclusion probiotics in Gel-Pac can fully reduce infective *Salmonella*. Chicks protected by Gel-Pac and probiotics had -4.6 log fewer pathogenic *Salmonella* per gram of cecal contents (>99.99% reduction), shown in Graph 3. Protection begins before the bird arrives at the farm.

Gel-Pac powdered gel concentrate lets hatcheries efficiently prepare their own gel sprays from local tap water, then add and combine any variety of orally active products in a single application, improving life-long bird health from the earliest possible intervention on the day of hatch.



**Graph 1.** Gel-Pac preserves IB vaccine titer against harsh coccidiosis vaccine spray.

## **SALMONELLA PROTECTION** 160% 140% Percent of initial control titer %00 mittial control titer %00 mittial control titer %00 mittial control titer %00 mittial control titer +2.7% per h -4.5% per ho -11.2% per 2.0 4.0 5.0 1.0 3.0 Hours in solution O Water control Coccidiosis vaccine △ Coccidiosis vaccine & Gel-Pac

**Graph 2.** *Salmonella* vaccine titers increase in Gel-Pac compared to water spray or when combined with coccidiosis spray.



**Graph 3.** Probiotic sprayed in Gel-Pac at hatch protected chicks from a day 2 *Salmonella* infection. Improvement was -4.6 log (-99.99%) less *Salmonella* than control chicks.

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Gel-Pac\* is a trademark of Animal Science Products, Inc. Nacogdoches, Texas. asp-inc.com Edible gel concentrate for delivering vaccines and oral additives using poultry hatchery tap water

