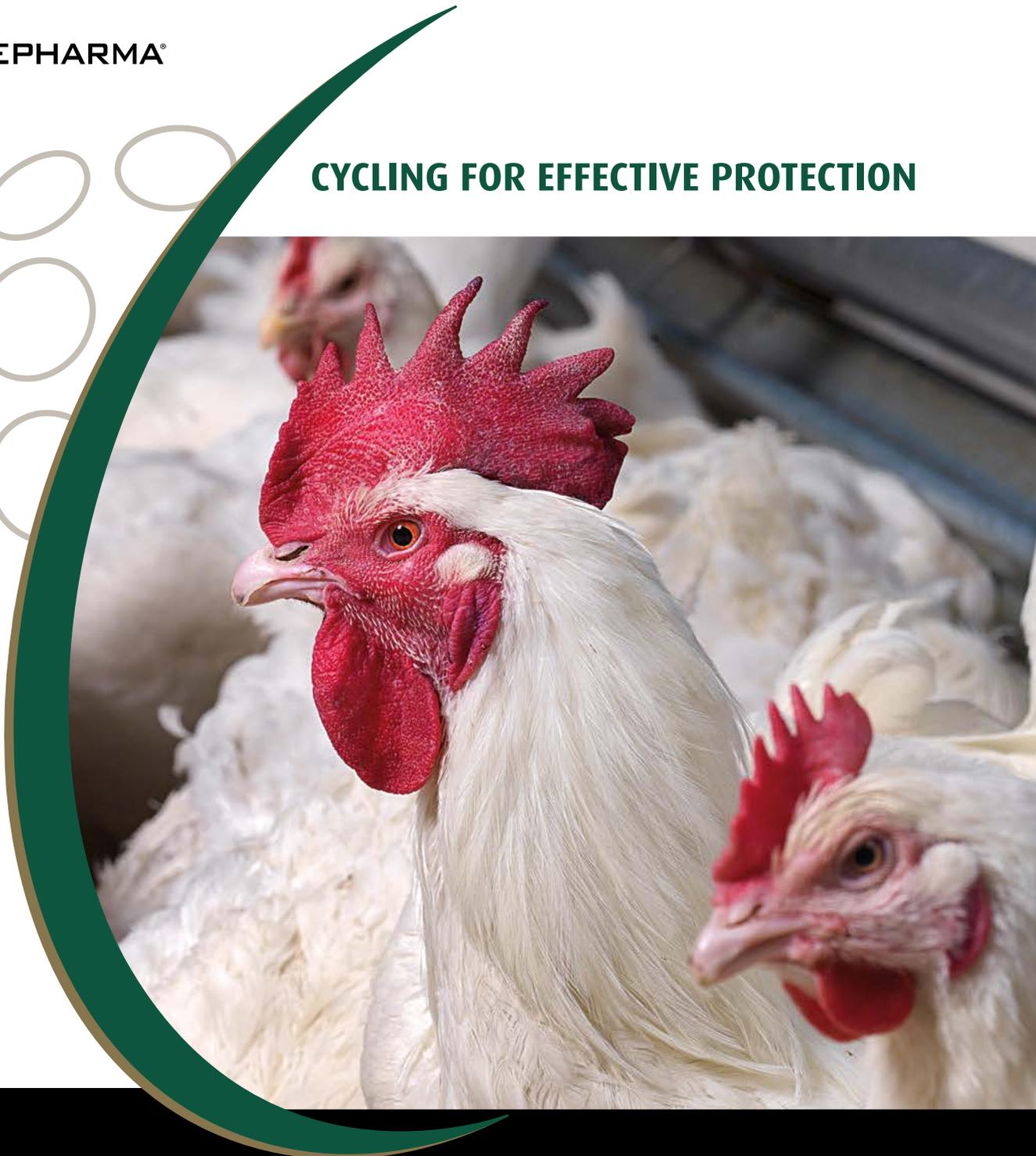


CYCLING FOR EFFECTIVE PROTECTION



HuveGuard® MMAT

suspension for oral suspension for chickens

HuveGuard® NB

suspension for oral suspension for chickens



HuveGuard®

the unique coccidiosis vaccine range from Huvepharma

The HUVEGUARD® vaccine range offers the most complete coccidiosis protection available for broilers, breeders and layer chickens, providing active immunization against all of the economically important *Eimeria* species: *E. acervulina*, *E. maxima*, *E. mitis*, *E. tenella*, *E. brunetti* and *E. necatrix*.

HuveGuard® MMAT				HuveGuard® NB		
<p><i>Eimeria maxima</i> L: 21.5-42.5 µm W: 16.5-29.8 µm 10 µm</p>	<p><i>Eimeria mitis</i> L: 11.7-18.7 µm W: 11.0-18.0 µm 10 µm</p>	<p><i>Eimeria acervulina</i> L: 17.7-20.2 µm W: 13.7-16.3 µm 10 µm</p>	<p><i>Eimeria tenella</i> L: 19.5-26.0 µm W: 16.5-22.8 µm 10 µm</p>	<p><i>Eimeria praecox</i> L: 19.8-24.7 µm W: 15.7-19.8 µm 10 µm</p>	<p><i>Eimeria necatrix</i> L: 13.2-22.7 µm W: 11.3-18.3 µm 10 µm</p>	<p><i>Eimeria brunetti</i> L: 20.7-30.3 µm W: 18.1-24.2 µm 10 µm</p>
Important for broilers/breeders/layers/long living broilers				Considered as non pathogenic	Important for long living broilers/ breeders/ layers	

HuveGuard® MMAT

- Contains the species *Eimeria maxima*, *Eimeria mitis*, *Eimeria acervulina* and *Eimeria tenella*
- Application from day 1 (spray on birds, spray on feed) or from day 3 in the drinking water
- Solid development of immunity in chickens (broilers, breeders, layers, long living broilers) with high oocyst output but low lesions after application

HuveGuard® NB

- Contains the species *Eimeria necatrix* and *Eimeria brunetti*
- Application through drinking water from 14 days of age
- Solid protection from the pathogenic coccidiosis species for longer living birds (breeders, layers, long living broilers)



BROILERS

HuveGuard® MMAT



BREEDERS

layers
long living broilers

HuveGuard® MMAT

HuveGuard® NB

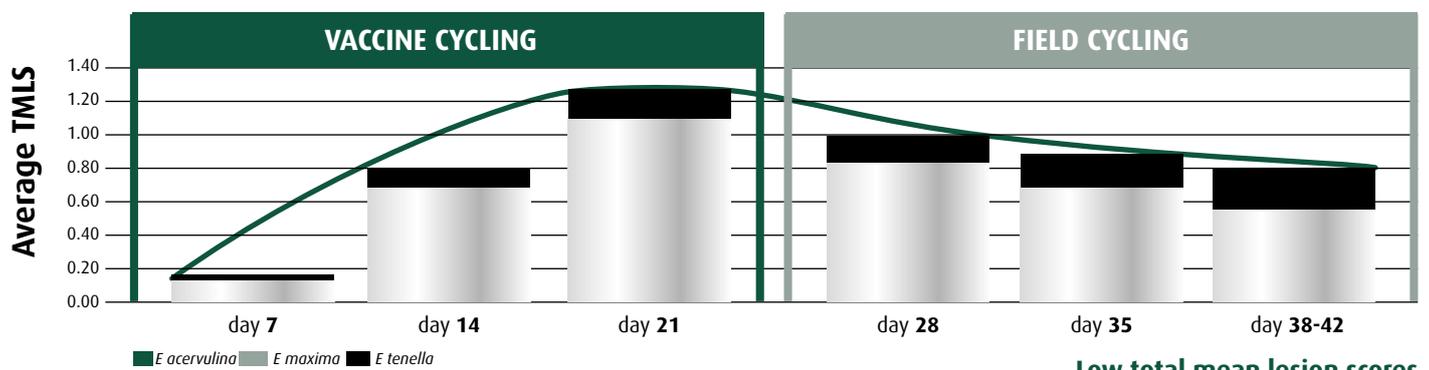
The vaccines consist of **live precocious coccidiosis** strains that have been selected for their high immunogenic potential and low pathogenicity (low potential for causing lesions). The efficacy, as well as the safety of the vaccine range, has been evaluated in field conditions.

CYCLING FOR EFFECTIVE PROTECTION



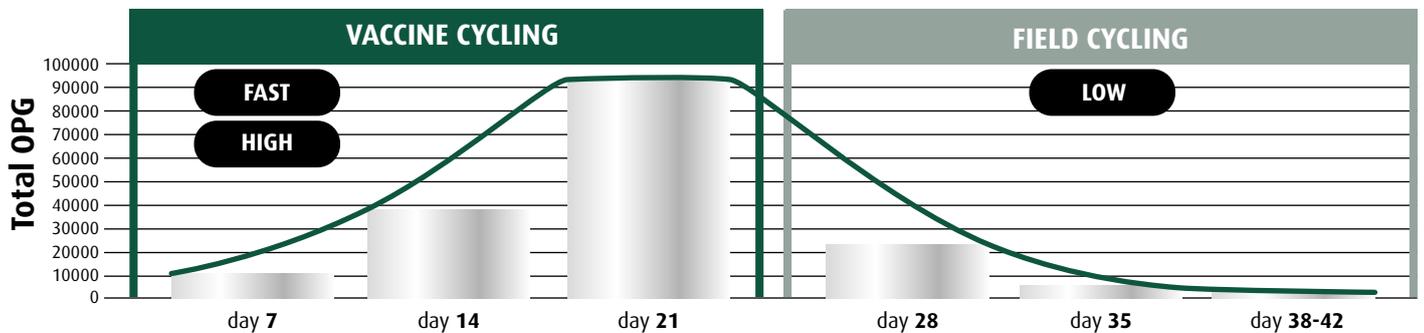
BROILERS

Well-monitored trials have been performed with HuveGuard® MMAT (*E. maxima*, *E. mitis*, *E. acervulina* and *E. tenella*) in 11 different European commercial broiler farms. Birds were vaccinated with HuveGuard® MMAT at arrival and vaccination was monitored by lesion scoring according to the Johnson and Reid method and by oocyst counting in excreted droppings (OPG).



Average TMLS for the different *Eimeria* species (*E. acervulina*, *E. maxima*, *E. tenella*) in commercial broiler farms after vaccination with HuveGuard® MMAT.

Low total mean lesion scores



OPG (oocyst per gram) excretion in commercial broiler farms after vaccination with HuveGuard® MMAT.

Application of the HuveGuard® vaccine range is characterized by high oocyst excretion of the vaccine strains, in combination with low lesions.



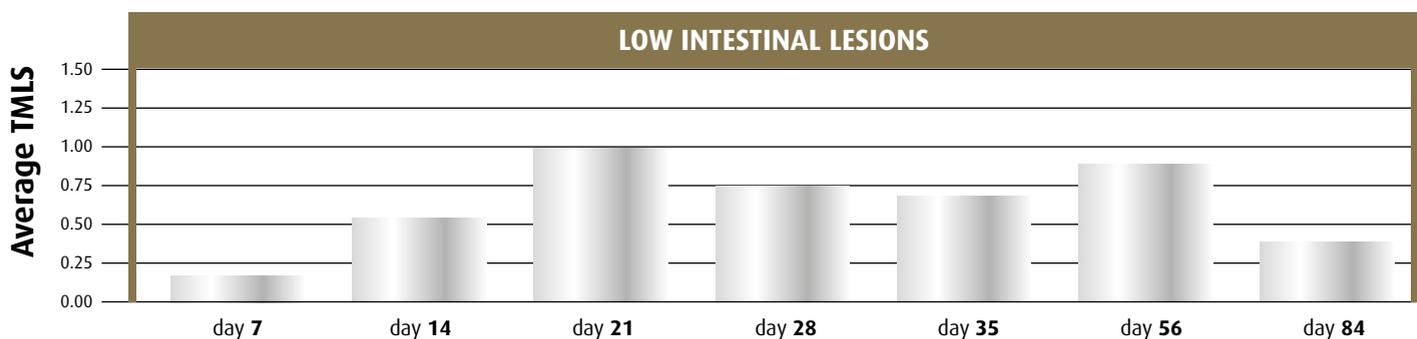
CYCLING FOR EFFECTIVE PROTECTION

Crucial points for optimal immunity and cycling. High oocyst excretion stimulates fast and efficient cycling.

ACTIVE PROTECTION

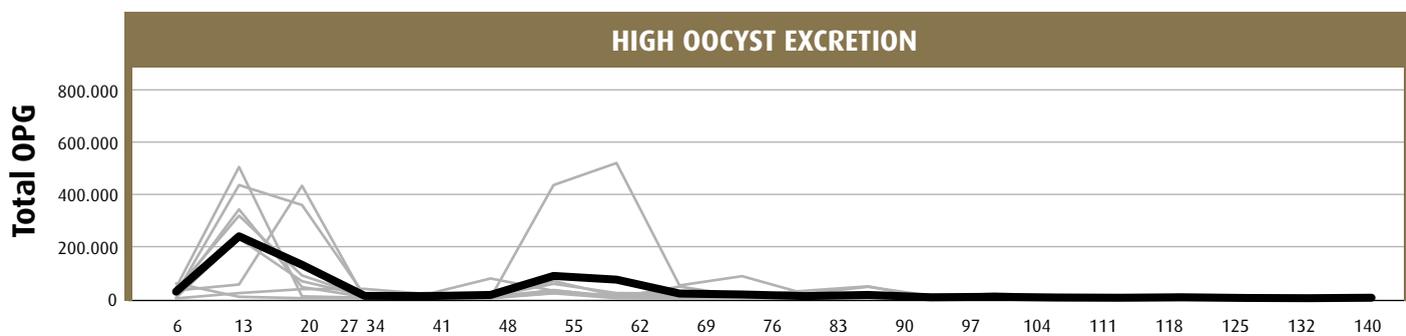


Well-monitored trials have been performed in 8 different European farms with breeders and layers. Birds were vaccinated with HuveGuard[®] MMAT (*E. maxima*, *E. mitis*, *E. acervulina* and *E. tenella*) between 0-4 days of age and with HuveGuard[®] NB (*E. necatrix* and *E. brunetti*) at 7-14 days of age. In all of the farms HuveGuard[®] vaccination was monitored by lesion scoring according to the Johnson and Reid method and by oocyst counting in excreted droppings (OPG).



Low total mean lesion scores

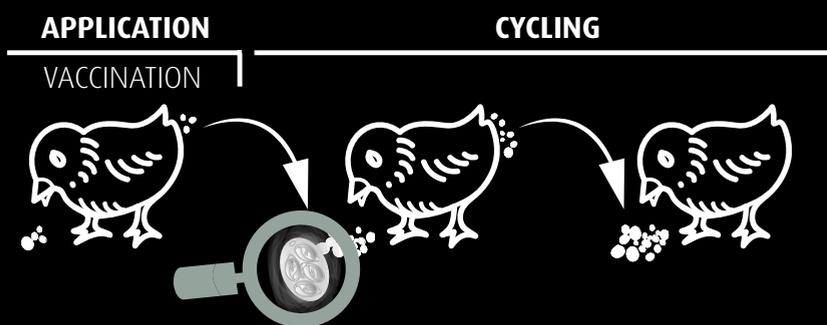
Average total mean lesion scores (TMLS) for the different *Eimeria* species (*E. acervulina*, *E. maxima*, *E. tenella*, *E. necatrix* and *E. brunetti*) after vaccination with HuveGuard[®] MMAT and HuveGuard[®] NB in commercial breeder and layer farms



Oocyst excretion (OPG per gram) in 8 commercial breeder and layer houses (— average OPG; — OPG in individual farms) after HuveGuard[®] MMAT and HuveGuard[®] NB vaccination

High oocyst outputs early after vaccination, indicating efficient cycling

Immunity development are vaccine application
 after HuveGuard[®] vaccination will
 cycling of the vaccines



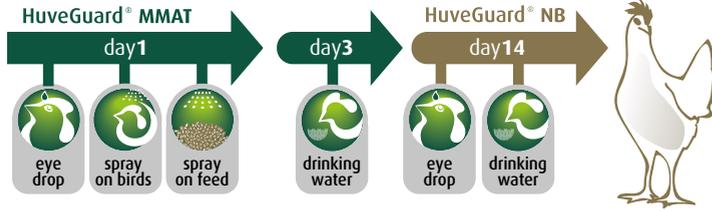
UNIQUE CONCEPT

SPLIT APPLICATION for longer living birds



The time point where immunity needs to be developed is different for the different *Eimeria* species: *E. necatrix* and *E. brunetti* don't cause outbreaks before 6-8 weeks of age, therefore there is no need for immunity to be developed before that time.

Overloading the chicken intestine with many different *Eimeria* species at the same time might interfere with the development/cycling of the individual species (due to competition between species*), especially for those species multiplying in the same region (*E. acervulina*, *E. maxima*, *E. mitis*, *E. necatrix*).



SPLIT APPLICATION: A first application of HuveGuard® MMAT, followed by a second vaccination at an older age with HuveGuard® NB, allows a more natural development of immunity against the different *Eimeria* species in longer living birds.

* Hein 1976, Mathis 2005

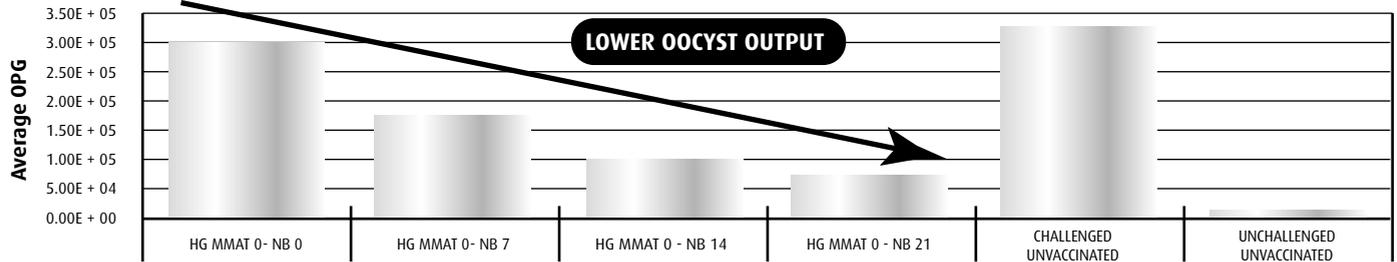
TRIAL SET UP: COMBINED VERSUS SPLIT VACCINATION*

group	Vaccine - day of vaccination	day 0	day 7	day 14	day 21	day 22 - 43 cycling	day 43 challenge	day 47 - 49 evaluation	day 50 immunity
HG MMAT 0 - NB 0	MMAT 0d - NB 0d					CYCLING	+	OPG	LESION SCORING
HG MMAT 0 - NB 7	MMAT 0d - NB 7d						+		
HG MMAT 0 - NB 14	MMAT 0d - NB 14d						+		
HG MMAT 0 - NB 21	MMAT 0d - NB 21d						+		
Challenged Unvaccinated	Unvaccinated						+		
Unchallenged Unvaccinated	Unvaccinated						-		

6 groups of 60 birds (3 replicates of 20 birds per group) vaccination by eye drop method. Challenge with virulent *Eimeria* strains at the age of 43 days.

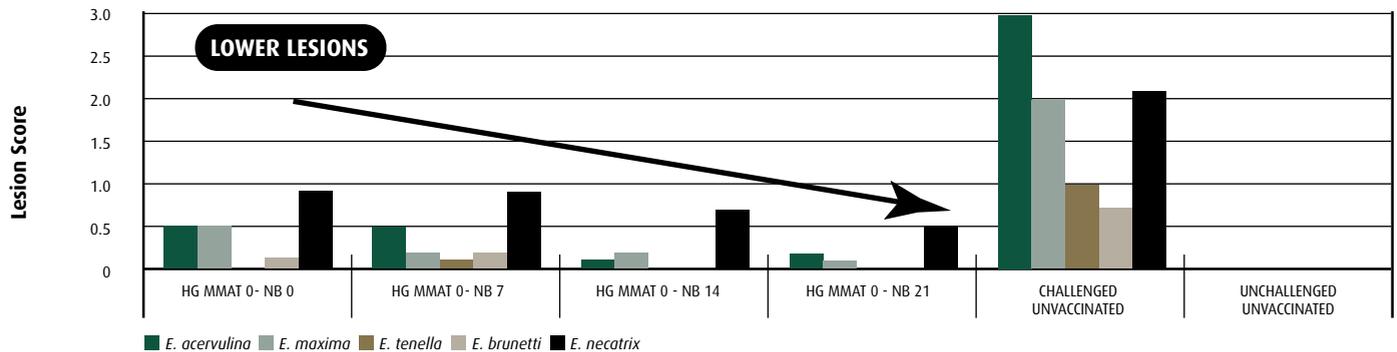
*data on file

RESULTS



Oocyst output in acute phase post challenge

Lower oocyst output after challenge when split concept of vaccination was applied



Lesion scores of the individual *Eimeria* species 7 days post challenge

Lower lesions especially for *E. acervulina*, *E. maxima* and *E. necatrix* when split concept of vaccination was applied

Protection (lower lesion scores, lower oocyst output) against wild strain challenge was more complete after split application of HuveGuard® MMAT and NB.

Split vaccination can overcome high field challenges more easily, especially for *Eimeria necatrix*.

HuveGuard[®] MMAT

HuveGuard[®] NB

HuveGuard MMAT[®] suspension for oral suspension for chickens

QUALITATIVE AND QUANTITATIVE COMPOSITION

Per dose of 0.025 ml: Active substances: Sporulated oocysts derived from attenuated precocious strains of *Eimeria* species: *Eimeria acervulina* (strain RA3+20): 50 - 139 oocysts*; *Eimeria maxima* (strain MCK+10): 100 - 278 oocysts*; *Eimeria mitis* (strain Jormit 3+9): 100 - 278 oocysts*; *Eimeria tenella* (strain Rt 3 +15): 150 - 417 oocysts* (*According to the in-vitro counting procedure of the manufacturer at the time of blending and at release).

For the active immunisation of chickens to reduce infection and clinical signs of coccidiosis caused by *E. acervulina*, *E. maxima*, *E. mitis* and *E. tenella*. Onset of immunity: 21 days post vaccination.

Pharmaceutical form: Suspension for oral suspension.

Target species: Chickens

Contraindications: none

Special warnings for each target species: The vaccine contains live coccidian oocysts and is dependent upon replication of the vaccinal strains within the chickens for building up of immunity. It is common to find oocysts in the gastro-intestinal tract of vaccinated birds from 1-3 weeks or more after vaccination. These oocysts are most likely to be vaccinal oocysts which recycle in the birds via the litter. Recycling of oocysts is necessary for the development of immunity and for continued protection. Since the protection against coccidial infection following vaccination is enhanced by natural challenge, access to any therapeutic agents having anti-coccidial activity at any time following vaccination can adversely affect the development of immunity. This is important throughout the life of the chicken.

Special precautions for use: Vaccinate healthy birds only. Vaccinate only chickens floor-reared on litter. To reduce the chance of coccidial challenge before the onset of immunity, litter should be removed and chicken housing should be thoroughly cleaned between rearing cycles. Special precautions to be taken by the person administering the veterinary medicinal product: well-fitting masks and eye protection should be worn by the operator when spraying the vaccine onto chicks or onto feed. Wash and disinfect hands and equipment after use.

Amounts to be administered and administration route: One dose vaccine (0.025 ml) per bird. Oral (spray on birds, spray on feed, drinking water). Further information is available on the SPC of the product.

Overdose: No side effects have been observed following administration of a 10 times overdose.

Withdrawal period(s): Zero days.

Immunological Properties: Pharmacotherapeutic group: immunologicals for Aves, live parasitic vaccines for domestic fowl. ATCvet code: Q101AN01. To stimulate active specific immunity to wild strains of *E. acervulina*, *E. maxima*, *E. tenella* and *E. mitis* when ingested by chickens. Vaccination is followed by continuous and lifelong recycling of vaccinal oocysts in birds via the litter. This recycling of oocysts results in the development of immunity and continued protection against wild strains of the four *Eimeria* strains.

Special precautions for storage: Store and transport refrigerated (2 °C - 8 °C). Do not freeze. Protect from light.

Marketing Authorisation Holder: Huvepharma NV, Uitbreidingstraat 80, 2600 Berchem, Belgium, for more information consult www.huvepharma.com

Seek advice from the Medicine Prescriber. Use Medicines Responsibly

Marketing Authorisation numbers: REG NL 112918, BE-V500542, PEI.V.11847.01.1, 837072, FR/N/7268394.3/2016, ESP 3462, VPA 10782/027/001, Vm 30282/4034, 0022-2672, CY00555V, 97/049/16-C, 3791/1/16 NÉBIH ÁTI (1000 adag); 3791/2/16 NÉBIH ÁTI (5000 adag), AIC n° 105002024 (5x1000); 105002051 (5X5000), 928/01/16RIVPT, 160293, LT/2/16/2350/001-006, 1985, V/MRP/16/0025, 97/044/MR/16-S, MR/V/0548/001, UP/I-322-05/16-01/509, 34026, 16-11084, 54416, 57384, 107715/29-11-2017, 2661/17

HuveGuard NB[®] suspension for oral suspension for chickens

QUALITATIVE AND QUANTITATIVE COMPOSITION

Per dose of 0.025 ml: Sporulated oocysts from two attenuated precocious lines of *Eimeria* species: *Eimeria necatrix* (strain mednec 3+8): 100-310 oocysts*; *Eimeria brunetti* (strain roybru 3+28): 50-155 oocysts* (*According to the in vitro counting procedure of the manufacturer at the time of blending and at release).

For the active immunisation of chickens from 14 days of age to reduce infection and clinical signs of coccidiosis caused by *E. necatrix* and *E. brunetti*. Onset of immunity: 21 days post vaccination.

Pharmaceutical form: Suspension for oral suspension.

Target species: Chickens (layers, breeders)

Contraindications: none

Special warnings for each target species: The vaccine contains live coccidian oocysts and is dependent upon replication of the vaccine strains within the chickens for building up of immunity. It is common to find oocysts in the gastro-intestinal tract of vaccinated birds from 1-3 weeks or more after vaccination. These oocysts are most likely to be vaccinal oocysts which recycle in the birds via the litter. Recycling of oocysts is necessary for the development of immunity and for continued protection. Since the protection against coccidial infection following vaccination is enhanced by natural challenge, access to any therapeutic agents having anti-coccidial activity at any time following vaccination can adversely affect the development of immunity. This is important throughout the life of the chicken.

Special precautions for use: Vaccinate healthy birds only. Chickens must be strictly floor reared on litter. To reduce the chance of coccidial challenge before the onset of immunity, litter should be removed and chicken housing should be thoroughly cleaned between rearing cycles. Special precautions to be taken by the person administering the veterinary medicinal product to animals. Wash and disinfect hands and equipment after use.

Amounts to be administered and administration route: Oral (via drinking water) use. Administer one dose of vaccine to each chicken from 14 days of age. Further information is available on the SPC of the product.

Overdose: No side effects have been observed following administration of a 10 times overdose.

Withdrawal period(s): Zero days.

Immunological Properties: Pharmacotherapeutic group: immunologicals for Aves, live parasitic vaccines for domestic fowl. ATCvet code: Q101AN01. To stimulate active specific immunity to wild strains of *E. necatrix* and *E. brunetti* when ingested by chickens. Vaccination is followed by continuous and lifelong recycling of vaccinal oocysts in birds via the litter. This recycling of oocysts results in the development of immunity and continued protection against wild strains of both *Eimeria* strains

Special precautions for storage: Store and transport refrigerated (2 °C - 8 °C). Do not freeze. Protect from light.

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Marketing Authorisation number: REG NL 115386; BE-V498533; PEI.V.11837.01.1, 836986, FR/N/1484629.6/2016, ESP 3428, VPA 10782/025/001, Vm 30282/4032, 0022-2656, CY00551V, 97/047/16-C, 3771/1/16 NÉBIH ÁTI (1000 adag); 3771/2/16 NÉBIH ÁTI (5000 adag), AIC n° 104995030 (5x1000); 104995042 (5X5000), 927/01/16RIVPT, 160294, LT/2/16/2350/001-006, 1973, V/MRP/16/0012, 97/037/MR/16-S, MR/V/0556/001, UP/I-322-05/16-01/508, 33935, 16-11035, 54277, 57251, 107716/29-11-2017, 2660/17

