

Find out how to access preview-only content
Book inside Get Access
Tropical Animal Health and Production
February 2009, Volume 41, Issue 2, pp 149-152

Protective antibody response produced by the chickens vaccinated with green coloured thermostable *Newcastle disease virus*

1 Citation

Abstract

The efficacy of green-coloured (GC) I-2 Newcastle disease vaccine was determined in the present study. I-2 vaccine was mixed with a green coloured dye and stored at 4°C for 6 months while assayed for the virus infectivity at a monthly interval. Chickens were vaccinated with the GC vaccine by eye drop. Serum samples were collected from all birds before and after vaccination at weekly interval for 4 weeks and tested for haemagglutination-inhibition (HI) antibody against *Newcastle disease virus* (NDV). These chickens were challenged with NDV virulent strain four weeks after vaccination. The results showed that there was no difference between the infectivity titres of GC and uncoloured vaccines. However, chickens vaccinated with GC vaccine produced higher HI antibody titres than chickens vaccinated with uncoloured vaccine. Results from the challenge trial showed that all vaccinated chickens survived whereas all unvaccinated chickens died. The findings from this study have shown that the GC vaccine is safe and produced protective antibodies against NDV in vaccinated chickens.

Wambura, P. N., 2008. Protective antibody response produced by the chickens vaccinated with green coloured thermostable Newcastle disease virus. *Tropical Animal Health and Production*.

Page %P

Page 1

Trop Anim Health Prod (2009) 41:149–152
DOI 10.1007/s11250-008-9169-7

ORIGINAL PAPER

Protective antibody response produced by the chickens vaccinated with green coloured thermostable *Newcastle disease virus*

P. N. Wambura

Abstract The efficacy of green-coloured (GC) I-2 Newcastle disease vaccine was determined in the present study. I-2 vaccine was mixed with a green coloured dye and stored at 4°C for 6 months while assayed for the virus infectivity at a monthly interval. Chickens were vaccinated with the GC vaccine by eye drop. Serum samples were collected from all birds before and after vaccination at weekly interval for 4 weeks and tested for haemagglutination-inhibition (HI) antibody against *Newcastle disease virus* (NDV). These chickens were challenged with NDV virulent strain four weeks after vaccination. The results showed that there was no difference between the infectivity titres of GC and uncoloured vaccines. However, chickens vaccinated with GC vaccine produced higher HI antibody titres than chickens vaccinated with uncoloured vaccine. Results from the

challenge trial showed that all vaccinated chickens survived whereas all unvaccinated chickens died. The findings from this study have shown that the GC vaccine is safe and produced protective antibodies against NDV in vaccinated chickens.

Keywords Chickens · Newcastle disease · Green-coloured vaccine · Strain I-2 · Thermostability

Abbreviations

EID₅₀ median embryo infectious dose
HA haemagglutination
HI haemagglutination-inhibition
NDV *Newcastle disease virus*

Introduction

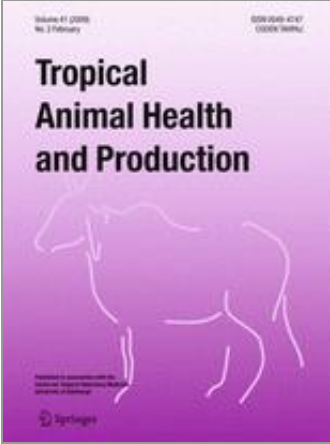
Newcastle disease (ND) is one of the most economical important disease of poultry especially village chickens in most developing countries. The disease can cause severe outbreaks with high mortalities reaching 100% thus result in great economic losses (Spradbrow 1993/94). Vaccination of village chickens against ND is the most feasible methods for controlling the disease (Meulemans 1988; Cargill 1999).

The strain I-2 of ND virus is a thermostable vaccine which was developed in order to be produced

Wambura, P. N., 2008. Protective antibody response produced by the chickens vaccinated with green coloured thermostable Newcastle disease virus. *Tropical Animal Health and Production*.

P. N. Wambura (✉)
Department of Veterinary Microbiology and Parasitology,
Sokoine University of Agriculture,
P. O. Box 3019, Chuo Kikuu,
Morogoro, Tanzania
e-mail: phil_wambura@yahoo.com

No Body Text -- translate me!



Within this Article

1. Introduction
2. Materials and methods
3. Results
4. Discussion
5. References
6. References



References (14)

1. Alexander, D. J., 1998. Newcastle disease. In: D. E. Swayne, J. R. Glisson, M. W. Jackwood, J. E. Pearson, W. M. Reed, (eds.), *A laboratory manual for isolation and identification of avian pathogens*, 4th edn., (American Association of Avian Pathologists, Kennett Square, PA), 156–163
2. Amakye-Anim, J., Awuni, J.A., Coleman, T., and Seddor, V., 2000. *Ghanaian trials with a locally-produced thermostable Newcastle disease vaccine (strain I-2) in chickens*. 26th Animal Science Symposium, Ghana Animal Science Association. Kumasi, University of Science and Technology.
3. Bensink, Z., and Spradbrow P., 1999. Newcastle disease virus strain I-2-a prospective thermostable vaccine for use in developing countries. *Veterinary Microbiology*, **68**, 131–139 CrossRef
4. Cargill, P., 1999. Vaccine administration in poultry. *In Practice*, **21**, 323–328
5. Dias, P.T., Alders, R.G., Fringe, R. and Mata, B.V., 2001. Laboratory and field trials with thermostable live Newcastle disease vaccines in Mozambique. In: R. G. Alders and P. B. Spradbrow, (eds.), SADC Planning Workshop on Newcastle Disease Control in Village Chickens. *ACIAR Proceedings*, **103**, 91–96
6. Meulemans, G., 1988. Control by vaccination. In: D. J. Alexander (ed.), *Newcastle Disease*, (Kluwer Academic Publications, Boston), 318–332
7. Reed, L. S., Muench, L. H., 1938. A simple method of estimating fifty percent endpoints. *American Journal Hygiene*, **27**, 493–497
8. SAS Institute Inc., 1986. Language Guide for Personal Computers. Version 6. Cary NC: SAS Institute Inc.
9. Spradbrow, P.B., 1993/94. Newcastle disease in village chickens. *Poultry Science Review*, **5**, 57–96.
10. Spradbrow, P.B. and Copland, J.W., 1996. Production of thermostable Newcastle disease virus in developing countries. *Preventive Veterinary Medicine* **29**, 157–159 CrossRef
11. Spradbrow, P.B., Mackenzie, M. and Grimes, S.E., 1995. Recent isolates of Newcastle disease virus. *Veterinary Microbiology*, **46**, 21–28 CrossRef
12. Thorntorn, D. H., 1988. Quality control of vaccines. In: D. J. Alexander (ed.) *Newcastle Disease*, (Kluwer Academic Publishers, Boston), 347–365
13. Tu, T.D., Phuc, K. V., Dihn, N.T.K., Quoc, D.N. and Spradbrow, P.B., 1998. Vietnamese trials with a thermostable Newcastle disease vaccine (Strain I-2) in experimental and village chickens. *Preventive Veterinary Medicine*, **34**, 205–214 CrossRef
14. Wambura, P. N., A. M. Kapaga and Hyera, J.M.K., 2000. Experimental trials with a thermostable

About this Article

Title

Protective antibody response produced by the chickens vaccinated with green coloured thermostable *Newcastle disease virus*

Journal

Tropical Animal Health and Production
Volume 41, Issue 2 , pp 149-152

Cover Date

2009-02-01

DOI

10.1007/s11250-008-9169-7

Print ISSN

0049-4747

Online ISSN

1573-7438

Publisher

Springer Netherlands

Additional Links

- [Register for Journal Updates](#)
- [Editorial Board](#)
- [About This Journal](#)
- [Manuscript Submission](#)

Topics

- [Zoology](#)
- [Veterinary Medicine](#)

Keywords

- [Chickens](#)
- [Newcastle disease](#)
- [Green-coloured vaccine](#)
- [Strain I-2](#)
- [Thermostability](#)

Industry Sectors

- Biotechnology
- Pharma

Authors

- P. N. Wambura ⁽¹⁾

Author Affiliations

- 1. Department of Veterinary Microbiology and Parasitology, Sokoine University of Agriculture, P. O. Box 3019, Chuo Kikuu, Morogoro, Tanzania

Continue reading...

To view the rest of this content please follow the download PDF link above.