

DEDICATION

To my parents

For their love, care and endless support
for all what they did, are doing and
will be done to make me happy...

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List of Abbreviations

AAF	Allantoic /amniotic fluid
Abs	Antibodies
APMV	Avian paramyxovirus serotype-1
BHI	Brain heart infusion
CEF	Chicken embryo fibroblast
CEK	Chicken embryo kidney
CVRL	Central Veterinary Research Laboratory
ddNTP	dideoxynucleotide triphosphate
EID50	Egg infected dose 50 percent
ELISA	Enzyme-linked immunosorbent assay
HA	Hemagglutination
HI	Hemagglutination Inhibition
HN	Hemagglutinine-neuraminidase
ICPI	Intracerebral pathogenicity index
MAbs	Monoclonal antibodies
ND	Newcastle disease
NDV	Newcastle disease virus
OIE	Office International de Epizootic
PBS	Phosphate buffered saline
PCR	polymerase chain reaction
RBCs	Red Blood Cells
RT-PCR	Reverse transcriptase polymerase chain reaction

SPF	Specific pathogen free
VVNDV	Viscerotropic velogenic Newcastle disease
WSB	Working seed –virus

Abstract

This study was conducted in order to investigate the safety and efficacy of a newly product, it describe the production of Newcastle disease vaccine for first time in Sudan from the (I-2) Australian strain. A vaccine batch was produced using the freeze dried working seed which was propagated by inoculated of 10 days old embryonated chicken eggs, chorioallantoic fluid was harvested and tested for absence of contamination. The virus was inactivated using 0.5% highly purified formalin, then the vaccine was formulated as water in oil emulsion. The vaccine safety and efficacy were tested, using 120 one day old broiler chicks, which were randomly divided into 3 groups, each containing 40 chicks. Group 1 was a control, group 2 (safety group) was inoculated with 0.4 ml of vaccine S/C, group 3 (efficacy group) was inoculated with 0.2 ml of vaccine. Sera were collected from the control and efficacy groups before vaccination for evolution maternal immunity on days 14, 21, and 30 post vaccination for evolution of seroconversion. Haemagglutination Inhibition revealed a significant difference in antibodies, the $p < 0.05$ between efficacy and control group. The safety group was observed during optimal time span, where no clinical signs or mortality was seen. These results confirmed the safety and efficacy of the Newcastle inactivated vaccine under laboratory condition. The vaccine needs to the tested under field conditions.

ملخص الدراسة

لية لقاح النيوكاسل المعطل عترة I₂ الاسترالية والمنتج محليا بالمعمل المركزي للبحوث البيطريه (سوبا) ، وذلك بتحضير دفعه جديده منه باستخدام بذرة العمل المجفده باكثرها عن طريق حقن الفيروس في اجنة البيض عمر 10 يوم ومن ثم تحضين البيض المحقون وتم ابعاد الاجنه النافقه 24 ساعه من الحقن ، ومن ثم حفظ البيض الذي يحتوي علي الاجنه النافقه بعد ذلك في 4 درجه مئوية المشيمي وتم بعد ذلك اختبار العياريه للفيروس باستخدام

تعطيل الفيروس باستخدام الفورملين 0.5%

تحضير اللقاح علي هيئة مستحلب مائي زيتي تحتوي 10

فيه 9,6 الفيروس 0,4 (TWEEN 80)

بينما 10 الزيتي فيه 9 زيت اليرافين

1 المانيدمونوليت (SPAN 80) الزيتي. تم اختبار فعالية

وامان هذا اللقاح وذلك باستخدام عدد 120 كتكوت لاحم عمر يوم تم تقسيمها عشوائيا الي

ثلاثه مجموعات ، 40 0.4 0.2

الامان والفعاليه علي الترتيب بينما تركت الثالثه كمجموعة تحكم ، عينات للسيرم من

مجموعة التحكم والفعاليه في الفترات ما قبل التحصين لتقييم المناعه الاميه 14 21

30 يوم بعد التحصين لتقييم الاجسام المضاده نتيجة استخدام اللقاح ، وتم حفظها في - 20

درجه مئوية لحين الاستخدام بغرض مقارنة الاجسام المضاده بين المجموعتين ومراقبة

ن اللقاح حتي نهاية فترة التربيه. بعد فحص المناعه باستخدام اختبار تثبيط

التلازن الدموي اظهرت النتائج فرقا معنويا في مستوي المناعه ($P < 0.05$) بين مجموعة

التحكم والفعاليه ، وبمراقبة مجموعة الامان لم يلاحظ اي نفوق او علامات مرضيه او

اثار سالبه بسبب مضاعفة الجرعه المعطاه للكثاكتيت في هذه المجموعة . من خلال هذه

عليها اللقاح الزيتي للنيوكاسل المعطل عترة I₂ المنتج محليا

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