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EFFECT OF *NIGELLA SATIVA* AND *TRIGONELLA GREACUM* ON REDUCING THE WITHDRAWAL OF TRICHLORFON IN CHICKEN

(With 3 Tables and 16 Figures)

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(Received at 13/12/2007)

تاثير حبة البركة والحلبة على تقليل فترة سحب متبقيات تراى كلوروفون فى الدواجن

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تم دراسة تاثير الحلبة وحبة البركة على التسمم بمبيد تراى كلورفون ودراسة التغيرات الباثولوجية الاكلينيكية ومتبقيات المبيد فى الدواجن. استخدم فى هذه الدراسة عدد ٣٥ دجاجة تم تقسيمها فى البداية الى مجموعتين الاولى اعتبرت مجموعة ضابطة والمجموعة الثانية غذيت على عليقة مخلوط بها مبيد التراى كلورفون بتركيز ٠,١٥% لمدة ٤ اسابيع متتالية. بعد هذه الفترة تم ذبح عدد ٥ طائر من المجموعة الثانية ثم اعادة تقسيمها الى ٤ مجاميع اخر. المجموعة الاولى (أ) عولجت بالحلبة مخلوط فى العليقة بتركيز ٤% والمجموعة الثانية(ب) عولجت بحبة البركة مخلوط فى العليقة بتركيز ١,٥% المجموعة الثالثة (ج) عولجت بخليط من حبة البركة والحلبة بنفس التركيز المجموعة الرابعة (د) لم تعالج وقد استمرت مدة العلاج ٤ اسابيع اخرى. نتائج المجموعة المعاملة بالمبيد اظهرت فى صورة الدم نقص فى عدد كرات الدم البيضاء والحمراء ونقص فى الهيموجلوبين وقيمة الهيماتوكريت والبروتين كما اظهرت النتائج زيادة فى نشاط انزيمات الكبد (أ.ل.ت) و(أ.س.ت) وزيادة فى الكرياتنين ويوريا الدم. وتغيرات باثولوجية فى الكبد والطحال والامعاء والكلى. اما المجموعات المعالجة بالحلبة وحبة البركة كلا على حدى او مشترك اظهرت تحسنا واضحاً فى هذه النتائج. قياس متبقيات المبيد أوضحت تحسنا فى المجموعة المعالجة بالحلبة والمعالجة بحبة البركة اكثر من المجموعة المعالجة بالخليط. اظهرت الدراسة ان الحلبة وحبة البركة كلا على حدى يسرع من التخلص من متبقيات التراى كلورفون فى الكبد والكلى والعضلات وفى الخلاصة أن خلط الحلبة مع حبة البركة قد يؤدى الى تعارض كلا منهما للاخر ويؤخر التحسن فى خلايا الكبد والطحال والكلى. استخدام الحلبة او حبة البركة كلا على حدى له تاثير افضل ضد التسمم بالتراى كلورفون.

SUMMARY

The effect of fenugreek *Trigonella feonum* and *Nigella sativa* seeds on trichlorfon toxicity with special regard to residues as well as clinicopathological changes in chickens were investigated. 35 chickens were used in this study. They were divided into two groups, control group (6) and experimental group (EG) 29.EG received ration contains

tricholrfon 0.15% for 4 successive weeks. 5 birds were slaughtered and the rest was subdivided into 4 equal groups of birds. Group A treated with 4% *trigonella feonum* TF, group B treated with 1.5% *nigella sativa* NS, group C treated with a mixture of TF and NS and group D not treated for further 4 weeks Results showed decreased level of RBCs,PCV,HB,WBCs, total proteins and increased values of creatinine BUN, AST and ALT activities in trichlorfon treated group, with pathological changes in liver, spleen, kidney and intestine. While group treated with TF, NS each alone showed improvement result than the combined group. Residues analysis showed that TF and NS each alone accelerated depletion of trichlorfon residues in, liver, kidney and muscles more than the combined group. On conclusion the combination of TF and NS may antagonize each other and delay the improvement of regeneration cells of kidney, liver and spleen. The use of TF and NS each alone had beneficial effect against trichlorfon toxicity, pathological and clinicopathological effects and complications were recorded.

Key words: *Nigella sativa, trigonella greacum, trichlorfon, chicken.*

INTRODUCTION

Spread application of pesticides in agricultural and veterinary field constitute major role in contamination of environment. The presence of pesticides in human food even in extremely small quantities is considered to be potential risk to human health. Trichlorfon is an organophosphorous compounds used as antiparisite to control endo- and ectoparasites in vet. Field in Egypt. The active substance of trichlorfon is dimethyle aster of (2-2, 2 trichloro-1-hydroxyethyl phosphoric acid). It is used in poultry to spray the floor or submerge the birds.

Nigella sativa seeds commonly known as black cumin are used in folk (herbal) medicine all over the world for the treatment and prevention Thymoquinone the major component of the essential oils have strong antioxidant properties and was effective against disease and chemically induced d nehepatotoxicity anphrotoxicity (Sayed and Nagi, 2007 and AL-ghamdi, 2003). The beneficial effects of the use of the seeds and thymoquinone may be related to their cytoprotectiveand antioxidant action, and to their effect on some mediators of inflammation (Ali and Blunden, 2003). The higher doses of thymoquinon induce oxidative strees leading to hepatic injury (Mansour *et al.*, 2001).

Trigonella feonum greacum seeds used for a variety of medicinal purpos.It has immuonostimulatory effect (Bin–Hafeez *et al.*,

2003). The seeds contain alkaloids (mainly trigonelline) and protein high in lysine and l-tryptophen. Its steroidal mucosal glycoprotein (Pandian *et al.*, 2003). Trigonella feonum extract has saponine (diosgenin, yamogenin, tigocyenin and neotigogenin) and mucilaginous fiber are though to account for many of the beneficial effect of the seeds (Escot., 1994). TF seeds are a natural source of iron, silicons, sodium and thiamin. The seeds are also an excellent source of selenium, an antiradient which help the body utilize oxygen. It contain mucilagins which are known for soothing and relaxing inflamed tissues (Sharma *et al.*, 1996). It has antiulcer potential effect. The cytoprotective effect of the seeds was due to the effect on antinflamatory and antineoplastic effects (Gomes, *et al.*, 2001). The seeds contain gallic acid which have a potant antioxidant properties (Kaviarasan, *et al.*, 2004) and it has hepatoprotective effect (Kaviarasan and Anduradha 2007). TF seeds do not produce any significant acute or cumulative effect (Muralidhara *et al.*, 1999).

In this research we try to study whether the effect of NS and TF alone or combination of both will be effective, synergestic or antagonistic against trichlorfon toxicity and for shortening the withdrawal time of trichlorfon from chicken.

MATERIALS AND METHODS

Trichlorfon:

Neguvon, Metrifonate, Chlorphos, an organophospherous compound is produced by ADWIA company; Egypt. It is white crystalline powder. Trichlorfon add on ration at concentration 0.15% equivalent to 1.5gm/kg ration (Fatma *et al.*, 1993).

Trigonella feonum:

Seeds obtained from Egypt for pharmaceutical and Medicinal plant, were used at dose 4% in ration equivalent to 40gm/kg ration for four weeks (Muralidhara *et al.*, 1999).

Nigella sativa:

Seed obtained from Egypt for pharmaceutical and Medicinal plant were used at dose 1.5% equivalent to 15gm/kg ration daily for four weeks (Al-Homidan *et al.*, 2002).

Chicken:

Thirty fife Balady chicken four month age, obtaind from Seds animal reproduction research institute. The chicken were maintained in cages, food and water were available *ad libitum*. The birds were divided

into two groups, the first group consist of 5 birds and kept as control. The second group consists of 30 birds received trichlorfon in ration at dose 0.15% daily for 4 weeks. After 4 weeks 6 birds from the second group were slaughtered for histopathology and residues analysis and the rest was subdivided into four groups each contain 6 birds and treated as follows:

Group A treated with TF seed in ration at dose 4% daily four 4 weeks. Group B treated with NS seed in ration at dose 1.5% for 4 weeks. Group C treated with combination of TF seeds and NS seeds with the same dose for 4 weeks. Group D received free ration and left without treatment.

During the experimental period the birds were kept under close clinical observation. Birds of all groups were subjected to hematological, serum biochemical examination and residues analysis was carried out after 4, 6 and 8 weeks.

Diagnostic kits:

Commercial diagnostic kits supplied from Spinreact and Diamond, Egypt were used for determination of hemoglobin, total protein, creatinine, blood urea nitrogen, aspartate aminotranseferase and alanin aminotranceferase activites.

Sampling:

Blood samples were taken from wing vein of different groups after 2, 4, 6, and 8 weeks from the beginning of the experiment for hematological studies. Blood samples were divided into two parts. The first part collected on EDTA to estimate hemoglobin concentration (HB), packed cell volum (PCV), total erythrocytes count (RBCs) and total (WBCs) and differential leucocytic count according to Fieldman *et al.* (2000). Second part was collected into plain centrifuge tube for serum separation and determination of alanin aminotranseferase (ALT), aspartate aminotranseferase (AST) activities (Ritman and frankel; 1957), determination of serum total proteins level according to Henry *et al.* (1974), determination of serum creatinine level according to Husdan and Rapaport, (1968) and blood urea nitrogen (BUN) level according to Patton and Crouch (1977).

Tissue specimens:

Tissue specimens were taken from each group of the experiment (three birds from each group) after 4, 6 and 8 weeks of experiment. Tissue specimens were taken from liver, kidney, spleen and intestine for histopathological examination according to Bancroft *et al.* (1996).

Tissue specimens from liver, kidney and muscle were obtained for residue analysis according to the procedure of Anderson et al., (1996). Residues were determined by high performance liquid chromatography (HPLC) equipped with uv-detector. The column used was stainless steel (10/250nm) and packed with c18. Flow rate was 0.8ml/minute. Mobile phase was methanol/water 70/30(v/v), this procedure gave`95% recovery. Identification of individual residue component was based on the retention time in relation to reference standard. Residues was calculated on a wet matter basis. The peak heights were taken as the trichlorfon response and trichlorfon content of the sample was calculated from the equation

ppm=(S1A)/(S2W)where:

S1=Trichlorfon response of sample.

A=nanograms of trichlorfon standard injected.

S2=Trichlorfon response of standard.

W=weight of sample injected in mg.

Statistical analysis:

Collected data from the different group of chickens were statistically analyzed for the mean and standard error using one way analysis of variance (ANOVA) according to the method described by Selvin (1996).

RESULTS

I - Results of clinical pathology:

a- Hemogram:

Results of the changes in hemogram in chickens of the experimental groups are shown in Table 1. Values of RBCs, HB and PCV were highly significant reduced in trichlorfon treated group 2 at 2 and 4 weeks and group D at 6 and 8 weeks. Group A TF treated group showed highly significant increase in RBCs, PCV and HB at 6 and 8 weeks. Group B NS treated group showed significant increase in RBCs, HB and PCV at 8 week .Group C which treated with TF and NS showed non significant increase in RBCs, HB and PCV at 6 and 8 week. Leucogram showed significant decrease inWBCs and lymphocyte in group 2and D at 2, 4, 6 and 8week. Group A showed significant decrease in WBCs at 8week while group B and C showed significant increase in WBCs and lymphocytes at 6 and 8 week.

b- Serum biochemistry:

Results of the changes in serum biochemical parameters in chickens of different experimental groups are shown in Table 2 birds in

group 2 and D showed significant decrease in total protein at 2, 4, 6 and 8week while group A, B and C showed significant increase in total protein at 6 and 8 weeks. Group 2 and showed significant increase in ALT, AST, creatinine and BUN during the experiment. Group A, B and Showed non significant decrease in AST and ALT. Group A and B showed significant increase in creatinine at 8 week, while group C showed significant decrease in BUN at 8 week.

II - Results of histopathology:

The histopathological examination of the experimental groups are presented in Figures 1-16. Group 2 and D showed the toxic effect of trichlorfon in liver, spleen, kidney and intestine, the effect exaggerated from the second week to the forth week in group 2 and present in group D at 6 and 8weeks. Liver showed toxic hepatitis in the form of degenerative changes (fatty change) with lymphocytic aggregation and oesinophil infiltration (figure 1). Spleen showed lymphocytic depletion with necrosis of the germinal center of white pulp. The splenic arteries showed sever angiopathyin all its layers (figure 2). Intestine showed cattahal enteritis with desquamation of epithelium cells of mucosa with leucocytic infiltration (figure 3). Kidney showed shrinked glomerular tuft in renal corpuscle (subacute) with interstitial mononuclear leucocytic infiltration and degenerative changes (hydropic degeneration) of renal tubules (figure 4). Group A TF treated group the liver, spleen, intestine and kidney showed regeneration of the cells (figures 5, 6, 7 and 8). Group B NS treated group liver showed moderate degenerative changes (figure 9). Spleen showed regeneration of the follicles (figure 10). Intestine showed mild degree of enteritis (figure 11). Kidney showed focal interstitial nephritis with lymphocytic aggregation (figure 12). Group C treated with TF and NS liver showed mild vascular degeneration of hepatocytes (figure 13). Spleen showed mild regeneration of follicles (figure 14). Intestine showed regeneration of the desquamated epith. cells (figure 15). Kidney showed mild degree of regeneration (figure 16).

III - Results of residues analysis:

From Table 3 it is obvious that both TF or and NS accelerated depletion rate of trichlorfon residues in various organs (liver, kidney and muscle). Peak level of withdrawal of tricholrfon in NS treated group is highly in liver and muscle, while in TF treated group there was high effect on kidney than other organs. TF and NS treated group has early synergistic effect in withdrawal of trichlorfon from liver, kidney and muscle.

Table 1: Mean values and standard error of hemogram in different experimental groups of chickens.

TIME (WEEK)	Group	RBCs × 10^6 µl	Hb g/dl	PCV %	WBCs × 10^3 µ	Differential leucocytic count %			
						Lypocyte	Heterophil	Monocyte	Esinophil
2	1	5.7 ± 0.1	19.4 ± 0.4	31.8 ± 0.2	16.9 ± 1	75.3 ± 0.5	21.6 ± 0.1	3 ± 0.1	0.3 ± 0.1
	2	4.4 ± 0.2**	11.8 ± 0.3 **	31 ± 0.3	13 ± 0.5**	63.3 ± 1**	34.3 ± 0.3**	3.3 ± 0.2	1.2 ± 0.1
4	1	5.4 ± 0.1	18.6 ± 0.2	32.6 ± 0.5	16.9 ± 0.5	75.3 ± 0.3	21.8 ± 0.1	3.1 ± 0.1	0.3 ± 0.01
	2	4.1 ± 0.2*	12 ± 0.5**	29 ± 0.2	11.0 ± 0.5**	70.3 ± 2**	26.6 ± 0.2*	3 ± 0.2	0.3 ± 0.02
6	1	5.1 ± 0.3	17.9 ± 0.5	31 ± 0.5	16.8 ± 0.1	76.6 ± 0.8	26.3 ± 0.2	2.7 ± 0.1	1.6 ± 0.1
	A	5 ± 0.2	18.9 ± 0.8	34.7 ± 0.1*	17.8 ± 0.5	76 ± 1	21.3 ± 0.7	3 ± 0.5	0.2 ± 0.1
	B	4.5 ± 0.2	15.01 ± 0.6	30.8 ± 0.5	19 ± 0.3**	82.6 ± 1**	15.3 ± 0.1*	2 ± 0.1	1 ± 0.1
	C	4.11± 0.1*	14.83 ± 0.1	31.8 ± 0.4	17.7 ± 0.4	81.3 ± 0.2*	18.3 ± 0.1	1.3 ± 0.2*	0
	D	3.8 ± 0.2*	10.36 ± 0.3**	28 ±0.4*	9.7 ± 0.3**	59.6 ± 3**	36 ± 0.3**	5 ± 0.1**	1.3 ± 0.1
8	1	5.5 ± 0.2	18.2 ± 0.3	32.1 ±0.1	17 ± 0.5	74 ± 0.5	22 ± 0.1	3.3 ± 0.2	0
	A	5.6 ± 0.5	18.8 ± 0.4	36.3 ±0.5*	15 ± 0.6*	70 ± 2*	26 ± 0.1	3 ± 0.1	0
	B	6.4 ± 0.1**	19.6 ± 0.2	35.7 ± 1*	19.3 ± 0.5*	82.7 ±1**	14 ± 0.2	1.7 ± 0.2*	0
	C	4.8 ± 0.4	15.16 ±0.1	33 ±0.5	17 ± 0.5	79 ± 0.5*	17.7 ± 0.3	4 ± 0.2	0
	D	3.9 ± 0.1*	11.5 ± 0.3**	29.6 ± 0.1*	10 ± 0.5**	64 ± 0.5*	32.3 ±0.1	3.7 ±0.4	0
LSD	0.5%	1.05	2.3	2.9	2	5.9	5.3	1.6	-
	0.01%	1.04	3.4	4.2	2.8	8.5	7.7	2.3	-

Group 1Normal control Group 2 received trichlorfon.
Group A received TF Group B received NS.
Group C received TF and NS. Group D received free ration.
*significantly different from normal control group $P < 0.05$.
**highly significantly different from normal control group $P < 0.0$

Table 2: Mean values and standard errors of serum biochemical parameter in different experimental group of chickens.

Time/week	Group	Total protein gm/dl	ALT u/l	AST u/l	Creatinine mg/dl	BUN gm/dl
2	1	6.4±0.2	20.48+1.9	85.3+3.2	0.4+0.01	5+0.3
	2	3.6+0.1**	22.89+0.3	133.3+5.2**	0.7+0.02**	6.86+0.1*
4	1	6.8+0.1	21.9+1.2	82.1+2.1	0.37+0.02	5.12+0.4
	2	3.7+0.3**	25.08+1.3	150+4.5**	0.55+0.01**	5.7+0.5
6	1	6.9+0.1	20.08+0.9	80.6+3.1	0.39+0.05	5.3+0.3
	A	6.09+0.3	24+0.7	92.5+4.2	0.46+0.02	4.7+0.2
	B	5.3+0.1	24.05+0.1	93.6+5.3	0.42+0.01	3.8+0.3
	C	7.2+0.2*	22.72+0.4	95.3+6.1	0.48+0.01	6.17+0.4
	D	4.6+0.1**	22.96+0.1	143.8+6.1**	0.54+0.03*	6.62+0.1
8	1	6.9+0.3	19.9+0.4	79.03+4.2	0.35+0.04	5.5+0.2
	A	5.6+0.1	27.52+1.3	81.1+2	0.47+0.01*	5.96+0.1
	B	6+0.1	28.32+0.1	86.5+3	0.66+0.005**	5.6+0.4
	C	6.4+0.2	21.28+0.5	75.5+1	0.4+0.01	3.28+0.5
	D	4.4+0.2**	26.24+0.7	155.5+6.1**	0.58+0.02**	6.93+0.6
LSD	0.5%	0.8	4.7	15.7	0.14	1.8
	0.1%	1.17	5.1	22.5	0.2	

Group 1 normal control Group 2 received trichlorphon.
Group A received TF. Group B received NS.
Group C received TF and NS. Group D received free ration.
*significant different from normal control group $p<0.05$.
** Highly significant different from normal control $p<0.01$.

Table 3: Trichlorphon (T) residues (ppm) in liver, kidney and muscle in different experimental group of chickens.

Time/week	Group	Liver	Kidney	Muscle
2	1 control	-	-	-
	2 Trichlorphon	113.7±6.1	162.9±8.1	48.9±5.7
6	Trichlorphon	5.917±0.29	9.85+±0.67	3.61±4±+0.26
	TF	2.311±0.015	3.131±0.13	2.890±0.16
	NS	1.342±0.624	3.912±0.1±2	2.352±+0.21
	TF and NS	0.791±0.021	2.145±0.1±0	2.091+±0.14
	L.S.D.	0.255	0.337	0.132
8	Trichlorphon	0.009±0.002	0.014±0.004	0.026±0.006
	TF	0.005±0.001	0.007±0.003	0.009±0.001
	NS	0.003±0.001	0.006±0.002	0.008±+0.003
	TF and NS	Not detect	0.005±0.001	0.006±0.002
	L.S.D.	0.003	0.08	0.06

TF=Trigonella feonum treated group.
NS=Nigella sativa treated group.
TFand NS Trigonella feonum and Nigella sativa treatad group.

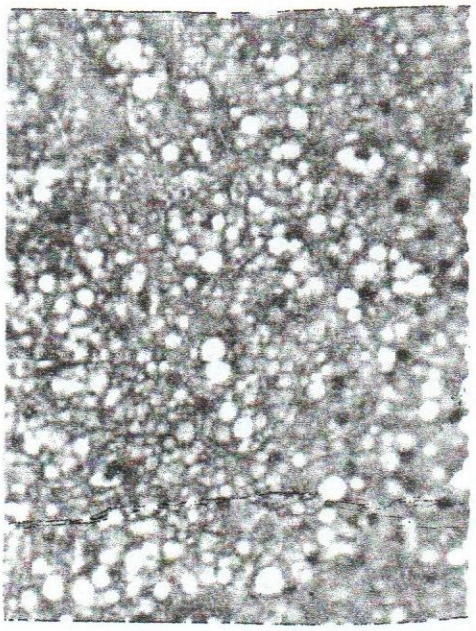


Fig. 1: Liver of trichlorphon group showed toxic hepatitis in the form of fatty changes (H&E x 100)

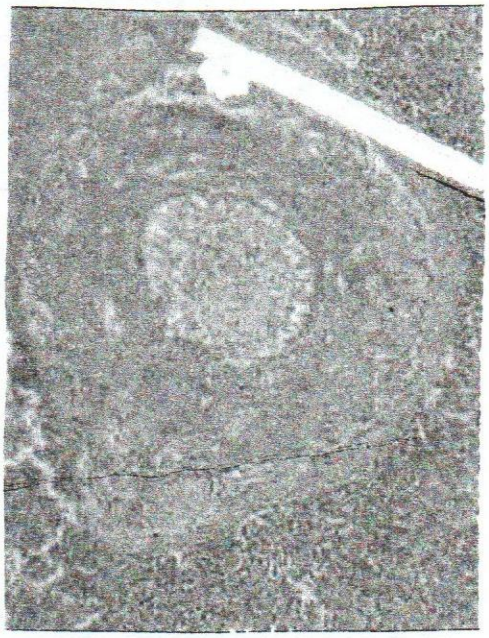


Fig. 2: Splenic arteries of trichlorphon group showed sever angiopathy in all layers (H&EX400)

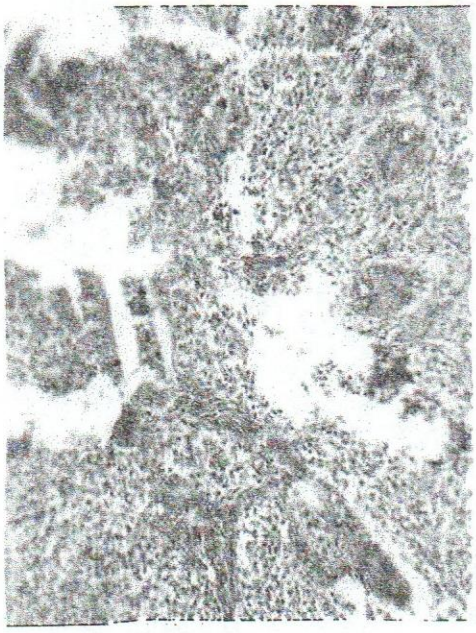


Fig. 3: intestine of richlorphon group showed desquamation of epith. Cells of mucosa with leucocytic infiltration (H&EX100).

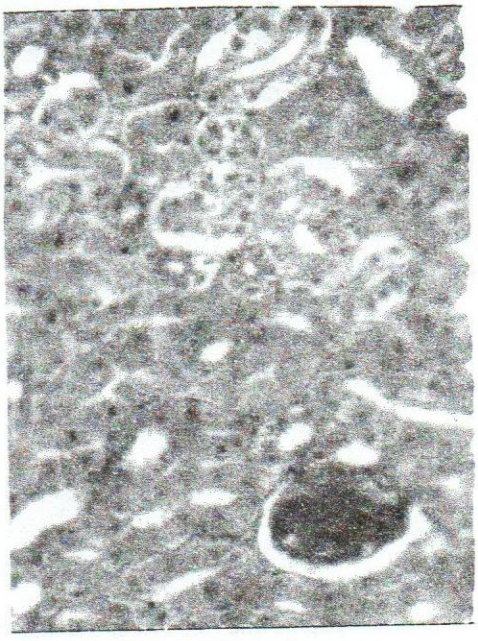


Fig. 4: kidney of trichlorphon group showed shrinked glomerular tuft with hydropic degeneration of renal tubule and interstitial leucocytic infiltration. (H&EX100).

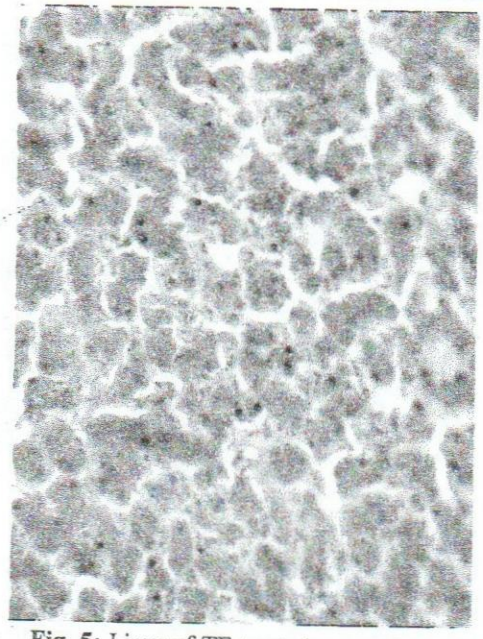


Fig. 5: Liver of TF treated group showed regeneration of cells (H&EX100).

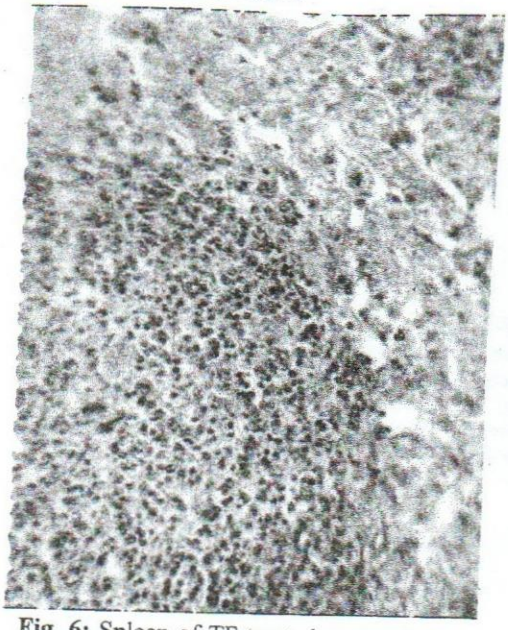


Fig. 6: Spleen of TF treated group showed regeneration of lymphocytes (H&EX100).

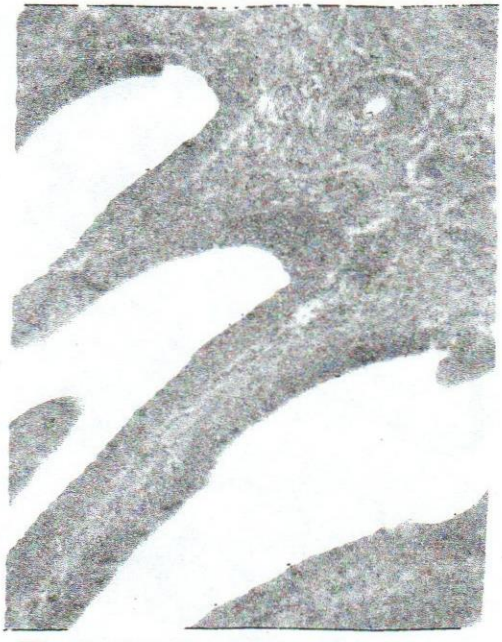


Fig. 7: Intestine of TF treated group showed regeneration of mucosal epith. (H&EX100).

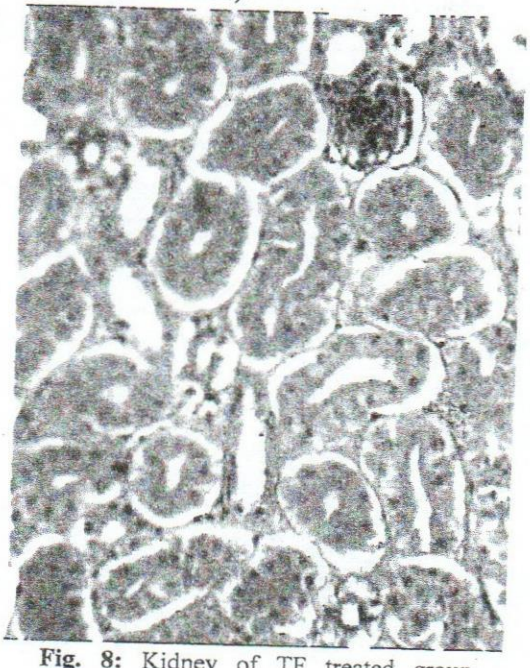


Fig. 8: Kidney of TF treated group showed normal renal tubules (H&EX100).

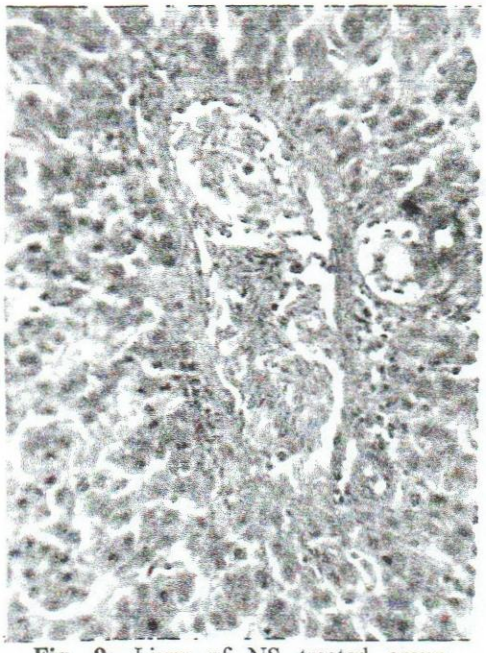


Fig. 9: Liver of NS treated group showed moderate degenerative changes (H&EX100).

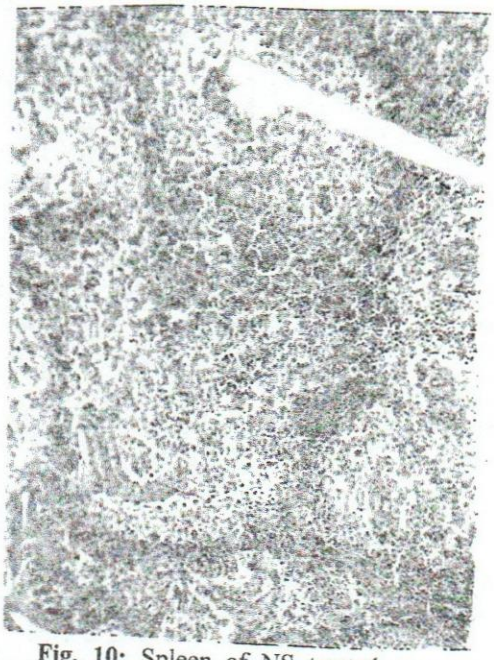


Fig. 10: Spleen of NS treated group showed regeneration of follicles (H&EX100).

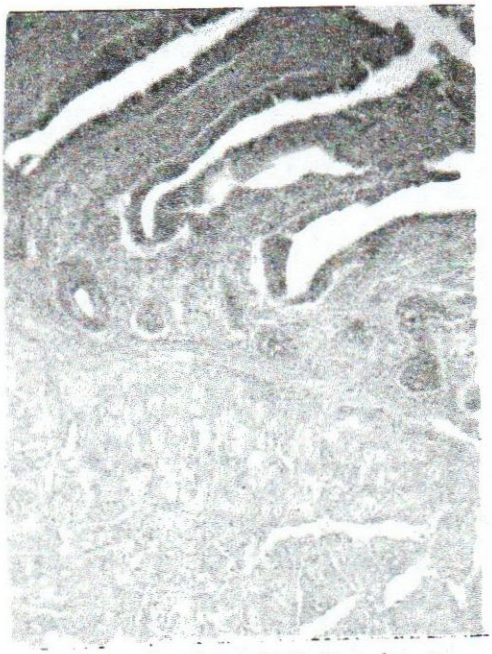


Fig. 11: Intestine of NS treated group showed Mild degree of entireties (H&EX100).

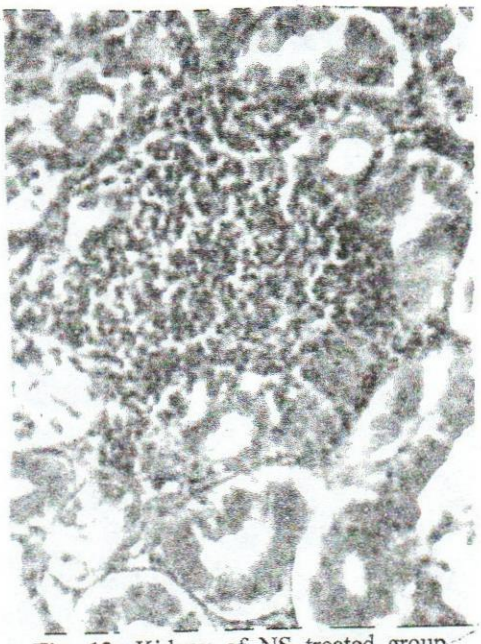


Fig. 12: Kidney of NS treated group showed focal interstitial nephritis with lymphocytic aggregation. (H&Ex100).

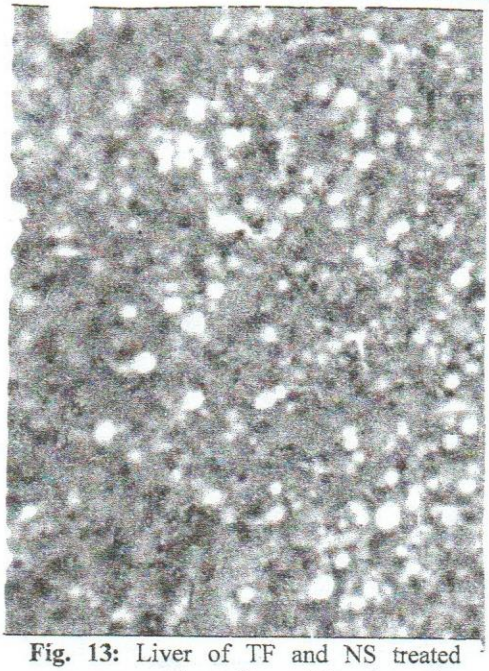


Fig. 13: Liver of TF and NS treated group showed mild vascular degeneration of hepatocyte (H&EX100).

Fig. 14: Spleen of TF and NS treated group showed mild regeneration of follicles (H&EX100).

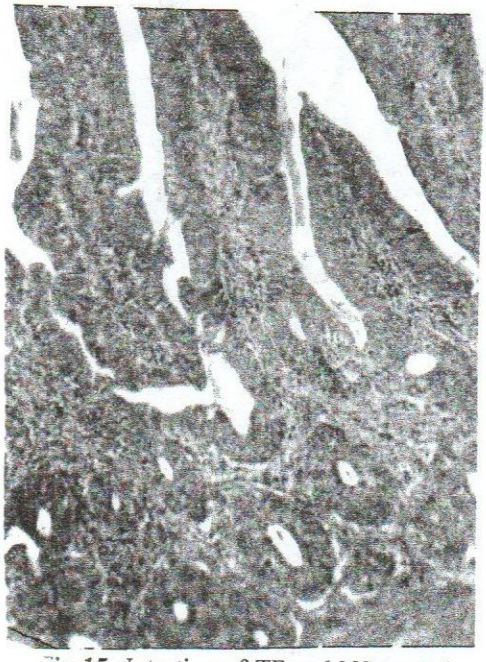


Fig. 15: Intestine of TF and NS treated [illegible] showed regeneration of the desqu[illegible] epith. Cells (H&EX100)

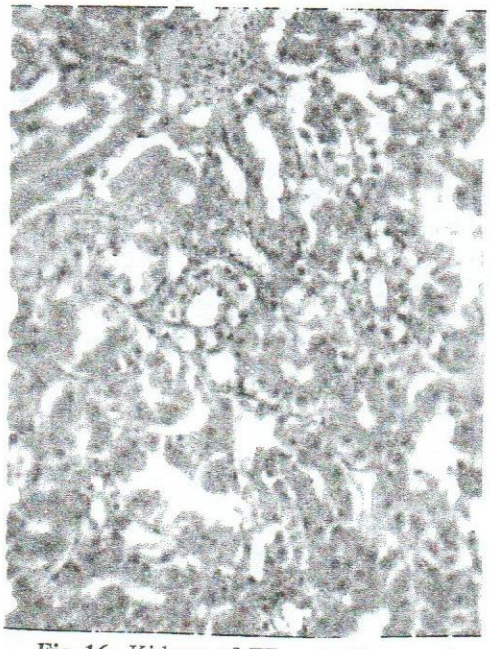
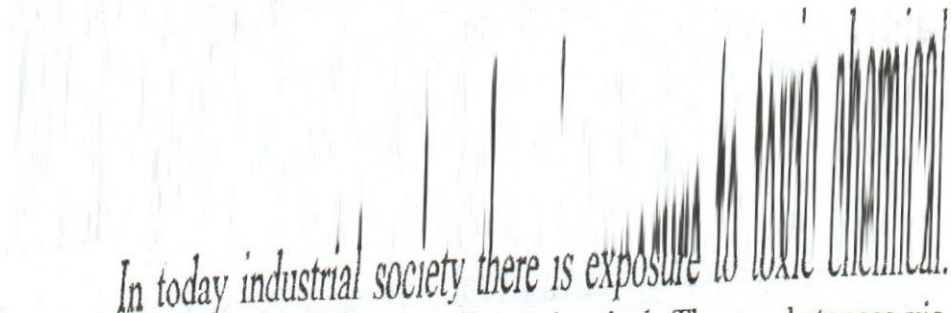


Fig 16: Kidney of TF and NS treated group showed regeneration of renal tubules (H&EX100)

DISCUSSION



In today industrial society there is exposure to toxic chemical.

There is no escaping exposure to toxic chemical. These substances via different aeries get access to interior of the animal body through dermal tissues, oral and respiratory routes and in turn to its products. Adverse effects includes clinical manifestation, biochemical changes, pathological changes and mutagenic changes depend up on the dose used and physiological condition of the animal. Pesticides are the most chemical environmental pollutant in Egypt Among these pesticides is trichlorfon which is used as insecticide and acricidal in poultry as endo- and ectoparasiticide at 0.15% solution. Our results indicate that trichlorfon induce anemia and leucopenia this result was in agreement with Fatma *et al.* (1993). This may be due to heamatotoxic and leukoengenic effect of trichlorfon Stieglitz *et al.* (1974). The anemic picture was improved in group A treated with TF. This may be refered to its iron content and the antioxidant effect (Sharma *et al.*, 1996). Group B NS treated group showed increase in RBC; PCV and HB to normal level, this may be due to the chemo preventive agent of NS as mentioned by Meral and Kantrer (2003). Leucocytic count return to normal level in group A. This observation may be due to the spleen and bone marrow stimulatory effect of trigonella feonum Bin Hafeeze *et al.* (2003). Leucocytosis with lymphocytosis in group B NS treated group may be due to immunopotentiating effect of nigella sativa Farah *et al.* (2004). The histopathological examination of spleen in this group agreed with the observed results of follicular lymphocytic regeneration. In serum biochemical analysis reveled hypoproteinemia and increase in liver enzymes ALT and AST. This finding was agreed with Fatma *et al.* (1993). It may be due to the hepatotoxic effect of trichlorfon Gomes J *et al.* (1999). These results coincide with the histopathological examination of the liver in this group. In group A and B the treatment with TF and NS improved the changes of protein, ALT and AST enzyme activity. This improvement may be due to the antioxidant effect of the gallic acid of TF in group A Kaviarasan *et al.* (2004) or due to the cytoprotective and antioxidant effect of thymoquinone in NS treated group. Group C which received NS and TF slight improvement in serum biochemical parameter, these may be due to the antagonistic effect of the NS and TF on the liver .In the current study, increase values of creatinine and blood urea nitrogen BUN in trichlorfon group may be attributed to renal impairment or reduction in glomerular filtration and

accumulation of these substances in the blood because of defective kidney elimination Reynolds (1980). The histopathological examination of kidney in this group confirmed the biochemical data. BUN was significantly decrease in group C early synergistic antioxidant effect of thymoqunone and trigonella feonum by a mechanism related at least in part to their ability to decrease oxidative stress and to preserve the activity of the antioxidant enzyme, as well as their ability to prevent the enzyme decline in kidney tissue Sayed *et al.* (2007). Data of residues analysis indicate depletion of residues in liver, kidney and muscle monitored to the end of trichlorfon exposure and also at weekly interval at withdrawal study indicating that residues in chicken exposed to trichlorfon without treatment showed moderate degradation. This result agree with Fatma *et al.* (1993), WHO (2003) while NS and TF accelerated trichlorfon degradation singly or in combination in comparison to untreated group. The peak level of response was noticed in the group given NS and TF. The effect of TF on trichlorfon residues attributed to its gallic acid which inhibit lipid peroxidation and seeds have ability to prevent iron-induced lipid peroxidation and reduce glutathion Ranhiv *et al.* (2004) Kaviarasen *et al.* (2004) while NS have mucin and thymoqunone act as antioxidant ameliorated liver and kidney function Ali and Blunden (2003), EL-Dakhakhny *et al.* (2002) and Khan *et al.* (2003).

In conclusion, *Trigonella feonum* and *Nigella sativa* singly or in combination have potential radical scavenging activity against trichlorfon toxicity in chicken. In this trend, both TF and NS may have wide protective action against other several chemicals. The combination enhancement was only early but after 6 weeks till the end of the experiment the single medication proves good clinicopathological results, so we advice to use each of them as single supplement to give better results. The use of herbal medicines such as TF and NS as food additive are very useful and have great beneficial effect in improving health condition and encouraging safety profile.

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