

Location: DEPARTMENT OF VETERINARY PATHOLOGY, SHIRWAL

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TO ASSESS THE EFFICACY OF 'RESPONSE' ON INDUCED RESPIRATORY STRESS IN BROILER CHICKEN

One group was with induced respiratory stress but added with RESPONSE (500g / MT of feed) from first week onwards and other groups were as follows

GROUP	No of chicks	Treatment Details
T0	32	Control group with normal broiler diet
T1	32	Induced Respiratory Stress group : (Basal diet)
T2	32	Induced Respiratory Stress + Treatment group: Basal diet with supplementation Response @ 500g/MT of feed after Induction of Respiratory stress from fourth week onwards.
T3	32	Drug Control group: Basal diet with supplementation Response @ 500 g/MT of feed from first week onwards.

The induction of respiratory stress was done by reducing air flow leading to reduced ventilation and keeping few litter area wet by sprinkling water there by inducing increased ammonia levels in the room.

The nasal secretions of affected birds (showing clinical signs of

respiratory stress with certain mortality) was collected aseptically in sterile swabs from near the poultry farm was diluted with equal quantity of PBS. This solution was inoculated intranasal in every bird in second and third group (0.5 ml / bird). This was done on day 23 and day 33.

The clinical symptoms of respiratory distress were visible by the end of the 4th week and exaggerated in the 5th and 6th week. These include respiratory stress like gasping, respiratory sounds, open beak, panting condition, decreased feed intake, sinusitis and conjunctivitis. Conclusions from RESPONSE trial are as follows:

IMPROVED LIVABILITY

RESPONSE improves livability when given from day one onwards.

Groupwise observation of Mortality

Parameters	Treatments			
	T0 (Normal Control with Basal diet)	T1 (Induced Respiratory Stress)	T2 (Induced Respiratory Stress & Treatment with RESPOSNE from day 22 onwards)	T3 (Supplementation with RESPOSNE from first week onwards)
Day 1	0	0	0	0
Week I	0	0	0	0
Week II	0	0	0	0
Week III	0	0	0	0
Week IV	0	0	0	0
Week V	0	4	3	0
Week VI	0	9	2	0
Total	0	13	5	0
%Mortality	0%	40.6%	15.6%	0%

IMPROVED WEIGHT GAIN

- Continuous use of RESPONSE improves weight gain significantly compared to normal control group
- Treated with RESPONSE during distress improves weight gain compared to non-treated flock

Average Body Weights (gm) (Mean±SE)

Parameters	Treatments			
	T0 (Normal Control with Basal diet)	T1 (Induced Respiratory Stress)	T2 (Induced Respiratory Stress & Treatment with RESPOSNE from day 22 onwards)	T3 (Supplementation with RESPOSNE from first week onwards)
Day 1	38.76 ±0.14	38.15 ±0.25	38.14 ±0.23	38.93 ±0.21
Week I	123.94 ±0.31	123.75 ±0.36	123.91 ±0.33	125.92 ±0.22
Week II	347.26 ±4.63	339.23 ±5.22	344.98 ±2.48	341.96 ±0.76
Week III	726.87 ±2.50	708.76 ±8.13	725.96 ±7.82	729.01 ±5.34
Week IV	1154.94 ±17.42	1135.80 ±14.06	1140.74 ±17.02	1141.38 ±11.09
Week V	1599.83 ±18.71	1544.95* ±21.55	1592.81 ±17.45	1665.25 ±20.07
Week VI	2301.56 ±29.97	1883.01* ±37.06	2092.26* ±18.94	2418.78 ±30.27
Total	0	13	5	0
%Mortality	0%	40.6%	15.6%	0%

* Significant Difference between the groups for the respective week.

SIGNIFICANT CHANGES IN CLINICAL SIGNS AND POST MORTEM LESIONS

RESPONSE reduces the severity of clinical signs that is absence of respiratory sound (rales). Post Mortem lesions reveal minimal tracheal hemorrhages.



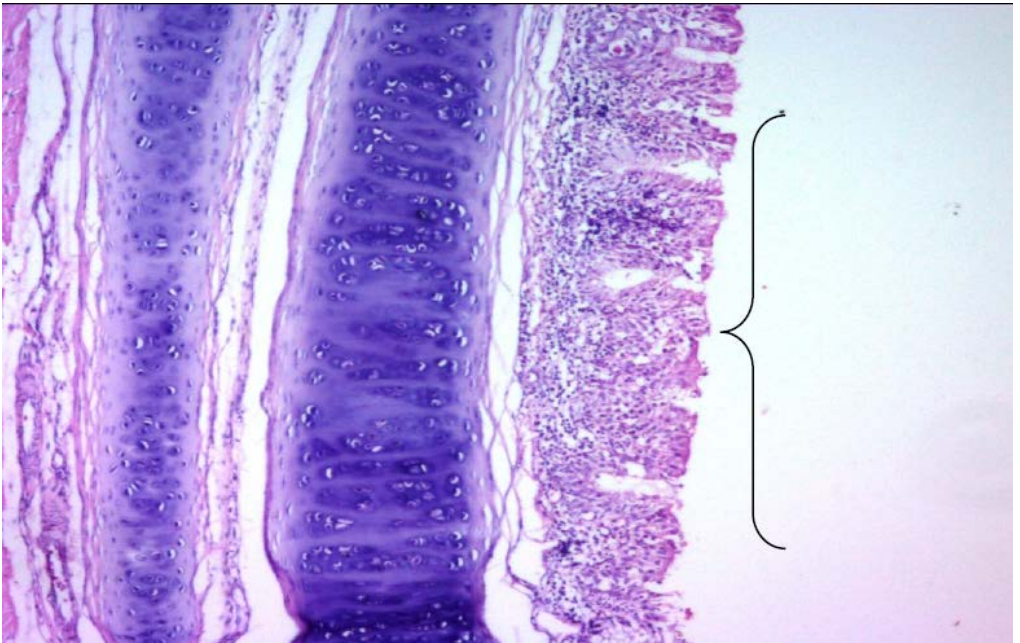
Group T1 (Infection stress induced) Bird showing pathological lesions of infection status with petechial and diffuse haemorrhages in tracheal mucosa



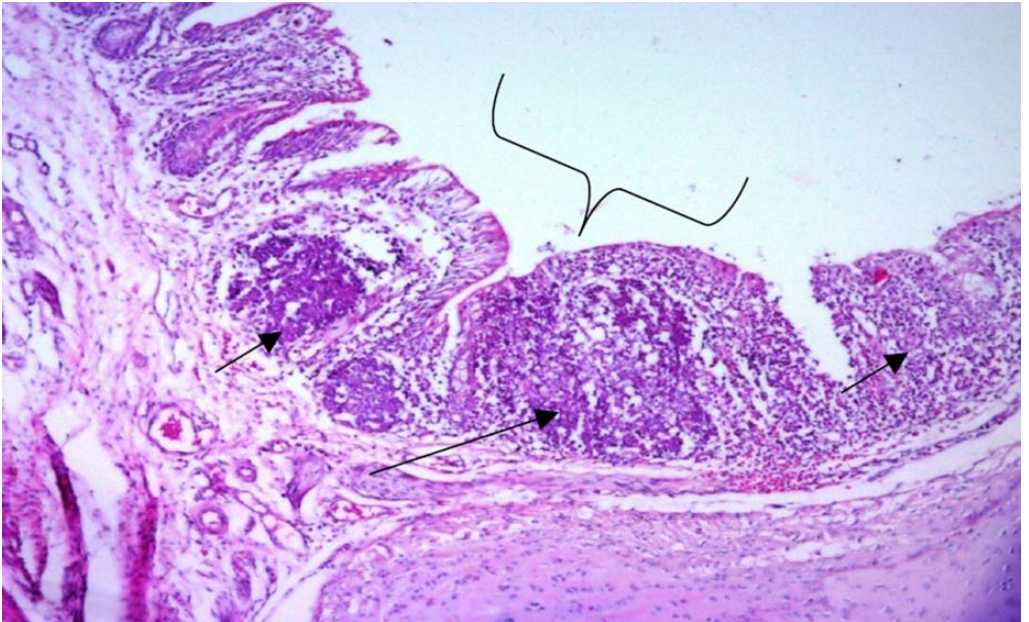
Group T2 (Treated with RESPONSE from 25 day onwards after induced respiratory stress) Bird showing minimal and focal pathological lesions of tracheal mucosa (Restoration of mucosa towards normal with minimal pathological lesions after Induction of stress)

RESTORATIVE FUNCTION OF RESPIRATORY LESIONS

- Significantly lowered respiratory stress (gasping, open beak, rales) in the RESPONSE treated groups.
- Histopathology of trachea and entire respiratory tract indicated intact epithelia and normal tissue in the group given RESPONSE.



Response treated group normal Histopathology of trachea



Birds without RESPONSE showed inflammatory lesions in trachea

HEMATOLOGY PICTURE

RESPONSE improves livability when given from day one onwards.

Groupwise observation of Mortality

Parameters	Treatments			
	T0 (Normal Control with Basal diet)	T1 (Induced Respiratory Stress)	T2 (Induced Respiratory Stress & Treatment with RESPONSE from day 22 onwards)	T3 (Supplementation with RESPONSE from first week onwards)
1.Hemoglobin (gm%)	10.1430.33	9.3430.45*	10.8230.30	10.4030.39
2.Hematocrit (%)	35.2631.16	29.7331.09*	37.6531.04	34.5031.06
3.TEC (10^6 /cmm)	3.7130.12	3.1330.11*	3.7530.11	3.6330.11
4.TLC (10^5 /cmm)	19.1430.81	18.6231.22	19.1430.81	18.7830.97

* The mean values were nonsignificant from each other for respective parameter for groups T0, T2 and T3 and were significantly low in Gr T1.

Conclusion

After using NUTRIBION as top up at different doses, better performance and economics was observed at the dose 200g in prestarter, 300g in starter and 400g in finisher when compared to the control and other groups.