Herbs improve parent flock productivity

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Mechanisation of husbandry practices for increased production has undoubtedly imposed undue stress on poultry. A tropical climate exposes poultry to severe stress and strain. The bird elicits different responses to combat stress but these can take their toll on efficiency of production and the bird's resistance to various infections.

The problem is compounded by immunosuppression caused by the indiscriminate use of chemotherapeutic agents and pesticide laden feed ingredients that often find their way into the production system.

The story does not end here as many diseases, which are known for their suppressive effect on immunity, compound the situation.

Therefore, the emphasis on the importance of stress in decreasing poultry productivity has gained an impetus during the last decade.

Scientists and farmers have, therefore, engaged themselves in relentless endeavours to minimise the stress factor in poultry operations.

Popularisation of practices to minimise human intervention, close housing systems and widespread mechanisation highlight the efforts towards achieving this goal. Yet, practices such as vaccination and transferring birds to different sheds pass on stress to poultry.

Moreover, the role of physiological stress (performance stress) in all classes of bird, especially breeders, is killing productivity and this can not be overemphasised for the following reasons – better production, low early chick mortality and reduced stress during peak performance.

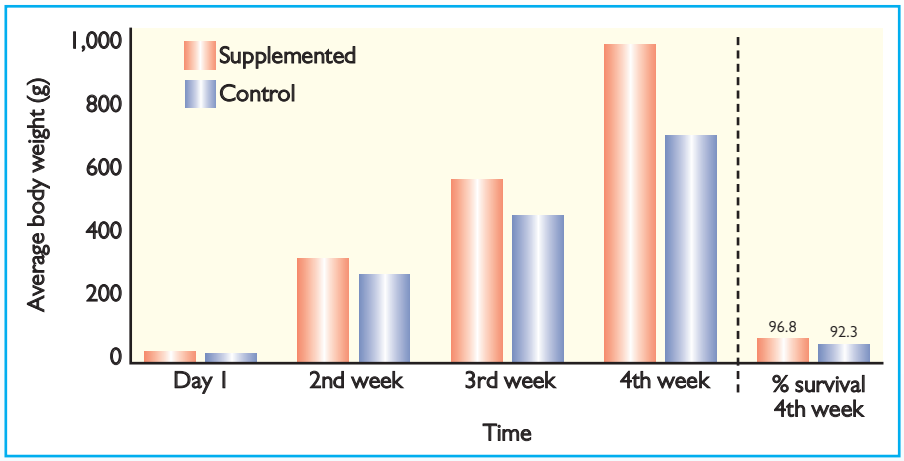

Fig. 1. The beneficial effect on average body weight of chicks when supplementation given to parent flock.

In a breeder flock, even a slight reduction in production parameters due to stress results in loss of profit margin. Therefore, keeping the birds healthy throughout their production cycle is a must.

Health of the parent flock

It is a universally accepted fact that the health of progeny is a reflection of the parents' health and a healthy breeder flock results in good quality eggs and good quality chicks. This culminates in better hatchability and better chick performance.

The stress factor not only reduces the breeding performance but also has a detrimental effect on immunity.

Therefore, the immune status of a parent bird ultimately decides the ability of the chick to combat specific and non-specific infections during the first few days of life.

Any measure, which can increase the specific (maternal antibody titre level) and non-specific resistance in the chick, would help it fight against infection and thus result in a lower early chick mortality.

Managing a breeder flock assumes paramount importance when the stress is at peak (peak production and when production is just starting to decline).

The stress at this stage is at its maximum and if it can be reduced, even by a minuscule level, it will result in better performance/sustained peak/slower decline.

Of course, the breeder flock has a genetic potential and it can not be made to surpass this set genetic upper limit.

However, the desire to reach the optimum production level is always there and, if achieved, will result in a better dividend for the farmer.

Table 1. Maternal antibody titres during and after supplementation.

Day		Maternal antibody titres Treated	Control
0	During supplementation	8922	5594
	After supplementation	8702	2190
7	During supplementation	7754.6	1554.8
	After supplementation	6972	1242
14	During supplementation	7156	958
	After supplementation	6246	906.4

Anti-stress herbs

At Ayurvet Ltd the role of health and its preservation has always been recognised and advocated.

The herbs that combat stress, such as Withania somnifera, Mangifera indica and Ocimum sanctum, appear to have a corticosteroid sparing effect and are able to pro-

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tect the animals from unfavourable stress conditions.

These herbs are known for their anti-stress activity and have exhibited significant activity in widely different stress conditions.

Another harmful effect of stress is the production of free radicals such as lipids peroxide, hydrogen peroxide and superoxide.

It causes tissue injury pushing the system into a vicious cycle of reactions leading to the release of more free radicals, thus, causing further damage, which is potentially detrimental to poultry production profits.

The active principles present in herbs like Emblica officinale can be very good at reducing losses by preventing the production of free radicals along with scavenging already produced free radicals.

Ayurvet has made an attempt to validate the effect of these herbs in reducing stress in breeder flocks through a series of scientific and field trials especially during the declining phase of production when stress is considered to be at its greatest.

The results received were quite encouraging and the following benefits in the parent flock were seen:

- Improved egg production.
- Improved hatchability.
- Less egg rejection.
- Better vaccination response.
- Better non-specific resistance.

The benefits to the chicks included:

Hatch/duration	Treatment	Early chick mortality (%)	NDV titre log2
Hatch I	Control	2.11	5.00
(2nd week after supplementation)	Supplement	1.63	6.43
Hatch II	Control	2.18	4.93
(3rd week after supplementation)	Supplement	0.60	6.80
Hatch III	Control	2.03	5.00
(4th week after supplementation)	Supplement	0.00	6.87
Hatch IV	Control	1.78	4.80
(5th week after supplementation)	Supplement	0.00	6.80
Hatch V	Control	2.74	4.53
(6th week after supplementation)	Supplement	0.79	6.47

Table 2. The beneficial effect on early chick mortality when supplementation given to parent flock.

- Better maternal antibody titre.
- Better non specific resistance.
- Better survival.
- Less disease outbreak.
- Better weight gain.

In trials it was shown that a herbal anti-stress supplementation in the parent flock also influenced the performance of the chicks produced from them.

The maternal antibody titre against infectious bursal disease in chicks at day one, seven and 14 were better than in the chicks of the non-supplemented group (Table 1).

Body weights at day one and in the second, third and fourth week were also better in the chicks from the treated group compared to the control.

The percentage survival at four weeks also showed an improvement over the control group (Fig. 1).

Thus, a positive effect was seen in the breeder flocks during the declining phase of their production.

It was found that the formulation is able to stop rapid decline in the production parameters in the parent flock.

A lower early chick mortality was another significant finding (Table 2). ■