

# Brief Report

## Studies on broiler chicken performance as influenced by feeding diets containing Bt cottonseed meal

(Inter institutional collaborative research project between Central Avian Research Institute, IZATNAGAR and Central Institute for Cotton Research, NAGPUR)

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A study was conducted to evaluate and compare the feeding value of diets containing cottonseed meals obtained from two types of cotton seeds i.e. transgenic Bt and non-Bt procured from Central Institute for Cotton Research, NAGPUR on broiler chicken performance and carcass yield in a 7 weeks feeding trail. Both types of cotton seeds i.e. transgenic Bt and non –Bt were first processed for solvent extraction to obtain solvent extracted cottonseed meals (CSM). Day-old broiler chicks (n=160) were divided into 16 groups of 10 each. Three experimental diets (iso-nitrogenous- 23% and 21% CP and iso-caloric- 2900 and 2950 kcal ME/kg for 0-4 and 4-7 weeks for starting and finishing phases, respectively) were formulated. Diet D<sub>1</sub> was a typical corn-soybean meal based control diet. Two more diets were prepared by incorporating 10% each of Bt CSM (D<sub>2</sub>) and non-Bt CSM (D<sub>3</sub>) in the control diet. Each dietary treatment was offered to four replicated groups of birds from day old to 7 weeks of age. The birds were reared in battery cages with group wise brooding, feeding and watering facilities. All management and vaccination practices were kept identical for all the dietary treatments. Birds were weighed at weekly intervals and data of feed intake were also recorded simultaneously. At the end of 7<sup>th</sup> week of age, 8 birds per treatment (2 birds/replicate) were sacrificed to study the effect of feeding CSM types on different carcass traits and development of digestive and immune organs.

The results of the study revealed that the body weight gain and feed conversion efficiency, did not differ statistically (P<0.05) either at starting (0-4 wks), finishing (4-7 wks), and overall (0-7 wks) phases. However, the feed intake was found to be significantly (P<0.01) higher during starting (0-4 wks) and overall (0-7 wks) phases in chicks fed non-Bt cotton diet than the other diets. The Protein and energy efficiencies of experimental diets fed to broiler chicken also remained statistically similar. The carcass traits (% of live weight) of broilers (blood loss, feather loss, dressed yield, eviscerated giblet, ready to cook yield and abdominal fat), cut up parts (breast, drum stick, thigh, back, neck, wings) and digestive and immune organs weights (heart, liver, gizzard, spleen, bursa) also remained statistically (P<0.05) similar due to various dietary treatments.

It is concluded that the solvent extracted transgenic Bt cottonseed meal can be included safely up to 10% in maize- soybean meal based broiler diet up to 0-7 weeks of age.

**Key words:** Broiler chicken, performance, carcass traits, transgenic Bt cottonseed meal

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