ANALYSES OF MYCOTOXIN-INDUCED JUVENILE-GROWTH DEPRESSION AND MORBIDITY HALLMARKED IN PEKIN DUCKS FROM VARYING LEVELS OF NATURALLY-ARISING DIETARY TOXICOSIS

S.K.Mishra, D.Kumar, B.K.Swain, P.K.Naik, A.K.Jha and P.K.Subudhi**,**

ICAR-CARI, Regional Centre, Bhubaneswar, India- 751003

**ABSTRACT**

Organizing duckery for livelihood improvement in Coastal Indian states, using Pekin ducks, popular for meat and eggs, in backyard on locally-available feed emerges as major challenge for poultry scientists due to risk of mycotoxins, especially from high temperature and atmospheric-humidity. An investigation was conducted to characterize some juvenile-growth depression and high-morbidity in raising a large Pekin-population (N=3067), that was inadvertently exposed to chronic-low-levels of naturally-arising dietary-Mycotoxins (Aflatoxin-B1 often detected in 1.5-15ppb range), with no other infectious-causes established) despite standard healthcare and diagnostics, across 15week's growing). Eight consecutive hatches, raised during November-March 2017, were studied for their concomitant-dip in Juvenile-growth; morbidity-spurt, characteristic of duck's-Mycotoxicosis, revealed from Post-mortem/histo-path too. While liveweight at 4&6 weeks ages were heavily-compromised, affected-ducks grew slowly beyond 10weeks ages, exhibiting large-erratic variances. The 6week straight-run-liveweight ranged from1657 to 1821grams across hatches, with respective C.V in 8.0-15.8% range. Overall phenotypic-variances remained high and erratic for 4&6 week's liveweight, coinciding fluctuations in Aflatoxin from 5 to 12ppb levels. The morbidity was more pronounced in later-hatches (5th-8th) which were coincidental to mixed-mycotoxin's detection (1.5-3.0 ppb ochratoxins detected, besides ~12ppb-Aflatoxin). Mortality was in range:16-20%/week during 3rd-6th weeks age, beyond which, weekly-mortality lied at 1.5-8.0% range, through both 1-4 weeks and 8-12weeks. Despite best counter-toxin measures; health supplementation, the flock experienced ≥50.0% mortality, which could likely be attributed to overall-immunity-breaks, beyond its standard/uniform preventive-healthcare. It was concluded that: for successful Pekin duck-raising in tropics, careful designing of anti-mycotoxic feeding-regimens were paramount for preventing losses as witnessed in Coastal Indian conditions.

ICAR's CARI regional Centre at Bhubaneswar, Odisha (India) during period: Mid-November 2016 to Mid-March 2017, that corresponded to the Winter prevalent in the City characterized by mini - Maxi Ranges: 21o C to 33oC (mean ambient temperature) and 55 - 67% range of mean Relative Humidity. All ducklings were reared under a uniform feeding conditions: a chick- mash (replaced with a grower mash from age of 8weeks onwards) respectively, with C.P and M.E ranges: 22 to 18 % CP and 2800 to 2600- Kcal ME/Kg respectively. The flock started showing heavy mortality during mid Decmeber 16 which continued till Feburary 2017, with having the peak of mortality in Mid-Jan 2017. The range of daily mortality remained from 0.42 to 4.01% during mean age of 0 to 12 weeks of growth, with cumulative mortality over hatches ranging from 46.7% to 77.3% during 12 weeks of growth. The mortality typically peaked from age of 2.5 weeks of age till 5.0 weeks of mean age of a duckling, after which it tended to slow down leading to near-ceasation of the same by 10 weeks of age and beyond.