

Water proofing of paper by corn protein

The protein, zein is found in the corn kernel. It was isolated as a zein-lipid mixture from ground corn. Unlike other corn proteins, which are water soluble, zein repels water, making it an ideal coating material. The zein coating would be suitable for most packaging material requiring water proofing such as boxes for perishable fruits, vegetables, or fish [Parris, *Agric Res*, 2001, 49(3), 23].

Poultry

Add lactic acid to chicken's drinking water and reduce *Salmonella* infection

Food poisoning after eating chicken is sometimes due to the presence of *Salmonella* which causes diarrhoea, vomiting and also death. To reduce this infection from its beginning is necessary in chicken's care in poultry. By adding 2 tablespoons of lactic acid to 5 litres of the chickens drinking water has been found effective in reducing *Salmonella* by 41.5 per cent in one organ of the chicken called the crop (a part in chickens esophagus) and by 11.2 per cent in the ceca (the pouch connected to the large intestine) compared to birds drinking plain water. Lactic acid acidifies crop contents, making them less favourable to bacterial growth. This simple inexpensive technique has been reported to be very useful to reduce one of the worst food borne pathogens in poultry [McGraw, *Agric Res*, 2000, 48(11), 20].

Reduce feed consumption but not egg number

Increasing price of poultry feed and maintaining daily production of egg has become a matter of consideration. By taking certain tips from veterinary scientists, feed consumption can be reduced without affecting egg production. Manipulation of two factors namely the house temperature and the bird's activity, the daily feed consumption can be changed. A house temperature of 20°C does not have adverse effects on production performance. With a diet containing 3000 Kcal ME/kg, the daily feed consumption can be expected to reduce from 100g/bird to 90g/bird/day when the house temperature increases from 70 to 80° F (21°C to 27°C). Using red lights with an intensity of about 4-5- foot candle at the bottom row is effective in reducing the bird's activity. Ultimately the daily energy requirement also goes down. Mechanical feed wastage should also be reduced [Sakunthala Devi, *Pashudhan*, 2000, 15(12), 3].

Utilizing broiler litter for ensiling non-leguminous fodders

To make use of poultry litter in animal feed and to increase N content in cereal forages and grasses, ensiling with broiler litter has been found economic.

Broiler litter obtained from commercial broiler house was sun dried, ground and stored for silage making. The maize fodder chaffed into 2-3 cm pieces was utilized for experiment. During silage making dried broiler litter (30% of dry matter) and cane molasses (6% of dry matter) was added to chaffed maize fodder silage. A control silage without litter was also prepared by using 6% of DM molasses. These silages were kept in silo pits lined with polythene. To determine chemical changes during ensiling, about 1 Kg of the material from both silage treatment was sealed in a number of polythene bags after removing the maximum air. These silage bags were also ensiled in one corner of the silo pit and covered to maintain anaerobic condition. After 5 days chemical analysis was done and observed that in addition to several changes total N content of the silage containing 30% poultry litter was higher due to the high N content of the litter. Thus a stable silage can be prepared with increased N content by adding poultry litter up to 30% in non-leguminous fodder (Srinivasulu *et al*, *Indian Vet J*, 2001, 78, 223).