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Management Strategies for Optimal Performance of Scavenging Poultry

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Editorial

The first attempt to determine quantity of SFRB in the free range system was done in south-east Asia. This method requires weighing the amount of household refuse from each family per day for a specific period of time and the proportion of the household leftovers determined from the crop content of a bird slaughtered after scavenging. However for precise estimates of SFRB, each family should have access to the household refuse and environmental feed. This approach helps to determine the quantity of SFRB required by each family flock per unit time. The contribution of household refuse and environmental feed to the total SFRB can easily be determined by examining the feed components in the chickens' crops at different times of the day. This estimate however, does not show the proportion of the SFRB available to each individual bird category in the family flock. Because of the variations within the family flocks due to age-group and sex; and because of competition for the SFRB in a communal scavenging condition, estimation of the SFRB on the basis of bird category such as cocks, hens, growers and chicks is more appropriate. In this case, any differential access to the SFRB by chicks, growers, hens and cocks in the family flock can be easily assessed.

This could be due to the fact that the amounts of nutrients supplied by the SFRB are generally too low for optimal growth of chicks and growers. Thus the low survival rates of chicks and growers reported in Africa and south-east Asia during a pre-weaning period could be greatly improved by providing them with small amounts of supplements.

Determination of nutritional values of SFRB might help to develop appropriate feeding and management strategies for optimal performance of scavenging poultry. The nutritional values of SFRB as shown by the chemical composition of the crop and gizzard contents from scavenging birds, demonstrate the presence of some variations.

The present review shows that most of the poultry in developing countries in particular Africa is found in traditional sector. These poultry play an important role in supplying the local people with additional income and high-quality protein food. Under traditional sector, four poultry management systems can be distinguished where free-range and backyard systems are mostly practiced by rural households.

In the humid tropics, maize is grown as an early and late season crop. The early crop is planted at the onset of the rainy season before the rains are fully established, however, the late season crop is planted during the short second cycle of rains, a sowing which terminates in terminal drought. There are sharp variations in soil water and thermal regimes in the early part of the rainy season (early vegetative phase of maize growth) and in the later part of the late cropping season (terminal drought situation). These episodes of extreme events could impose different degrees of drought stress conditions on the crop and affected growth duration, plant size, dry matter production; assimilate reserves and partitioning to grain in crops. In plants, hydrothermal sensitivity of physiological processes Stem Water Soluble Carbohydrate (WSC) is a useful trait and could provide indication of potential drought resistance in crop species and cultivars under diverse growing environments. Water deficit during the grain filling period enhanced senescence could lead to increased remobilization of WSC stored in vegetative tissues to grain. Stem sugars contribute to grain yield under irrigated conditions while Water Soluble Carbohydrate (WSC) concentrations are reported as a reliable indicator of grain yield under drought. A significant proportion of WSC reserves were translocated to seed in wheat under drought. Therefore, analysis of genotype performance under field conditions is basic to understanding environmental effects on crop growth at various cropping seasons and the ultimate performance of a cultivar. This understanding is of utmost importance in the strategies to improve genotypic adaptation and hence the productivity of crops in drought prone areas where varying degrees of soil moisture deficits are encountered at some stages of crop growth/cycle.

It was postulated that traits such as biomass accumulation, leaf area development and capacity for assimilate reserve which are important to growth and yield formation are affected by genotypic potentials of maize cultivars under variable soil water and thermal regimes of the rainy and late sowing seasons. Experiments were therefore conducted to evaluate differences in genotypic attributes (such as shoot biomass and seed yield and on leaf tissue concentrations of chlorophyll a and b and water soluble carbohydrate) which are relevant to performance and adaptation in ten maize cultivars grown on the field in the rainy and in the late (terminal drought situation) planting seasons in a humid zone of Nigeria. This information may contribute to the expansion of cultivation and profitability of maize production in the humid south of Nigeria and elsewhere in Africa.

Two scenarios of balance between demand for and supply of water is presented in the humid rainforest zone of Nigeria (site of study). Therefore, the growth, development and yield potentials of ten maize cultivars grown in the rainy and the dry post-rainy (late) season cropping opportunities were studied in 2001 and 2002. Cultivars were chosen on the basis of contrasting growth duration (anthesis/silking dates) and the possibility of differences in stem WSC concentrations and hence grain yield formation in ten maize cultivars under the circumstances of the prevailing episodes of weather events of the rainy and late cropping seasons.