

The role of poultry in human nutrition

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Chicken meat and eggs are the best source of quality protein, and are badly needed by the many millions of people who live in poverty. In sub-Saharan Africa (SSA) and South Asia malnutrition (poor nutrition) and undernutrition (inadequate nutrition) are closely associated with poverty. These conditions affect the immune system. The HIV/AIDS epidemic sweeping through countries in SSA stems partly from extreme poverty and, with it, poor nutrition.

WIDE VARIATION IN CONSUMPTION OF POULTRY MEAT AND EGGS

A recent survey of several countries found that 34 percent of the people surveyed in South Asia and 59 percent in SSA were suffering from severe energy deficiency (Smith and Wiseman, 2007). Both groups obtained 67 percent of their energy from staple foods (cereal grains, grain legumes, starchy roots and tubers) containing small quantities of only low-quality protein. Their average per capita egg consumption was only 42 per year, compared with a global average of 153. Stunting and wasting in children under five years of age, and slow mental development were seen mainly in rural areas of SSA. Eight out of ten of those affected were among the poor. Diseases such as kwashiorkor and marasmus, both seen in underweight children, are associated with inadequate dietary energy and protein. Pregnant and lactating women and young children are particularly vulnerable.

In SSA, only 8 percent of dietary energy comes from animal protein, compared with an average of 17 percent in all developing countries, and 28 percent in China.

CHICKEN MEAT AND EGGS: A VALUABLE SOURCE OF PROTEIN AND ALMOST ALL OF THE ESSENTIAL NUTRIENTS

Chicken meat and eggs provide not only high-quality protein, but also important vitamins and minerals. Worldwide, 2 billion people depend on rice as their staple food. Most eat polished white rice stripped of many essential fats, the B complex vitamins and several minerals. Other cereal grains are usually deficient in critical nutrients. For example, maize (corn) is a staple food in some regions, but the niacin it contains is unavailable. Maize consumption without supplements causes pellagra. Invariably the protein content of grains is low and of poor quality. Net protein utilization (NPU) is an index of protein quality, calculated by multiplying protein digestibility by biological value. NPU of grains is generally less than 40. Rice is the exception, with NPU of about 60, but it is low in protein (7.5 percent). NPU of chicken eggs is 87. Generally, cereals lack the most important amino acids for humans – lysine, threonine, the sulphur-bearing amino acids (methionine and cysteine) and occasionally tryptophan. Eggs and chicken meat are rich in these essential amino acids.

Eggs are also high in lutein which lowers the risk of cataracts and macular degeneration, particularly among people living in developing countries.

In the least developed countries, the projected increase in egg consumption between 2005 and 2015 is 26 percent, compared with only 2.4 percent in the most developed countries (Windhurst, 2008). Corresponding annual projections for poultry meat are 2.9 percent and 1.6 percent, respectively (FAOSTAT).

ADVANTAGES OF CHICKEN MEAT AND EGGS COMPARED TO OTHER ANIMAL PROTEINS

In developing countries, the diet of people living in cities usually contains more animal protein than that of rural people, mainly because urban people are more prosperous, but also because they generally have access to a wider variety of foods at local markets. In low-income countries, commercially produced chicken meat is well placed to satisfy the demands of a rapidly increasing affluent, middle class who can afford to pay for broiler chickens. Facilities and infrastructure for producing broiler chickens can be established quickly and soon start generating. Not only is chicken meat seen as a healthy meat, but it is also the cheapest of all livestock meats.

A major advantage of eggs and poultry meat as human food is that there are no major taboos on their consumption. In addition, a chicken provides a meal for the average family without the need for a refrigerator to store left-overs. Meat from other livestock such as pigs and cattle is kept mainly for special festive occasions and celebrations, partly because of a lack of storage facilities (no refrigerator or electricity supply). Eggs can be purchased relatively



Most eggs that are consumed in developing countries are produced by commercial layer breeds



Consumption of duck eggs is popular in Southeast Asian countries

cheaply and in small numbers. One egg is almost a meal in itself and when hard-boiled will last for several weeks. It can be taken to school safely by children for lunch.

SCAVENGING CHICKENS PROVIDE CHEAP EGGS AND MEAT

Scavenging family poultry provide much-needed protein and income, and contribute to food security for many families living in poor rural regions of developing countries. The eggs and meat produced by their own or neighbours' small poultry flocks are the only eggs and poultry meat that the majority of these families are

ever likely to eat. This makes family poultry increasingly important as the world's population pushes towards 7 billion people. Furthermore, it is not difficult to improve the nutritional value of the egg, to become a functional food.

CONCLUSIONS

Poultry has a major role to play in developing countries. Produce is relatively inexpensive and widely available. The commercial poultry industry provides employment and is growing rapidly. To produce 1 kg of meat from a commercial broiler chicken only about 1.7 kg of feed is needed. Poultry production has a less detrimental impact on the environment than other livestock, and uses less water. Semi-scavenging backyard indigenous poultry are extremely important in providing income and high-quality protein in the diets of rural people whose traditional foods are typically rich in carbohydrate but low in protein. The vexed question of the cholesterol content of eggs and human health seems to have been exaggerated.

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