Improving Backyard Chicken Production

ECHO Inc.

"Probably more people are directly involved in chicken production throughout the world than in any other single agricultural enterprise," according to Dr. John Bishop, a poultry specialist who has worked extensively in Latin America and Africa to improve the production of traditional smallfarm poultry. Maintaining and improving the productivity of backyard chicken flocks is important for the wellbeing of rural families.

Backyard producers value chickens for their adaptability, contributions to the family's income and nutrition, and for insect control and fertilizers in the garden. In most family flocks, chickens scavenge plant or food residues and insects around the home. With minimal care, they can hatch and raise chicks, produce highvalue meat, and give eggs which meet a strategic nutritional need of children. Live chickens sold for meat bring a good price and are a primary source of household income. (This is why "new" fowl are not always quick to catch on in village settings: farmers raise chickens because they sell easily in markets not primarily for home use or egg production and it would be harder to sell more unusual birds.)

"The efficiency of backyard animal production lies in the fact that it utilizes excess family labor and surplus on-farm feed" with few purchased inputs, so income from sale of the chickens is virtually all profit. High-input, large-scale poultry systems are obviously not suitable for family flocks, and even "transitional" systems of 200-300 birds which apply large-scale technologies (such as hatchery breeds, balanced feeds, and artificial lighting and brooding) to small farms are rarely successful.

It is extremely difficult for families to maintain flock numbers and replace birds which are lost or sold if they cannot produce chicks on their farm. Buying replacement chicks from a hatchery is expensive and can be disastrous for household chicken production. Hatchery birds may require artificial incubation, disease control measures, or special feeds not available on the small farm. All these effects are serious for the farm family, but the loss of hens' broodiness (readiness to set on eggs for hatching) is particularly serious.

When hatchery roosters cross with traditional hens, flocks can lose their ability to hatch and raise chicks in just one generation. In Ecuador, for example, the commercial hatcheries surrounding the cities may "dump" their extra birds (mostly roosters) in rural areas at low prices. While traditional ('criollo') hens are selected for broodiness, superior egg-laying hatchery varieties are not broody or show only incomplete broodiness, such as laying eggs but not setting consistently. This can

quickly make the farmer dependent on buying incubated hatchery stock, which may not perform well in backyard conditions. People who substitute them for criollo birds may have little success with incubator hatching methods in areas of erratic electricity.

Farmers who have encountered this problem learn quickly. Dr. Bishop told of a worker in the Amazonian region of Ecuador who was improving a flock to share with local indigenous farmers. When the farmers saw one white bird they said, “We don’t want to contaminate our flocks.” They then told how a specialist gave them “superior” white roosters, and they had to get rid of their flocks and start over with chickens from tribes that had not participated. Broodiness is a key link in the smallscale poultry production system, since the producer sells hens, not eggs. Of criollo birds in a backyard management situation, only one third of a flock usually lay each day; one third laid the day before, and the other third are setting or caring for chicks.

Dr. Bishop suggested that development projects make it their policy to avoid dealing in hatchery birds (even traditional breeds like Rhode Island Reds have lost most of their ability to successfully hatch eggs) and purchased feeds. He named the following key elements for economically viable family poultry production. (1) Use small-scale production systems with low purchased inputs and minimized risk. (2) Choose appropriate breeding stock which can incubate and brood replacement chicks by natural reproduction. (3) Apply the fundamental pest and disease control practices outlined below.

Basic, inexpensive disease control markedly increases the survival and productivity of a family flock. Traditional chickens that are vaccinated and treated for common infections and parasites are usually hardy enough to thrive in backyard conditions. The following four preventive practices, given every three months, will eliminate most health problems in poultry flocks: vaccination in the eye for the Newcastle disease virus (which is highly infectious and can kill the whole flock), deworming for roundworms and tapeworms, dusting under wings for irritating external parasites such as lice, and treatment for chronic respiratory disease which lowers production.

As for nutrition, the main limiting factor in traditional production is inadequate energy in the feed available to backyard birds. Scavenging chickens can usually fulfill their protein, vitamin, and mineral requirements, but are unable to obtain sufficient energy for adequate growth and egg production. Small amounts of supplemental grains such as corn can yield impressive results in weight gain and egg production. It is often more profitable to convert surplus grain into eggs and birds for sale than to sell the grain directly, since in many areas a chicken sells for more than a whole sack of corn.

Consider a permanent flock stabilized at 12 adult hens and one rooster. The farmer could let one broody hen set per month with 1012 eggs and thus produce at least 4 replacement chicks per month, after losses in incubation and brooding. A hen takes about 4 months to raise her chicks, so at any given time about 4 of the 12 permanent hens would be caring for chicks, leaving the other 8 hens for egg laying. Without supplemental energy feed, the farmer would probably only get 2 eggs per day. By feeding the twelve hens one pound of corn per day, the 8 laying hens will

give an average of 4 eggs per day. This system would produce 4 replacement chicks and about 10 dozen eggs per month. For the farmer, the broody hens likely earn more by raising 4 chickens for sale than the value of 4 months of eggs.

Dr. Bishop says that where the traditional flocks have disappeared or are being eroded, it is necessary to establish multiplier flocks of appropriate breeding stock which can naturally incubate and brood replacement chicks.

Cite as:

ECHO Staff 1995. Improving Backyard Chicken Production. *ECHO Development Notes* no. 50

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