UNIVERSITY of IDAHO

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BROILER and fryer production in the United States increased from 34 million birds in 1934 to slightly over 1 billion in 1954. Idaho produced approximately 1.5 million broilers in 1954, double the number raised 5 years before. Several favorable factors account for this phenomenal expansion:

Red meats were scarce during the war.

Commercially-raised, high-quality broilers have replaced farm-raised cockerels.

Breeds have been improved.

Rations are more efficient. There is greater efficiency in the use of feed.

New equipment saves labor.

Furthermore, the improvement in the processing and merchandising of high-quality, soft-meated fryers pleases consumers.

In the future, however, broiler growers must expect increased competition. Red meats are available in greater volume at reduced prices.

Commercial broiler production is a highly specialized enterprise. Margin of profit per bird is small. Major costs are for feed, chicks, and labor. Efficient management, high efficiency in feed utilization, and favorable market outlets are necessary for success. An increasing number of growers are processing their own birds as a means of increasing their margin of profit.

What are Broilers?

A broiler is a tender, soft-meated bird weighing about 3 pounds at 10 weeks of age. Less than 10 pounds of feed should produce such a bird.

Breeds Suitable for Broilers

Our most popular breeds are broiler-strain New Hampshires and White Plymouth Rocks. Some of the popular crosses are: Cornish by New Hampshire, Delaware by New Hampshire, and White Wyandotte by New Hampshire. White-feathered breeds and crosses which are predominantly white are becoming increasingly popular. Processors like the white birds because they eliminate the problem of dark pin feathers.

Regardless of the breed or cross, to make good broilers we must have **fast growth, early feathering, economical gain, and high livability**—along with **good fleshing** and a **meat-type body.**

Types of Rearing

Floor rearing is the common practice. It is less expensive than battery rearing. You need more floor space per bird, but you do not have the expense of additional equipment. Each bird in a floor-rearing operation needs ¾ square foot of floor space. More is desirable. Coccidiosis is the greatest disease hazard.

Battery rearing is a more

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levels to eliminate the necessity of adding liver meal and some vitamin supplements. Feed no whole grain. To cut feed costs to a minimum, reduce the protein content of the broiler feed after 6 or 7 weeks. This is done by reducing the soybean oil meal 100 pounds and increasing one of the grains by 100 pounds per 1,000 pounds of mash. The resulting feed will contain 17.5 to 18.0 per cent protein.

Feeding one of several antibiotics, such as aureomycin, penicillin, or terramycin, will increase the growth rate of your broilers up to 10 per cent. Antibiotics should be fed at the amount recommended by the manufacturers. Feed efficiency is increased, mortality is reduced, and more uniformly developed broilers will result.

Figuring Cost of Production

The cost of producing broilers or fryers is your guide to profits. The factors responsible for costs are feed, chicks, labor, buildings and equipment, supplies and interest. An efficient operator keeps constant watch to detect leaks in any of these items.

Figures resulting from studies of the broiler industry in several states show that feed averages about 65 per cent of the total cost. The percentage range for feed is 60 to 70. Chicks account for 18 per cent on the average, with a range of 16 to 21. Labor is 8 per cent of the total cost. The range for labor is 7 to 10 per cent. Buildings and equipment average 4.3 per cent, with a range of 3 to 5. Supplies are 4 per cent, with a range of 3 to 6. Interest is 0.7 per cent on the average, and ranges from 0.6 to 1.

The two major factors for efficient production are high-quality feed and a good broiler strain of birds.

Several formulas have been developed from actual surveys of many broiler operations as an aid in figuring your cost of production. The following is an example: THREE *times* YOUR FEED COST *plus* 0.33 *times* THE CHICK COST *plus* 3.0 *equals* COST IN CENTS PER POUNDS OF MEAT. The various factors are arrived at as follows:

3=pounds of feed required to produce 1 pound of meat.

0.33=a constant figure adjusted to allow a 5 per cent loss.

3.0=a constant figure includes building, supplies, drugs, etc.

Now, using these figures, we can arrive at the **cash** cost of producing 1 pound of broiler meat. **This does not include labor.** This example figures feed at 5½ cents per pound and chicks at 16 cents each.

3	x	5.5	=	16.5 cents
0.33	x	16	=	5.3 cents
3.0 (constant)			=	3.0 cents
				24.8 cents per pound

The price you can get at your market will determine whether broiler production will be profitable. It is advisable to locate a market before starting a broiler business.

With a satisfactory market, the key to profitable broiler production lies in **good management** and **chicks bred for meat production, low mortality, rapid growth, and efficient feed conversion.**

Suggested High Efficiency Broiler Rations

Ingredient	Ration 1 100 lbs.	Ration 2 100 lbs.	Ration 3 100 lbs.	Ration 4 100 lbs.
Ground corn	60.0 lbs.	60.0 lbs.	60.0 lbs.	50.0 lbs.
Fine ground oats	10.0	10.0	10.0	10.0
Ground barley	....	....	....	10.0
Dehyd. alfalfa meal	2.5	2.5	2.5	2.5
Herring fish meal	7.5	5.0	2.5	5.0
Meat meal	7.5	10.0	10.0	10.0
Soybean oil meal	12.5	12.5	15.0	12.5
Riboflavin supplement (500 units per gram or equivalent)	0.5	0.5	0.5	0.5
Limestone or shell flour	1.0	1.0	1.0	1.0
Iodized salt	0.5	0.5	0.5	0.5
Manganese sulfate	½ oz.	½ oz.	½ oz.	½ oz.
Fish oil (300D-1500A)	0.25	0.25	0.25	0.25
or				
Dry D (1500 units per gram)	1 oz.	1 oz.	1 oz.	1 oz.
Antibiotic supplement—(Use according to manufacturer's directions.)				

CO-OPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS,
UNIVERSITY OF IDAHO, COLLEGE OF AGRICULTURE, AND
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COOPERATING

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specialized type of operation than is floor rearing. Cost of buildings and equipment is greater. Respiratory diseases and cannibalism are more difficult to control. There is more trouble with slipped tendons and breast blisters that reduce the market value of birds. The advantages of battery rearing are: less floor space, easier control of coccidiosis, a simpler feeding program, and elimination of the litter-management problem.

Good brooding practices essential for livability and growth are the same as for raising your replacement stock. This information is given in University of Idaho Extension Bulletin No. 196, "Brooding and Rearing Pullets for Profitable Layers." You can get a copy from your county agent.

Diseases

Disease losses are the greatest challenge to success. Not only death loss, but often inferior stock results from disease. You can keep the flock healthy by practicing good sanitation and preventive measures. Thoroughly clean and disinfect the brooder house and equipment between broods. Avoid introduction of disease by keeping out visitors and equipment from outside sources. Early diagnosis and immediate treatment are important when an outbreak does occur.

Coccidiosis

This disease causes heavy losses to the broiler industry. It not only causes death losses but results in slower growth, decreased feed efficiency, and cull birds.

Good management practices are necessary in safeguarding against this disease. The litter **must be kept dry** and the equipment clean. This can be done by giving the birds plenty of room, by using watering equipment that does not allow spillage, and by proper ventilation. Remove any wet spot that appears in the litter.

Several drugs available under commercial names are used for treatment. The list includes sulfamethazine, sulfaquinoxaline, nitrophenide, and nitrofurazone. *These drugs must be used exactly as directed by the manufacturers.* Overdosage will be harmful to the birds. *Do not use a combination of these drugs.* The most satisfactory method of giving these drugs is in their water. Sick birds will drink when they will not eat. Most of these drugs are also available for use at preventive levels in the mash.

Pullorum

Pullorum disease is not the problem it was in former years, but it is wise to make certain you get your chicks from a **pullorum-free source.**

Respiratory Diseases

Respiratory diseases have become a very serious problem to the broiler industry. They are highly contagious. You can prevent their introduction by using the safeguards mentioned above. Poor ventilation and unsanitary conditions often are contributing factors.

Infectious bronchitis, Newcastle disease, and chronic respiratory disease all have similar symptoms. Therefore, a laboratory is the place for accurate diagnosis.

Infectious bronchitis is a serious disease in some areas of Idaho. Vaccine is available. It may be administered to chicks in the nostril at 10 days of age. This will protect them through their growing period. There is also a dust vaccine that combines viruses of Newcastle and bronchitis. Vaccines must be used carefully and exactly, according to manufacturer's directions. In areas where bronchitis is a problem, **bronchitis vaccination** is desirable.

Newcastle has caused serious losses in Idaho. Newcastle, like bronchitis, can be controlled by vaccination. Birds may be vaccinated when 1 day old. However, it is desirable to wait until they are about a week old. The vaccine may be administered by nostril, by eye, or by spray or dust in conjunction with control of bronchitis. Another method is to use an especially prepared form of the vaccine in the drinking water. Only in areas where Newcastle disease is a problem is vaccination recommended.

There is no specific treatment or vaccine for **chronic respiratory disease.** Varying results have been obtained by feeding high levels of some of the antibiotics.

Good management, adequate ventilation, and sanitation will go a long way toward prevention of all respiratory diseases.

Cannibalism

Cannibalism, or feather picking, may become a problem if birds are crowded, if there is not enough feeding space, or if you feed a pelleted mash alone. Debeaking is the most satisfactory way to correct or prevent the condition.

Feeds and Feed Consumption

A great deal of progress has been made in developing efficient broiler rations. The major improvement is increased feed efficiency through a reduction of fiber and a slightly higher protein content. Birds fed this type of ration make better use of their feed, and there is a resulting increase in growth rate. With its higher content of digestible units—proteins, vitamins, and adequate mineral balance—it produces more growth per pound of feed than did our old-type rations.

If any part of this new ration is left out, there will be serious feeding problems and at an earlier age than would be the case if the feed was less concentrated. The complete balance of all nutrients is very important.

A high-energy, low-fiber ration results in an over-all saving of feed. By its use, we are now able to reduce the total feeding time by 2 or 3 weeks. A 3-pound average of both sexes in 10 weeks is possible. A 3½-pound average can be grown in 12 to 13 weeks. Good feed plus good broiler-strain chicks will produce 3-pound birds in 10 weeks on less than 3 pounds of feed for each pound of weight. **The longer you have to feed your birds to get them to a desired weight, the greater will be their feed consumption per pound of gain.**

The broiler feed formulas given in this bulletin are based upon experimental work by the University of Idaho Poultry Department.

Fairly high levels of corn are necessary for best results. Fish meal is recommended at these