Round Hill Sees the Light

New Oxford-based turkey company saves big with fluorescent lighting

BY GINGER SECRIST MYERS
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NEW OXFORD — "I don't know any other turkey production company in the country that has done this much research with these types of lights." So states Steve Jones, live production manager for Round Hill Foods, Inc., New Oxford, in regards to the company's $3000 research project which compared electric usage between conventional incandescent light bulbs and screw-in fluorescent bulbs.

Round Hill is concerned about energy efficiency as a cash savings for its 39 growers. Relates Jones, "We feel it is our responsibility to find ways for our growers to cut their costs. We can't raise our contract price to them, but we can find ways for them to help their cash flow."

Another factor which prompted Round Hill to begin this research was the acquisition of 16 growers from Mandeta when that company went bankrupt. Jones relates that most of these growers had two-story chicken houses that were all power ventilated, fed and lighted. Since Round Hill has found that half of the energy cost of running a house is in the lighting, a closer look in that area seemed a logical place to start to find savings.

Round Hill's research was done on their own research farm. The tests were conducted from October 1984 to October 1985 in two separate, two-story, power ventilated turkey houses each measuring 40 by 300 feet. Both houses had two rows of lights on each floor with 38 lights per floor. One hundred-watt incandescent bulbs were used in the top floor brooder area of one house with 40-watt bulbs used on the bottom floor grow-out area. In the other building, 13-watt fluorescent bulbs were used in the brooder area and nine-watt fluorescent bulbs were used in the grow-out area. The fluorescent bulbs and the incandescent bulbs had an equal light output. The lights were on 24 hours when the birds were housed.

Round Hill had separate meters hooked to each of the houses; one to measure the total energy consumed, the other was hooked only to the lighting circuit. The meters revealed that the conventional house used 53,174 kilowatts of which 28,322 KW was for lighting only. The fluorescent house used 32,467 KW of which 7,337 was for lighting only. The fluorescent bulbs used 20,985 less kilowatts over the one-year period. If the electricity cost 10 cents per kilowatt, then the fluorescent bulbs saved the grower $2,098 annually.

Round Hill's live production manager, Steve Jones, inspects hot rock brooders. This house uses 13-watt fluorescent bulbs for light.

Using these figures, Jones pencils out a payback on the bulbs and installation of about five months. The costs incurred for the bulbs and installation was $741. Jones notes that there is a variety of bulbs and prices on the market, some ranging as high as $17 per bulb. Payback time will be influenced by the price of the bulbs initially installed.

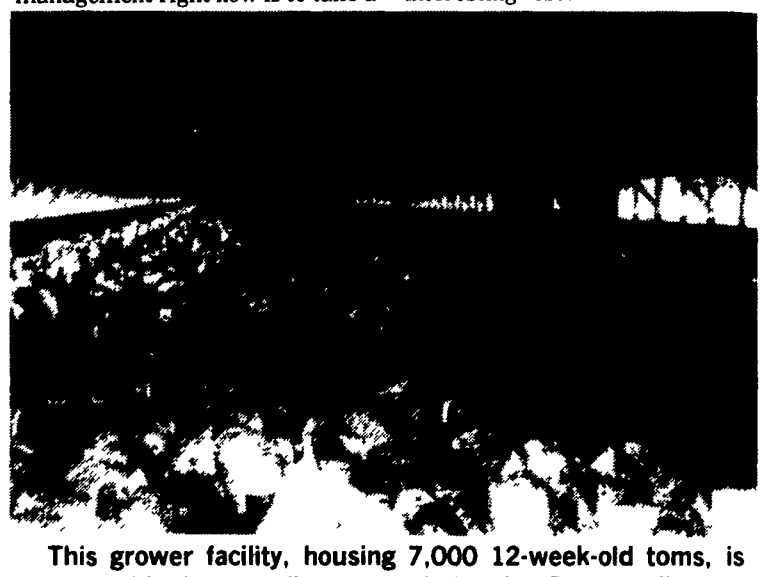
Following the release of their findings, Round Hill hosted an open house for their growers to demonstrate the lighting concept. Jones states that over half of the growers ordered similar bulbs from that initial demonstration. Though the figures speak for themselves, Jones notes that growers usually wait for more conclusive evidence before making any management change. States Jones, "The growers' initial reaction is often to wait for more proof. I can't blame them, since their cost for bulbs and installation could range as high as $1,000 to $1,500 per house."

Another incentive that is helping to encourage growers in this area to put in the fluorescent bulbs has come from Metropolitan Edison Power Company. Jones points out that their growers can take advantage of a double savings at this time since Met-Ed is giving a 10-cent credit a watt for each kilowatt of reduced usage by their customers. He points out that going from the 100-watt bulb to a 13-watt fluorescent bulb translates into a $8.70 credit per bulb.

Another energy saving project recently summarized at Round Hill was a comparison between conventional brooders versus hot rock brooders. The project was done over three flocks from August 1985 through December 1985 in which 14,000 hens were started on 12,000 square feet in a power ventilated building. There was a solid wall in the building dividing the two pens. Separate propane meters monitored each section. Using 70 cents a gallon for the cost of the propane, in each trial, the hot rock brooders were more energy efficient, saving the grower $14.70, $321, and $189, respectively. In spite of these favorable results though, Jones cautions that the hot rock brooders, because of their smaller heating capacity, will attain these kinds of savings only in a well insulated facility.

In both the lighting and brooder research projects, there was not any significant difference in bird growth performance.

What will Round Hill's next research project focus on? Jones reflects that the company is always looking into feeds and feed additives, but their next project will probably be in a different vein. States Jones, "Our greatest challenge in our grower management right now is to take a hard look at our water quality. We're not sure what affect pH, nitrates and a host of other pollutants might be having on growing birds. I think before long Round Hill will be doing some interesting research in this area."



This grower facility, housing 7,000 12-week-old toms, is lighted with nine-watt fluorescent bulbs that Round Hill found to be more efficient than incandescent units with the same light output.

Forest On Fowl

by
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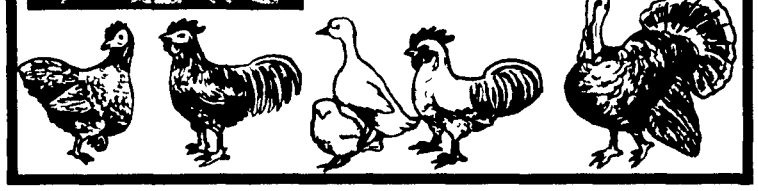

Wheat and Barley for Laying Rations

Corn is the most commonly used cereal grain in commercial laying rations in the United States. The corn is included as a major source of energy in these rations. The question of replacing corn with wheat or barley is important in Pennsylvania at certain times of the year. During harvest seasons for the small grains — wheat and barley, these grains may be competitive in price with corn and candidates for inclusion in layer rations.

Let's explore some of the changes in nutrient level and other factors resulting from the substitution of wheat or barley for corn in laying rations.

ENERGY

Barley and wheat contain less energy on a pound-per-pound basis than corn. Any substitution of corn by these grains will result in a lower metabolizable energy level in the ration. The extent of the reduction will depend on the amount of corn being replaced and the grain used. The energy content of barley and wheat averages about 80 and 90 percent, respectively, of that for corn. To maintain the same level of energy in the ration, the substitution for corn of wheat or barley should be accompanied by the addition of a high energy source such as stabilized fat. If the energy level is not maintained, the reduction in energy will result in an increase in feed intake. If facilities are not available for adding fat to the ration other alternatives must be explored.

One alternative is to allow the birds to compensate for the reduced energy level by increasing their feed intake. There are two important items with this alternative. One is that other nutrients must be adjusted to account for the increase in feed intake. The second item is the real key to the practical use of wheat or barley in laying rations. The substitution of wheat or barley for corn may result in a lower cost feed, but the increased consumption resulting from the lower energy content could yield a higher cost per unit product.

PIGMENTATION

Corn is a good source of xanthophyll which is important for the formation of yellow pigment found in egg yolk, chicken skin and fat. Since barley and wheat have no xanthophyll activity, it is important that this activity be supplied to the ration by other ingredients rich in xanthophyll, such as alfalfa meal, corn gluten meal or other sources of natural xanthophyll if the pigment level in egg yolk is to be maintained.

PHYSICAL FORM

Barley should be finely ground when it is added to the ration. Wheat, on the other hand, should be coarsely ground before being added to the poultry ration in large quantities. Finely ground wheat causes pasting problems on and around the beak which can result in the development of beak necrosis.

In summary, wheat and barley can successfully be used to substitute for a portion of the corn in layer rations. The prime consideration should be that these grains are competitively priced with corn Any substitution however, should be accompanied by necessary adjustment in the ration to ensure that all nutrients meet established requirements

NCA President to Address Cattlemen's Field Day

HARRISBURG — Farm tours, beef-industry related seminars and an address by the president of the National Cattlemen's Association highlight the 14th annual Cattlemen's Summer and Pennsylvania Simmental Association Field Day July 19 at Rolling Ridge Farms, just off State Route 38 near Karns City, Butler County.

The event, which runs from 9 a.m. to 3 p.m., will provide visitors with firsthand knowledge of land reclamation techniques used to rejuvenate the 700-acre farm of Harold and Rose Schneider, hosts of the field day.

A tour of the Schneider Farm features a look at the couple's 100 Simmental cow operation and an explanation of embryo transfer techniques they employ to maintain superior genetic quality in their herd. Rose Schneider, recipient of the 1982 Pennsylvania Cattleperson of the Year Award, oversees the farm's breeding and animal health programs, while her husband supervises other aspects of the operation.

In addition, important information on forage conservation and intensive forage-beef management systems, expansion of consumer promotion, educational and nutritional programs will be provided.

Don Butler, president of the National Cattlemen's Association and an Arizona cow-herd operator, will be the speaker at a special luncheon He will address cattlemen's concerns about economic and production issues that affect the profitability of the beef industry.