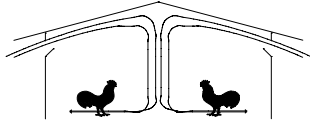




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Poultry Housing Tips

Tunnel Curtain Pockets

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Excessive air leakage from the bottom of tunnel curtains can be an expensive problem for poultry producers to deal with both in terms of fuel usage and bird performance. In many tunnel-ventilated houses the amount of cold air entering around loose fitting tunnel curtains is nearly equal to that entering through side wall inlets when minimum ventilating during cold weather. This surplus of cold air can cause the brooders/furnaces in the vicinity of the tunnel curtain to operate as much as three times more as those in other areas in the house. Furthermore, the cold air entering from around the base of the tunnel curtain quickly drops to the floor chilling the chicks and leading to litter caking. Caked litter of course results in increased ammonia production, breast blisters and water height adjustment problems. While birds in the vicinity of tunnel curtain have problems because they are receiving too much fresh air, those in other areas of the house may suffer from poor air quality because they are not receiving their fair share of the fresh air brought in by timer fans.

There are a number of reasons that tunnel curtains tend to be looser than the side wall curtains in a house. First, many producers have installed curtain flaps to the top of their side wall curtains and wooden strips along the bottom, virtually eliminating leakage. Another reason is, whereas side wall curtains typically overlap the bottom of the curtain opening 6" to 12", tunnel curtains often only have a two- or three-inch overlap making it nearly impossible to obtain a tight seal. Last but not least, the strings/straps holding the tunnel curtain against the side of the house are often kept intentionally loose so that the curtain can easily open and close which further contributes to air leakage.



Figure 1. Pocket with electrical conduit



Figure 2. Tunnel curtain in pocket

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One relatively easy and inexpensive method of increasing tunnel curtain tightness is to install a tunnel curtain pocket. A tunnel curtain pocket is simply a piece of 12" to 16" single-hemmed, curtain material attached at the bottom of the tunnel curtain opening to form a pocket for the tunnel curtain to drop in to (Figures 1 - 4). The unhemmed end of the curtain is nailed to the side wall six to eight inches above where the bottom of the tunnel curtain comes to rest when closed. The hemmed end is then held a couple of inches off the side wall immediately across from where the unhemmed end is attached to the side of the house, forming a pocket. The hemmed end can be supported through one of two ways. The first way is to insert a cable through the hem and attach the cable to eye-bolts, the "eye" of which is positioned an inch or two off the side of the house at both ends of the tunnel curtain opening. The second method is to insert electrical conduit into the hem. Strings are attached to the conduit every 10' and then nailed to the bottom of the truss an inch or two from the side wall. When properly installed, the bottom curtain rod should hit the bottom of the pocket just as the curtain is fully closed.



Figure 3. Tunnel curtain pocket



Figure 4. Tunnel curtain closed with pocket

Figures 5 and 6 are from two 40' X 500' broiler houses, one with and one without a tunnel curtain pocket. Though the houses are on two different farms the effect which a loose tunnel curtain pocket can have on fuel usage is very clear. The brooders in the house in Figure 5 with a standard tunnel curtain are running up to three times as much as those in the other areas of the brooding area. In the house with the tunnel curtain pocket (Figure 6) the brooders are only operating approximately 30 to 50% more than those in the other areas of the brooding area. It is important to note that the brooders in the vicinity of the tunnel curtain will always tend to run more than those in the remainder of the house. This is due to the fact that many tunnel curtains are larger than the side wall curtains and though a tunnel curtain pocket dramatically reduces leakage it still tends to be a little looser than a curtain that has a top flap and the bottom is stripped with wood. In addition to the fuel usage differences between the two farms there was also a significant difference in litter caking near the tunnel curtain between the two houses. As you might in the house with the loose tunnel curtains there was a serious litter caking problem near the tunnel curtains, whereas in the houses with a tunnel curtain pocket there was only minor litter caking.

The best aspect of tunnel curtain pockets is their cost. For less than a couple of hundred of dollars per house, a producer can have tunnel curtain pockets installed on the loose tunnel curtains, which over the long term will lead to significantly reduced fuel usage, drier litter and healthier birds.

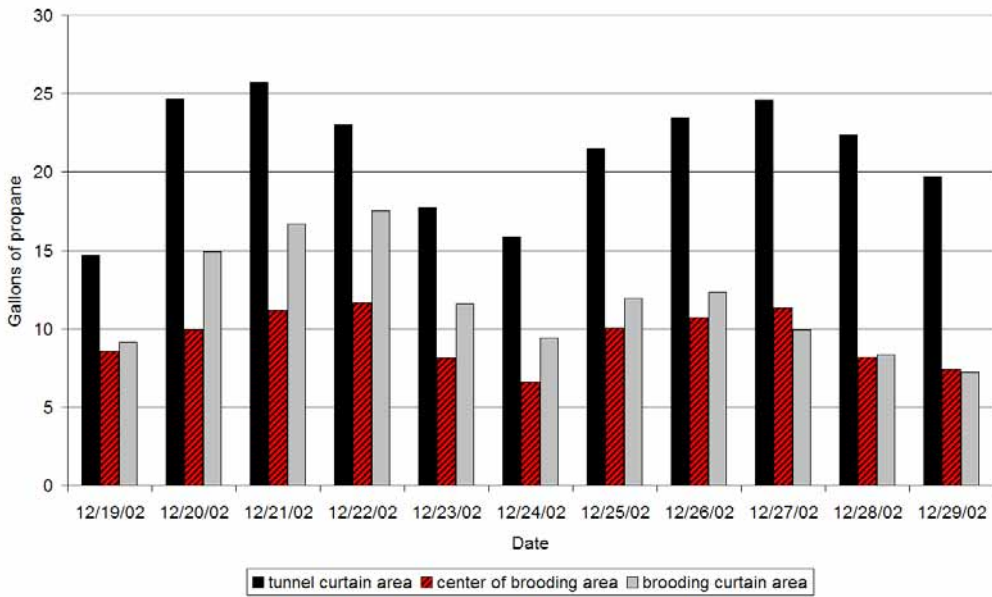


Figure 5. Propane usage by heating zone in house with loose tunnel curtain

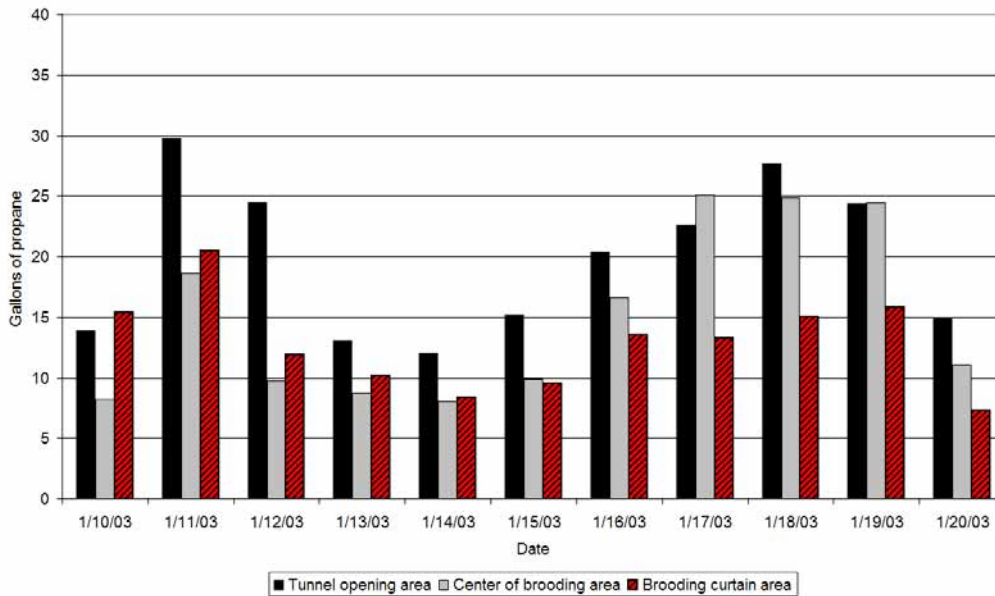


Figure 6. Propane usage by heating zone in house with tunnel curtain pockets

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