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Housing the Laying Hen

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Housing of poultry is important as a means of keeping many environmental conditions under the control of the operator.

**Too little air causes:**
- Accumulation of noxious gases
- Deteriorating effect upon the health of poultry
- Poor production
- Slow growth
- Low resistance to disease
- Suffocation
- Formation of condensation
- Dripping ceilings
- Frosted sidewalls

**Too much air causes:**
- Lessened bird activity
- A drop in egg production
- Higher feed consumption
- Birds to be uncomfortable
- Too low a temperature in cold weather
- Drafts

The environment-nutrition house will enable us to gather performance data from birds with the same genetic constitution and nutritional diet under different environmental conditions such as:

1. Ridge and turn-about fan ventilation vs. the S. D. slot-inlet system.
2. Different volumes of airflow with the S. D. slot-inlet system.
3. Different temperature levels with the S. D. slot-inlet system (providing supplemental heat and/or cooling).

Temperature and humidity levels will be constantly monitored in each of the three sections of the house.

Two Systems of Ventilation

Shown below are the airflow diagrams of two systems of ventilation that are in the environment-nutrition house at the South Dakota State University Poultry Research Center, Brookings, South Dakota.

SOUTH DAKOTA SLOT INLET VENTILATION

Winter Airflow  Summer Airflow

RIDGE INLET AND TURN-ABOUT FAN VENTILATION

Winter Airflow  Summer Airflow
FANS FOR SMALL UNITS

In units below 1500 birds, continuous ventilation with modulation for various conditions can be obtained by using two fans. One fan should have about 1/4 and the other fan 3/4 of the total capacity needed.

An inside cabinet on the low volume fan draws cooler air from above the floor. A damper in the cabinet and a hood on the outside of the building over the fan (as shown below) is used to further reduce air removal from the house during extremely cold weather without restricting the fan.