

1971 - 72

## PROGRESS REPORT

FARM STRUCTURES

Major emphasis for the year centered on planning and development of swine and poultry housing systems with particular emphasis on waste management and control of the environment.

Swine Housing

A 90-sow demonstration housing system was placed in operation with the addition of a 15-stall farrowing house, breeding barn, and total slatted floor finishing house at the Upper Coastal Plains Research Station. Each unit is equipped with the underslat ventilation system developed by this specialist. These facilities along with other applied research projects with innovative swine producers are effectively demonstrating the importance of uniform controlled ventilation in a swine building. Of particular importance is the effectiveness of underslat ventilation in controlling odors in the building. To date, this is the most effective ventilation system developed for controlled environment slatted floor swine buildings. Swine producers are impressed, and this is supported by their adoption of this underslat ventilation system.

Zone cooling techniques developed several years ago are being applied in the breeding barn with encouraging results. Effectiveness here is measured principally by maintaining a predetermined breeding schedule and embryonic development during the summer season.

The finishing house will demonstrate the performance of swine on total slats and the effectiveness of the environmental control techniques for proper ventilation and odor control. Preliminary indications are most encouraging, but real performance data on this facility is not now available because of its short time in operation.

Two in-service training sessions were held for agents with swine responsibilities, one at the Research Station and one in Raleigh.

Six Extension sponsored regional conferences were conducted with participation by this specialist with 513 swine producers and agri-business personnel in attendance. Several other county extension sponsored meetings were conducted.

Office conferences, telephone calls, letters, and written subject matter were other methods used in disseminating the educational information to the public.

Plans were distributed throughout the year for swine buildings and equipment.

#### Waste Disposal and/or Management

With national publicity focused on this subject, considerable time was spent in preparation and dissemination of information on agricultural waste management in order to provide effective methods of pollution control.

Six in-service training sessions, one in each Extension district, were held for Extension, FHA, ASCS, and SCS personnel. The total University effort was presented by both Extension and Research personnel so that one agent in each county as well as representatives of the other above mentioned agencies would have a good understanding of the nomenclature and terminology used to describe wastes; a knowledge of past, current and future research; and a working knowledge of which management schemes are best suited to livestock and poultry waste.

Information on this subject was also presented to livestock and poultry producers in ten different counties throughout the state with over 400 people in attendance.

#### Poultry Housing

Information available as a result of applied research projects with two totally enclosed mechanically ventilated caged laying houses provided the stimulus for several poultry producing areas to examine the environmental conditions in their poultry

housing systems and make changes even during an unfavorable marketing period.

Industry leaders are seeking better management systems and as a direct result of consultations with them, a two-day Poultry Housing Environmental Seminar has been planned for October 12-13, 1972.

Miscellaneous

Results of the learning experience in the course "Environmental and Structural Requirements in Farm Buildings" are evidenced by increased appreciation for and emphasis on better planned farm buildings and related subjects. Agents receiving this training during the special three weeks summer session are making better use of the Plan Service and other subject matter material in their educational program.

COMMITTEES SERVED ON

1. SALS Animal Waste Management Committee
2. Swine Development Advisory Center Advisory Committee
3. Department Drafting Committee
4. Department Out-of-State Travel Committee
5. Extension Poultry Coordinating Committee
6. Extension Swine Coordinating Committee
7. Extension Dairy Coordinating Committee
8. Department Missions Committee of SALS Self Study
9. Chairman, Department Special Activities Committee of SALS Self Study
10. Swine Production and Marketing Systems Committee of Research Task Forces
11. ASAE committees:
  - (a) Chairman, Swine Housing Systems Committee
  - (b) Poultry Housing Systems Committee
  - (c) Secretary, Steering Committee, S & E Division
  - (d) Standards Committee

MEETINGS ATTENDED, PAPERS PRESENTED, AND DISCUSSIONS LED

1. Discussion Leader, Structures & Environment group, Extension Agricultural Engineers Workshop, New Orleans, Louisiana
2. Horse Science Conference, Raleigh, N. C. Presented discussion on "Buildings and Equipment for Horses".
3. Winter meeting of American Society of Agricultural Engineers, Chicago, Illinois
4. Modern Farming Short Course. Presented discussions on "Materials Handling for Livestock and Poultry" and "Animal Waste Control".
5. Attended Materials Handling Exposition in Richmond, Virginia
6. Gave Seminar on "Practical Experiences with Environmentally Controlled Commercial Laying Houses" to Department of Poultry Science.
7. Prepared article on "Dairy Waste Disposal" for Dairy Extension Newsletter
8. N. C. Section ASAE meeting. Discussed "Controlled Environment Swine Housing".
9. Southeast Region ASAE meeting, Richmond, Virginia. Presented paper, "Under Slat Ventilation of Swine Buildings".

OTHER ACTIVITIES

1. Lectured to four undergraduate classes on "Role of Extension" and "The Plan Service"
2. Taught course in Environmental and Structural Requirements in Farm Buildings at special three weeks' summer session.
3. Assisted with two field trips for students.
4. Secretary-Treasurer, N. C. Section ASAE

PUBLICATIONS

1. Plan 527 Revised - Totally Enclosed Slotted Floor Farrowing House with Under Slat Ventilation
2. Plan 6086 - Storage Sheds
3. Plan 1411 - Greenhouse, Gothic Frame
4. Plan 1412 - Greenhouse, Scissors Trussed Rafters
5. Driggers, L. Bynum, Ventilation of swine buildings, EBAE 713, N. C. Agricultural Extension Service
6. Driggers, L. Bynum, Under slat ventilation of swine buildings, EBAE 721