Solid concrete floors and slotted floor swine feeding units have noticeably increased due to greater inherent production efficiencies and higher net farm incomes resulting from cycles of higher market hog prices. However, open dirt lots or pastures are still used to finish approximately 20-30% of the market hogs and maintain about 30-40% of the breeding stock. The producer who feeds out hogs on dirt is substituting labor and land for capital investment. Where labor is plentiful relative to capital, a producer may be able to feed out two or three times as many hogs in an open lot system as he could afford in confined housing. Open dirt or pasture production units have the lowest density of hogs but are considered confinement operations since animals are fed within fenced areas.

Pasture Stocking Density

Animal densities are sometimes low enough to maintain pasture areas where wastes are utilized naturally by the soil-vegetation receiver. The Midwest Plan Service recommends 10 gestating sows per acre or 7 sows and litters per acre and 50-100 growing-finishing hogs per acre depending on rainfall and soil fertility. Dobson, NCSU Crop Science Dept., recommends no more than 30 market hogs per acre on permanent pasture such as bermuda grass or fescue and ladino clover. Beyond this density, bare areas will begin to appear. For pasture to survive, animals must be removed during the dormant or non-growing season or lots rested by a rotation scheme. Pastured situations do not represent feedlot conditions and should not be subject to
effluent limitations. However, the proportion of animals finished on pasture is insignificant compared to those finished on dirt lots.

**Dirt Lot Stocking Density**

Lots with 100 or more hogs per acre will not support vegetative cover. The most widely practiced stocking density ranges from 50 to 200 animals per acre, but densities up to 500 per acre are employed in some cases. It is estimated that less than 10% of hogs produced on open dirt are in lots stocked below 50 animals per acre and less than 15% in lots stocked above 200 per acre. Actual lot location as well as stocking densities are determined by such factors as annual rainfall, temperature, shade cover, soil type, vegetation, topography, drainage and proximity to surface waters.

**Drylot Management**

Soil types generally determine how heavily a lot can be stocked and how much runoff will occur. Higher stocking densities can be maintained on sandy soils which are well-drained and have high infiltration capacities. Manure buildup and compaction are minimal since the animal activity tends to keep the waste well mixed with the sandy surface. Drylots are rotated after two groups of animals or one year's production to control disease and parasites and to allow rejuvenation of the soil surface. These lots are then seeded to grasses or allowed to remain fallow for at least two years before being put back into production.

Lower stocking densities are usually necessary on heavier clay soils or highly organic soils. In low-rainfall areas, surface compaction occurs resulting in a manure pack characteristic of high density beef feedlots. Infiltration is drastically decreased, causing more rainfall runoff. When these lots are taken out of rotation, any manure build-up will usually be disked into the soil or scraped up and spread on crop land. In addition the lot may be deep plowed with subsoilers to break up the surface compacted layer and increase infiltration. In high-rainfall areas, animal activity in dirt lots tend to cause the heavy soils to become very muddy. This condition decreases the animal feed utilization efficiency and increases the potential for odor generation, mosquito production and diseases. Animal mortality rates are higher compared to confined housing. When these lots are taken out of rotation, the soil surfaces may be chemically treated for disease and parasite control.

**Feeder Location**

Hogs raised on dirt lots are usually fed by self-feeding feeder troughs. These feeders are located just inside the fenceline at the highest elevation within the lot to obtain maximum drainage away from the feeders. An approximate 10-foot concrete or wooden pad usually surrounds the feeders to prevent the area from becoming a hog wallow; however, since hogs tend to congregate here, muddy and compacted soil conditions usually prevail. It is in this vicinity that most of the defecated waste is deposited.
Shade Cover

Lots are developed when possible to take advantage of existing wooded areas for shade cover. Trees are rapidly killed, however, in densely populated swine lots due to soil compaction and stripping of the bark by the hogs. Animals which have access to wetlands should be moved to higher ground. These practices necessitate the need for development of new lots and the construction of sun shades in existing lots. Shades should be built at least 8 feet high with their long axis oriented east-west. Pole-supported shade covers can be constructed with fence and straw roofs, nylon mesh shade cloth, or metal painted brightly on the upper side and black on the underside. Some producers use a row of fogging or spray nozzles for cooling the animals during extended periods of high temperatures.

Runoff Buffer

Many swine drylots are located on topography sloping toward a drainageway or stream but are separated from the stream by a wooded or vegetated buffer strip. In addition, large swine production units characteristic of the Coastal Plain usually drain toward a low-lying swampy area through which an ill-defined stream traverses. These conditions constitute a living, biological filter and tend to improve the quality of drylot runoff before it reaches a stream.

Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Employment and program opportunities are offered to all people regardless of race, color, national origin, sex, age, or disability. North Carolina State University, North Carolina A&T State University, U.S. Department of Agriculture, and local governments cooperating.

EBAE 179-93

Return to: BAE Extension Publications