Correlation sow, piglet and personnel responsible at the design of a farrowing crate for sow.

Manuel Galicia Reyes and Abraham Rojano Aguilar, Universidad Autónoma Chapingo, México. galrey01@gmail.com, galrey02@yahoo.com.mx

In housing for sows in a farrowing pen must meet the environmental requirements of the sow, the piglet and personnel responsible. Their daily activities require compliance with thermal, physical and social factors that are closely related to their welfare. Coexistence sow, piglet and human, required to provide a temperature distribution that meets the biological requirements of every living entity and generate comfort, technical argument that explains why traditional farrowing crates that restrict the movement of the sow to protect the piglets are by discontinuing use. The line of research defines design parameters that must fulfill a maternity room in five dimensions: Environmental conditions that demand the sow the piglet and the staff, welfare animal, production system, housing design and economic variables. At this stage animal welfare concepts relate to daily and productive life of the sow, generates and analyzes a variety of materials, which illustrates the behavior of the sow from arriving at the maternity room, before, during and up to two weeks after childbirth, and staff, the space necessary for the work in childbirth. Afterwards the functionality and versatility of 200 farrowing crate models used in the main pig producing countries analyzed. Three alternative solutions were evaluated using the following indicators: farrowing pen, floors, wall and farrowing crate structure. This principle complies with 30 design parameters tested. The design has three areas: Farrowing crate, Area exercise of the sow and pen for piglets. Floors: Tables made from recycled polyethylene, straw colored, arranged longitudinally on the pen, provides the sow and piglet confidence moving. Tables malleable the passage of the hoof. This arrangement of form five areas of floors; rest, exercise, waste and protect the front legs of the sow when lying down or up in the cage. Walls: Incorporating recycled polyethylene tables and green and litterfall color. Farrowing crate structure: Two pieces of steel 1150mm high and 2200 mm length, 800mm spaced form the structure that defines the area of the sow. Zone whose geometry and dimensions are designed with the philosophy, “Limiting movement, allowing movement.” The structure is can move and rotate within the pen. With longitudinal and transverse systems adjustment can adapt to different sizes of animals. The structure is sprayed with paint thermal contrast with the color of pen. The five met manufactured prototypes expected in each of the four test runs expectations. With litter average 12 piglets, the average mortality rate in the twenty test scores is 5.3% after 3 days and 4.8% after 15 days old piglets.

Motivate the expression of natural behavior, provide comfort conditions and finally the welfare of animals, the indicator is more important in the design of housing and livestock equipment. Since, in Mexico initial financial investment, is the strongest argument for the adoption of new technologies, Farrowing crate for sows promoted is priced 40% less than existing commercial cage.