



## Mobile system to manage free range pigs in woodlands

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The optimization of the use of the necessary resources to introduce the cattle in the forests is one of the most important aspects when planning a silvopasture system. The lack of facilities to reduce the labor required for the care of animals is one of the aspects to be solved to promote the extensive use of this type of systems in Galicia. There are facilities that allow the feeding of animals in an automated way in the stables, but they must be adapted for their use in the field, which is a problem because, under field conditions, the climatic conditions and the lack of homogeneity of the land make the use of these facilities not appropriate when they want to be efficiently managed. One of the current problems of extensive systems is their lack of economic viability due to the high variable costs (the Celtic pig is a slow-growing animal), mainly labor, which makes it necessary to establish a system composed of modular facilities (easy assembly) and autonomous (automatic feeding programming) and with an alarm system that warns lacks of water and electricity supply and allows surveillance through the web or mobile. In this way, it would be able to significantly reduce workload and increase profitability of the system. The system is maintained through the use of renewable energies. The programming allows pigs feeding in the area of pinus forest and based on the conditioned animal reflex. The system is integrated into an outer fenced area of 15-20 hectares and includes an inner fenced area for stabling, feeding and capture of livestock in semi-freedom. The inner fenced area

has an automated opening gate for entry and exit animals, and a conventional door for staff, with feeders linked to an automated container circuit that supplies the feed from a silo. The system for opening the gate and feeding is controlled by an automated program that, in addition to turn on the motors, manages a photoelectric sensor and a warning horn. The electrical power supply of programmable motors is made by electrical energy produced by photovoltaic solar panels connected to a photovoltaic controller and to batteries. The outer closure of the grazing area is done with an electric mesh of 90 cm in height, which is attached to two smooth wires, which are placed, one of them at ground level and the other at a height of 110 cm, which hold the mesh. The proposed facilities are suitable for the use of pigs in areas of wild pine forest with an understory dominated by silva and which the indigenous Celtic pig breeds well.



Figure 1. Pigs feeding on a mobile system.

**Mosquera-Losada MR, Villada A, Yglesias-Espiño JM, Iglesias-Becerra A, González-Hernández MP, Ferreiro-Domínguez N, Rodríguez-Rigueiro FJ, Santiago-Freijanes JJ, Rigueiro-Rodríguez A**

*Universidad de Santiago de Compostela*