Food For Forest: an integrative silvi-pastoral system with semi-free-ranging pigs

E.1.2. Non-conventional livestock systems

28 - Food For Forest: an integrative silvi-pastoral system with semi-free-ranging pigs

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Silvi-pastoralism can be a sustainable management practice for the restoration of degraded forests. Semi-free-ranging pigs are commonly farmed in silvi-pastoral systems due to their ability to feed on understory multiple resources (fruits, plant leaves and underground organs, etc.). The project 'Food For Forest', funded by the RDP of Piedmont Region (NW Italy), aimed to evaluate the effectiveness of pig grazing for the restoration and economic valorization of degraded temperate forests. Specifically, pig grazing was targeted to control undesirable species (e.g. bramble), to facilitate a profitable silvicultural use through understory clearing, and to reduce fattening costs.
The study was carried out in two semi-abandoned hill chestnut stands managed with a compound coppice system. Here a rotational grazing system with 20 Nero di Parma barrows was applied from April to December (240 days) in 2019 and 2020. Plant feeding selection, grazing on post-cut tree resprouting, and pig growing performances were evaluated.
Feeding selection was assessed on 33 plant species by direct observations. *Corylus avellana*, *Hedera helix*, *Robinia pseudoacacia* and *Rubus* spp. were the preferred species. Among others, the species consumed according to their availability were *Castanea sativa*, *Cornus sanguinea* and *Ulmus minor*, while avoided ones were *Fraxinus ornus, Quercus cerris*, *Q. pubescens* and *Q. robur*. After a silvicultural renovation cut, removing 36% of the total available stock, the impact of grazing on 1045 sprouts was evaluated. Swine grazed firstly buds (mainly of *C. avellana* and *C. sativa*), while later in the season both buds and leaves were consumed. The average stump height of most species remained unvaried from May to August. Exceptions were *F. ornus* and *R. pseudoacacia*, which had few sprouts showing signs of grazing (4% and 20%, respectively) and heights increasing through time. On average, pigs grew from 59.69 to 157.13 kg LW (6 to 14 months age), reaching the maximum LW gain in June (0.77 kg/d). The reduced feed supplementation (-30% compared to conventional systems) and the high meat selling price (+40 to 100% than the average market price) are expected to balance the slow weight gains and ensure economic sustainability to farmers. Furthermore, preliminary results do not highlight negative impacts on plant community or soil erosion effects.
The positive outcomes of this multifunctional silvi-pastoral approach suggest possible applications in similar environments.