Longitudinal monitoring of parasite infections in two Danish organic pig farms with agroforestry

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Background: Production of pigs in an agroforestry system may contribute to increased animal welfare, less nutrient leaching and affect parasite levels. Trees used in these systems may be selected for potential anti-parasitic effects.
Objective: To describe the occurrence of gastrointestinal nematodes (GIN) in pigs in farms with agroforestry systems.
Methods: Two organic Danish farms with outdoor farrowings in paddocks, each with a partial cover of 20-30% poplar trees (*Populus* spp.), were monitored quarterly for one year. Farm 1 had 650 sows and reared 11000 piglets annually; the piglets were weaned at 10 weeks and reared in the farrowing paddocks until housing at 12 weeks. Farm 2 had 350 sows and reared 6000 piglets annually; the piglets were weaned at 10 weeks and moved to stables with outdoor access. On both farms, 20 fecal droppings were collected from different groups (small weaners, large weaners, finishers, lactating sows and pregnant sows) at each visit and analyzed for GIN fecal egg count (FEC).
Results: The weaners and finishers had low *Oesophagostomum* spp. FEC (means <20 epg), while pregnant and lactating sows had consistently high *Oesophagostomum* spp. FEC (means >3500 epg). The weaners had sporadic infections with low *A. suum* FEC, whereas the finishers were more infected (means of 1000-2000 epg). Pregnant and lactating sows had a lower *A. suum* FEC of 100-200 epg. Both farms routinely dewormed piglets at weaning and pregnant sows one week before farrowing. Ingestion of poplar bark, leaves and branches by sows, was observed.
Discussion: The low FEC in the weaners is probably due to collection of samples a few weeks after deworming. A high transmission of *Oesophagostomum* spp. is observed in the farrowing paddocks and expressed as high FEC in the lactating sows despite deworming shortly before farrowing. The results did not indicate any immediate anti-parasitic effect of the poplar trees, as these results were similar to other outdoor pig productions.