



## Innovative silvoarable system with herbs for small farms

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Herbs production is a promising farming activity for small holdings in Poland. Optimal use of the land within small farms might be achieved by combined production of shade-tolerant herbs and fruit bushes, designed in the form of alley cropping system. On July 2017, EIP Operational Group "Agroforestry in Zielawa Valley" has been formed in Eastern Poland (Sosnówka), where following agroforestry systems have been established: elderberry with lungwort (*Pulmonaria officinalis*) and heath speedwell (*Veronica officinalis*); rugosa rose (*Rosa rugosa*) and dog rose (*Rosa canina*) with cloudberry. The main strengths of the system are: contrary to trees, in the case of bushes less time is needed to achieve fruiting period - the pay-back period for elderberry and rose starts in the second year; both plants can be used for flowers/petals, fruit cultivation and leaves; both woody crops are adapted to low quality soils (the combination of rose and cloudberry is good for acid soils); rose and elderberry products are highly demanded on the market. Shade-tolerant heath speedwell, lungwort and cloudberry are source of niche innovative medicinal products, food supplements and also honey from lungwort. The main weaknesses: high investment costs; labor intensity; specific requirements of plants growth (humid and acid site for cloudberry, calcium-rich site for lungwort). Innovative model of farming still needs testing in terms of nutritional and protective needs. Different methods of soil amendments are being tested in the system (peat soil, pine bark, lignite) in order to keep soil moisture and protect against weeds. Cloudberry has been planted within ditches, covered by membrane foil, regulating water flow.



Figure 1. Silvoarable system with elderberry (P. Świderska)



Figure 2. Establishing silvoarable system with cloudberry (B. Baj-Wójtowicz)

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