Round-leaved sundew (Drosera rotundifolia) as a source of naphthoquinones for pharmacological purposes

Leila Korpela 1), Niko Silvan 2), Maarit Kallio 2 3) Meri-Tuulia Pelkonen 2 3) Tytti Sarjala 2)


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Aims
Round-leaved sundews (Drosera rotundifolia) have been used traditionally as cough medicine. They contain naphthoquinones (e.g. 7-methyljuglone) and flavonoids (e.g., quercetin) which are pharmacologically active compounds. Nutrient-poor peat bogs and bogs drained for forestry could be potential areas for sundew growth and cultivation.

- Our general aim of the study is to develop sundew cultivation on forestry drained, low-productive peatlands e.g. on Sphagnum moss harvested areas in Northern Satakunta region.
- The study will continue as e.g., creating better possibilities to commercial utilization of sundews in peatlands.

Bioactive compounds (Figs. 1-2)
We have applied HPLC-method to analyze 7-methyljuglone from sundew extracts.

Vegetative reproduction (Figs. 3-4)
Vegetatively reproduced sundew biomass will be grown in laboratory conditions and compared with the biomass production capacity in the field farming.

The study will continue as e.g.:
- Cultivation of sundew on newly harvested Sphagnum moss areas in Northern Satakunta area and around Parkano.
- Vegetatively reproduced sundew biomass will be grown in laboratory conditions and compared with the biomass production capacity in the field farming.
- Chemical analysis and screening of the bioactivity will be performed from field grown and laboratory produced sundew biomass to evaluate their composition and potential as a source for valuable compounds.
- By improving the growing methods and availability of D. rotundifolia together with the information of the naphthoquinone content of the biomass we hope to create better possibilities to commercial utilization of sundews in Finland.

Interview of the private landowners (Fig. 8)
The landowners attitude e.g. give permission to collect sundew on their peatlands. M EI = Men No, M KYLLÄ = Men Yes, N EI = Women No, N KYLLÄ = Women Yes (Total 24).

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