

Commercial biomass production by growing of fodder sorrel Rumex OK 2 “Uteush” as an energy plant

One of the most promising perennial energy crops that has been recently researched and tested in the climatic conditions of the Czech Republic and is currently in the pilot phase of commercial use is the fodder sorrel of variety **Rumex OK 2**, a hybrid of the English spinach (*Rumex patientia* L.) and Tien Shan sorrel (*Rumex tianschanicus* A.Los.). The sorrel is also commonly known as under the name “**Uteush**”, after its creator, professor Y.A. Uteush who created it as new fodder crop at the Central Botanical Gardens of the Ukrainian National Academy of Sciences in the end of 1980s.

In the Czech Republic, the hybrid sorrel has been experimentally grown at the trial fields of the Research Institute of Crop Production in Chomutov since 1992 with the aim to verify and to qualify the hybrid sorrel availability for cultivation as a prospective energy crop. Experiments consisted of the complex tests of agricultural cultivation including sowing term, acceptable sowing rate, optimal fertiliser doses, growth treatment and protection against pest and weeds.

The results of the the experimental research proved that besides excellent possibilities for use of hybrid sorrel Uteush as food or fodder crop, it is a **very prospective, highly productive energy crop suitable for growing in the moderate climatic conditions.**

The key advantages of use of hybrid sorrel Uteush as an enrgy plant are:

- Highly productive perennial crop (10 - 12 years); up to to 200-260 cm of height and high yield of dry biomass - 10-14 t/ha since 3rd year of cultivation;
- High tolerance to soil and site agroecological conditions, sowing term and agricultural methods, low requiremenmts for additional fertilisation;
- Early ripening - it is possible to harvest the sorrel as dry energy biomass already in July;
- High reproductive coefficient (yield of seeds 500 kg/ha, while sowing rate is 5 kg/ha;
- Possibility of use of common agricultural machinery for cultivation and harvesting;
- Low humidity of ripe biomass (in dry weather 15-20%) – no need for additional drying;
- Similar properties of chipped biomass as wood-chips – high calorific value of dry bionmass (approx. 17 GJ/t);
- High temperature of ash fusibility - possibility of use in common woodchips boilers (as opposed to straw);
- Low total costs of production;

Economy

TO BE UPDATED

Currently, the cultivation area of sorrel is increasing very quickly. The graph shows the rapid increase of the hybrid sorrel cultivation in the Czech Republic for energy purposes. There are first projects emerging in the Czech Republic incorporating energy sorrel as a fuel in agricultural sector, public buildings as well as in small biomass-fired district heating sources.

CZ-BIOM

The Czech biomass association **CZ Biom** has been making an effort since 1994 in the fields of energy use of biomass, biogas production and the biowastes treatment. CZ Biom has 480 members including producers of boilers, suppliers of biogas plants, research institutes, producers of biofuels and operators of bioenergy sources.

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Poster prepared by ENVIROS, s.r.o. using background materials of CZ BIOM and FYTEA, s.r.o.
References: Jaroslav Váňa, Sergej Ušáček: Presentation of CZ Biom – Czech association for biomass on the occasion of the expert mission of International Energy Charter (11. 9. 2003). Biom.cz, 17.9.2003, <http://biom.cz/index.shtml?x=146232>

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Crop after its blooming, 12. June 2003



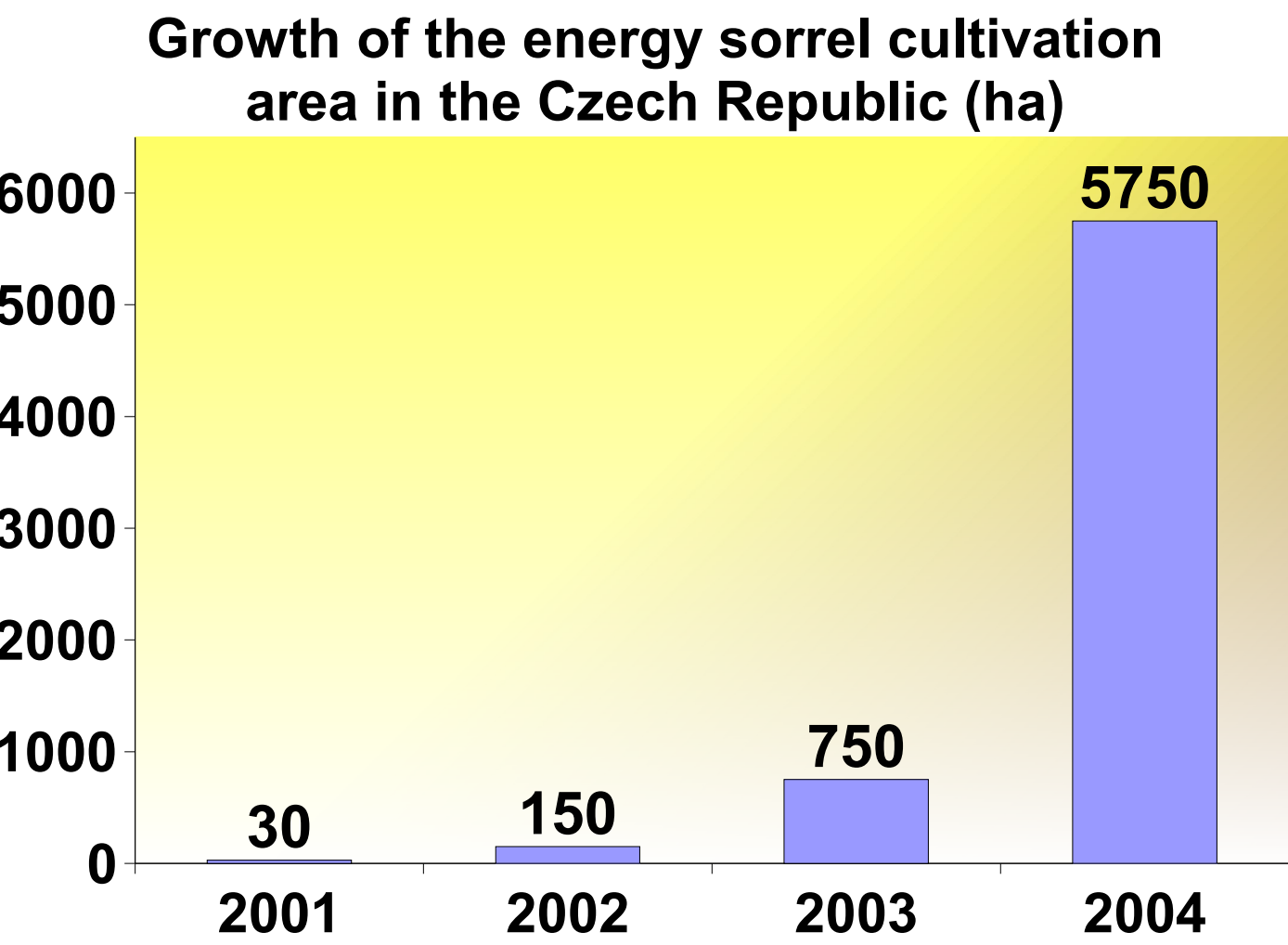
Crop harvest using common machinery (Mowing crusher E 303), 17. July 2003



Collecting from the lines by the cutter Jaguar 850, 17. July 2003



Energy sorrel chips as alternative to woodchips



FYTEA, s.r.o. is a private Czech company involved in commercial testing of Uteush sorrel energy plant. Together with CZ BIOM, FYTEA is currently acting as a coordinator of a project of development of commercial production of biomass by growing of fodder sorrel Uteush as an energy plant.

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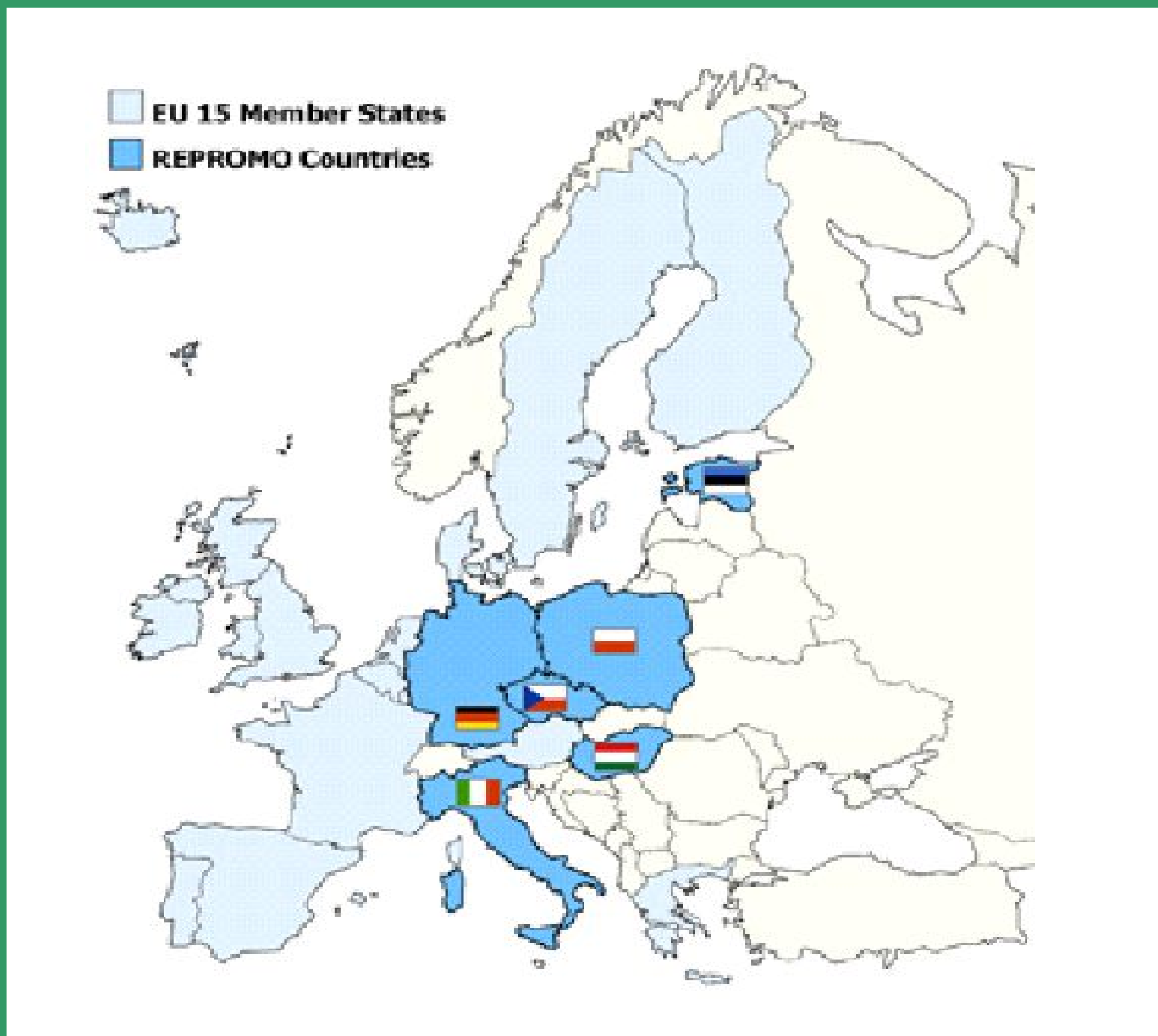
REPROMO Project Idea

Czech Republic



REPROMO Partners

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Estonian Biomass Association
ETA – Renewable Energies
European Biomass Industry Association
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