NEW MACHINES FOR HARVESTING OF SRC IN HUNGARY

(Ergebnissen in die Emtwicklung der Ernte-Technik von Holz-Energieplantagen)

Prof. Dr.Sc. **Marosvölgy B. –** M.Sc. **Ivelics R.** PhD. stud.
University of West-Hungary, Deparment of Energetics
H-9400, Sopron Ady E. str. 5.
Tel./Fax.: +36-99-518-188
E-mail: marosvolgyib@asys.hu, ivelicsr@emk.nyme.hu

Summary

In Hungary the rate of utilization of renewable energy sources is comparatively low (3,4%), hence the aim is to double this rate by 2010.
The assortment of live-wood of extant forest (in which so-called „sustainable, near-to-nature" forestry is found) is ever important (384 Mm^3), but the average growth is only 3-4 m^3/ha/year. 55-60% of this yield can be energy source.
Though in the convetional forestry, significant expansion is expected, but from the new forests, energy source can be only won a few decades after, with this object the basic material increasing, namely the intensive dendromass-production is needed for the faster energetical development. For this the short rotation coppice and the energy forests can be suitable.
At present the experiments consist of short rotation wood plantations (3-5 years), and longer rotation plantations (10-15 years). Such plantations and energy forests are able to give great wood-yields (10-12 t/ha/year). However the harvesting of these plantations and energy forests is not done by the tehniques of the traditional forestry.

At present we execute experiments in two main development orientations.
For the harvesting of short rotation coppice a walking chipper adapter was made. With this machine, which can be connected to the tractor rear ram, the comparatively low-size tree is cut, chipped during the walking, and the produced chip is collected in a trailer of a line transfer vehicle.
For the harvesting of longer rotation, but plantation-like energy forests, cutter-feller is being developed. The machine is an adapter of a tractor. During the walking, it cuts the trees in theirs base and behind the machine the cutter-feller windrows the trees. Henceforward, the cut trees can be prepared for two methods.

a. In the either technology version the laid wood are collected by a bundler machine, and it makes bundles. The 0,6-0,7 m diameter and 2 m long bundles have great density (0,6-0,8 t/m^3). The bundles can be well-stored, easy to loaded and transported for long distance.
b. In the other technology version the windrowed wood are searched by mobil chipping unit, and the wood are chipped in the cutting area, and the chipped material in a throwing pipe is gone to the transporting machine, which is in a parallel direction with the harvester machine. The chip has lower density (230-380 kg/m^3).

The results of the technological experiments two new harvester machines is being developed, and expectedly adequate technologies would be succeeded to develop for the basic material supply of great power plants, respectively of low-performance local energy-centre.