Contractors improve yields and make better feed quality by use of CTF in forage grass

Mogens Kjeldal

Advisor Danish Contractors DK and Hans Henrik Pedersen, Phd Student Aarhus University, DK,
Kjeldal@dmoge.dk

Mogens Kjeldal M.Sc. in Agricultural Science is a Technical Adviser for Danish Contractors with special knowledge about contracting for farmers, traffic rules, energy from agriculture, and calculation of machinery costs. Kjeldal has been working as an adviser for contractors since 1984 and he has been concerned with many different development projects concerning new technology.

ABSTRACT: Controlled Traffic Farming systems for forage grass are easy to establish, and CTF is now offered as the standard service by many contractors in Denmark.

In most crops compaction of the soil is the main cause of yield reductions. In forage grass however the physical damage of grass is most likely the main problem, as driving on the grass causes damage of stems and roots. Also, driving when the soil is soft or wet causes an unlevel soil surface leading to uneven cutting height and uneven quality in the following cuts.

Most farmers have good estimates of their yields in grain crops. This is not the case for grass where farmers have no good measures of their yields. As feed is also lost during storage and handling most farmers tend to set aside extra area for forage production just to be safe. They do not optimise yields as much as they do in other crops. This is changing however. An increasing number of dairy farmers in Denmark now use Controlled Traffic Farming (CTF) to optimise their yields as well as the quality of their forage grass. More contractors are now offering farmers yield measurement with the forage chopper.

About 80% of grass and maize in Denmark is harvested by contractors. To be attractive to the farmers many Danish contractors now offer CTF systems that include harvest as well as spreading or injecting of liquid manure after the grass is harvested. The contractors report very satisfied customers and as CTF grass is easy in practice, so more and more contractors offer this as their standard service. No-one knows exactly the area of grass managed under CTF. A good estimate is that 15.000 ha are managed by around 20 contractors as well as by farmers who harvest themselves.

12 m is the standard

Most CTF grass is managed in 12 m systems although a few use 14, 15 or a combined 9/18 m system. 12 m slurry injectors were already widely used by the contractors and 12 m tedders and rakes are common as well. The main challenge has been lack of swathers. Now several contractors use the JF Stoll GXT 13005 triple mowers with a working width of 12.3 m.

Most contractors use self-propelled forage choppers. Some choppers need strengthening of the back axle to tow the 2 or 3 axle wagons carrying up to 60 m^3. Some contractors and farmers also use self-loading forage wagons.

Better quality and longer lasting forage grass

Some species like lucerne (alfalfa) and red clover are especially sensitive to field traffic. By use of CTF these high value protein crops can better compete with the grass species in the grass/clover mixtures that are grown. A grass field will usually lose yield potential after three years. CTF fields have been highly productive for four or more years. This reduces the cost to reestablish grass that in Denmark we often grow in rotation with other crops.

One large scale trial from Aarhus University with CTF for organic clover grass has shown potential for yield increases in the range 15-20%. The clover content of the grass was not measured, but visually the clover was much more vital in the non trafficked plots.