Due to the increasing fuel costs the demand of users on optimized usage of resources is raising. A direct approach is given by the increase of powertrain efficiency. An alternative pointed out by stationary industrial solutions are electrical drive systems. These gain in importance because of very positive experiences in efficiency and controllability during the last years. But for the mobile agricultural application it is necessary to consider different, much wider application spectra. Hence the applicability of electric drive trains must be assessed mentioning different criteria. Therefore a project was started in 2005 in cooperation with KRONE and funded by the Deutsche Bundesstiftung Umwelt (DBU). In the project the electric drive enables energy efficiency enhancements between 14 to 20% considering the typical dynamic load cycles of a forage harvester. Disadvantageous are the higher weight and the larger size of the electric components compared with the standard hydraulic solution.

Stichworte:

Hybrid drive; Power train; electric drives; efficiency factors