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Res. Agr. Eng.

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Jablonicky

Pressure in the hydraulic system of three point hitch of tractor equiped with electrical and mechanical control

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The goal of the measurement of the tractor ZTS 164 45 equipped with digital electrohydraulical control EHR-D BOSCH during ploughing with ploughs KUHN (4 bottoms) and 5 PHX 35 (5 bottoms) was to obtain time dependent states of pressure in the hydraulic system of the three point hitch of tractor. From the point of view of comparison of obtained results testing conditions were determinated with respect to physical and mechanical properties of soil such as soil volume mass, soil humidity, penetration resistance and shear resistance of soil. Beyond these measurements also measurements of operation parameters as a ploughing depth, ploughing width, working speed and fuel consumption were accomplished. The measured results of physical and mechanical properties of soil show big content of loam elements and stones in the soil. Simultaneously the measured results of the operation parameters of the ploughing sets confirmed that the ploughs KUHN and 5 PHX 35 are suitable for tractor ZTS 164 45. Based on the measured results there is a possibility to infer following conclusions: Control system of the three point hitch offers a reliable function. Hydraulic circuit is equipped by an improper distributor which causes pressure peaks which are corres-ponding with safety valve adjustment. Hydraulic circuit has a low conductive resistance. Loading of tractor body is higher when using mounted plough than with semi mounted plough.

Keywords:

press; hydraulic system; three point hitch; electrohydraulical control; mounted plough; semi mounted plough

[fulltext]