

Analysis of Anthropometric Compatibility of Agricultural Tractor Cabs

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ABSTRACT

In agriculture, anthropometry has a remarkable relevance above all in design and realization of a tractor cab. The operators spend much time in driving tractors and an uncomfortable cab represents a risk for them. A space too narrow is extremely dangerous in case of overturning, for the collisions with the internal parts of the cab, and it can favour unintentional use of the commands with consequences on the behaviour of the vehicle.

This paper is focused on experimental analysis of the internal dimension of tractor cabs. The main goal is to verify the respect of “the least overall dimensions” of the driver (according to UNI EN ISO 3411 standard), calculated on the biggest driver size, corresponding to the internal cab surface with no visible deformation.

Measurements have been carried out on 15 tractors differently dimensioned and aged, later compared to the provided limits, in order to verify the least overall dimensions.

The results show that all the cabs, also if approved in accordance with OECD standard, don't respect one or more parameters provided by the UNI EN ISO 3411 standard.

Keywords: Ergonomics, Anthropometry, SIP (Seat Index Point), Cab, Agricultural tractors