# MODEL VÝPOČTU FUGITÍVNEJ EMISIE
# PRE USKLADŇOVANIE MOKREJ PILINY NA SKLADOCH

## THE MODEL OF FUGITIVE EMISSION CALCULATION
## FOR STORING THE WET SAWDUST IN STORAGES

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## ABSTRACT

The paper contains the mathematics-physical model for emission quantity calculation, namely the emission factor of fugitive emission ($FgE_{TZL}$) for the purpose of storing wet sawdust in storages within the wood processing plants.

The calculation model consists of two parts: the enumeration of dry mass weight of fine sawdust fraction related to 1 m$^3$ stored sawdust in storages; and determination of technical calculation error. The model takes regard to following factors of influence: tree species, the technology of wood mass processing (sawing) and the type of technical equipment for wood mass processing.

**Key words:** storage, sawdust, fugitive emission, technical calculation, environment.

## SUMARY

In the paper is mathematics-physical model for emission quantity determination – the emission factor of fugitive emission ($FgE_{TZL}$) for wet sawdust storing in storages within the wood processing plants.

Technical enumeration of emission quantity ($FgE_{TZL}$) contains the calculation of dry mass weight of fine sawdust fraction, with size under the 100 μm, related to 1 m$^3$ stored sawdust in storages ($M_{TZL}$); and absolute error value of fine sawdust fraction weight determination by technical calculation ($U_{TZL}$).

Following equation represents the mathematics notation of the model calculation.

$$FgE_{TZL} = \rho_{red} * k_p * \frac{f_{a \leq 100-i}}{100} * \left( 1 + \frac{_{rel}U_{TZL}}{100} \right) \quad \left[ kg.m_{pr}^{-3} \right]$$

Representative emission factor value of fugitive emission $FgE_{TZL}$ for manipulation and storing of wet spruce sawdust is: $FgE_{TZL-SPRUCE} = 0{,}537$ [kg.m$_{pr}^{-3}$], wet pine sawdust $FgE_{TZL-PINE} = 0{,}699$ [kg.m$_{pr}^{-3}$], wet beech sawdust $FgE_{TZL-BEECH} = 0{,}892$ [kg.m$_{pr}^{-3}$], wet oak sawdust $FgE_{TZL-OAK} = 0{,}967$ [kg.m$_{pr}^{-3}$] and wet accacia sawdust $FgE_{TZL-ACCACIA} = 1{,}018$ [kg.m$_{pr}^{-3}$].

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