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APPLICATION OF REFERENCE VALUES OF COMPLEX FUEL AND ECOLOGICAL CRITERION AND COEFFICIENT OF PONDERABILITY OF FUEL CONSUMPTION FOR ENTRE FIELD OF OPERATION REGIMES OF DIESEL ICE

Poloshchuk T.R., Kasyonkina N.D., Shpotya M.O., Rudenko Yu.V., NUCD of Ukraine, SA – Kondratenko O.M., DSc(Eng.), Assoc. Prof., NUCD of Ukraine

The dependence of the reference values of the K_{fe} criterion on the value of g_e for different levels of EURO and the basic values of the coefficients $\sigma = 1.0$ and $f = 1.0$ and the value of $H_u = 42.7$ MJ/kg, is shown in Fig. 1,a, and is described by the method of least squares by formulas (1)–(3). The distribution of the reference values of the K_{fe} criterion on the field of operating regimes of the 2Ch10.5/12 autotractor diesel engine for extreme levels of EURO is illustrated in Fig. 1,b and 1,c. The graph of the dependence of the reference values of the K_{fe} criterion, averaged over the field of operating regimes of the diesel engine for different levels of EURO is shown in Fig. 1,d. It is described by the method of least squares by formula (4).

$$d\left(K_{fe}\right) = \exp\left[-\exp\left(a_k\left(g_e\right) + b_k\left(g_e\right) \cdot K_{fe}\right)\right]; \quad (1)$$

$$a_k = 2{,}075 \cdot 10^{-3} \cdot g_e + 0{,}181 ; \quad (2)$$

$$b_k = -2{,}462 \cdot 10^{-8} \cdot g_e^2 - 1{,}190 \cdot 10^{-5} \cdot g_e - 2{,}735 \cdot 10^{-4} . \quad (3)$$

$$K_{fen} = 0.735 \cdot \text{EURO}^4 - 8.325 \cdot \text{EURO}^3 + 34.366 \cdot \text{EURO}^2 - 50.346 \cdot \text{EURO} + 45.783. \quad (4)$$
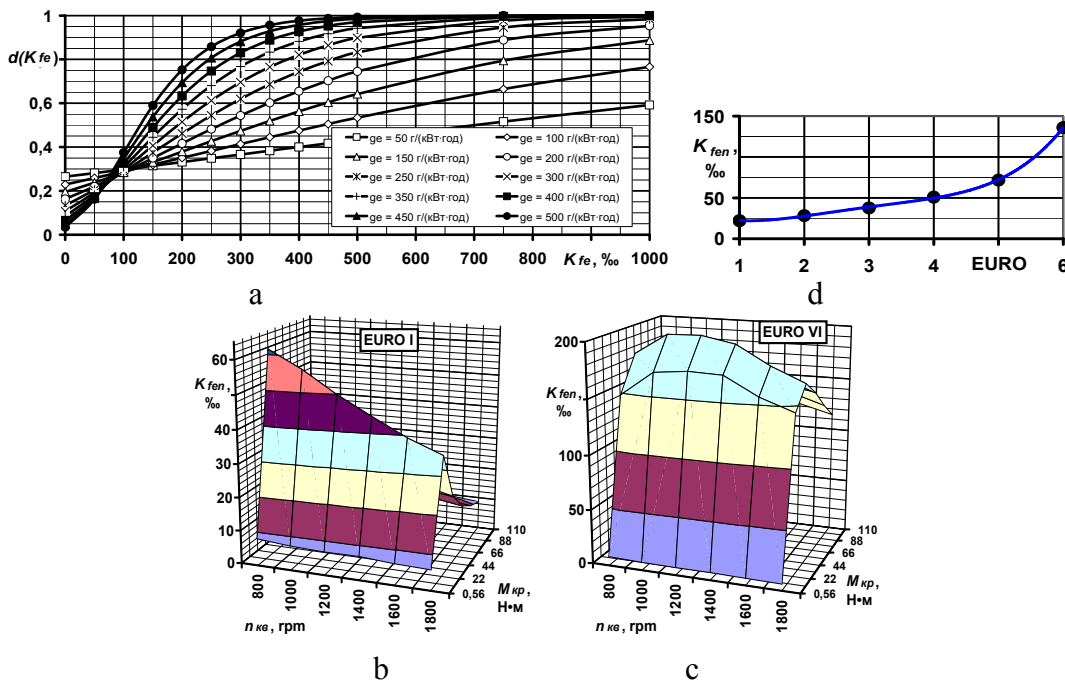

Figure 1 – Results of the study

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