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## **Coloristic and fungicidal properties of some azo compounds containing 1,3-diketone and pyrazolone fragments and their metal complexes**

**Vu Thi Ngok An,<sup>1</sup> Anastasia G. Shchepilina,<sup>1+</sup>  
Yury M. Atroshchenko,<sup>2</sup> and Olga V. Kovalchukova<sup>1,3\*</sup>**

<sup>1</sup> *Department of Organic Chemistry. A.N. Kosygin Russian State University (Technology. Design. Art). Sadovnicheskaya St., 33. Build. 1. Moscow, 115035. Russia. E-mail: ashchepilina@mail.ru*

<sup>2</sup> *Department of Chemistry. L.N. Tolstoy Tula State Pedagogical University. Lenin Ave., 125. Tula, 300026. Russia.*

<sup>3</sup> *Department of General Chemistry. Peoples' Friendship University of Russia. Miklukho-Maclay St., 6. Moscow, 117198. Russia.*

\*Supervising author; +Corresponding author

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### **Abstract**

The paper discusses the coloristic and fungicidal properties of six azo dyes containing 1,3-dicarbonyl and pyrazolone fragments, as well as complex compounds of cobalt(II), nickel(II), copper(II), and zinc(II) based on them. Test dyeing of samples of multitissue, consisting of six main types of fabric used in the textile industry, was carried out in a cold way under conditions corresponding to acid dyeing (pH = 5, T = 60 °C), neutral (pH = 7, T = 60 °C) and active (pH = 9, T = 60 °C) dyes. The studied compounds dye woolen, polyamide and acetate fibers yellow-orange; beige-brown and red colors when dyed with acid dyes. The use of metal complex compounds for dyeing led to a deepening of the color and a shift in the color of the dyed material to the red region of the spectrum. Organic dyes exhibited better color properties as acidic dyes, and metal-containing dyes as active dyes. The introduction of a sulfonic group into the dye composition instead of sulfanilamide or sulfonyl chloride substituents leads to a shift in the colors of the dyes to the red part of the spectrum. Color changes are more pronounced for dyes containing 1,3-dicarbonyl moieties than for azopyrazolone dyes. Replacement of hydroxyl groups in the phenolic fragment of azopyrazolone dyes by carbonyl and hydroxylamine fragments deteriorates the coloristic properties of the dye. The resulting dyes showed high resistance to ultraviolet radiation, sweat and washing, but low resistance to mechanical stress. Organic dyes containing sulfanilamide fragments

and their metal complexes demonstrate relatively weak fungistaticity in relation to phytopathogenic fungi.

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