

## **STUDIES REGARDING DESORPTION OF FOOD DYE BY DIFFERENT SOLVENTS**

**Laura Carmen APOSTOL<sup>1</sup>, Maria GAVRILESCU<sup>2</sup>**

e-mail: [laura.apostol@fia.usv.ro](mailto:laura.apostol@fia.usv.ro)

---

### **Abstract**

In order to elucidate the interactions established between the sorbent and the sorbate desorption studies can be conducted using different polar and non-polar solvents. In the first part of the investigation 20 mg/L of food color Red No. 3 was sorbed on 1g beans hulls/50 mL solution, at room temperature. After the sorption equilibrium was reached, Sulphuric acid (0.2 M), chlorhydric acid (0.2 M), acetic acid (1 M), sodium chloride (1 M), distillate water and distillate water pH 10 (adjusted with NaOH) respectively was used to desorb the dye. Excepting the water with pH 10, where the percentage desorbed is around 17 %, desorption cycle indicated a low amount of dye released in the solution. The efficiency of the sorption-desorption process of 50 mg/L Red No. 3, in three cycles, using 50% acetone, 40% isopropanol, 40% ethanol and distillate water pH 11 (adjusted with NaOH) was conducted in order to evaluate the sorbent reutilization potential. Ethanol (84%) and isopropanol (89%) provided the higher efficiency for dye desorption. Acetone and ethanol keep a constant percentage, around 50-60%. The low amount of dye desorbed reflects a strong interaction between the agro waste surface and the dye molecules, with ion exchange interactions type.

**Key words:** quality indicators, refrigeration, sauces