

## ABSTRACT

**Author:** Martin Konečný

**Title:** Observing the stability of infusion solution containing amino acids

Water solutions of infusion amino acid compounds undergo decomposition and turn yellow while stored. The cause of this unfavorable phenomenon hasn't been adequately explained so far; therefore the stability study was carried out comprehensively: the exogenous (luminous radiation, oxygen above the solution, temperature) as well as endogenous (reactivity of the mixture components and their transformation, adjuvants) influences were monitored that usually contribute to the decomposition of infusion solutions. Analytical instrumental and separation methods HPLC, NMR, SPF and gasometry were applied to determine the factors that affect the stability of commonly used amino acid solutions Neonutrin 5%, Neonutrin 10% and Nutramin N 8%. It was surprising to find out that the very stabilizer – sodium disulfide doesn't significantly influence the stability of solutions. HPLC and SPF analyses revealed that the majority component responsible for the decomposition was the amino acid tryptophan. The HPLC analysis of the processed tryptophan itself revealed at least 8 decomposition products. The usable life depends significantly on the actual method of final sterilization.