The investigation of the dynamics of solutions of nonlinear reaction-diffusion PDE systems generated by biochemical networks is a great challenge; in general, even the existence of classical solutions is difficult to establish. On the other hand, these kinds of problems appear very often in biological applications, e.g., when trying to understand the role of spatial inhomogeneities in living cells. We discuss the persistence and global stability properties of special classes of such systems, under additional assumptions such as: low number of species, complex balance or weak reversibility. (Received July 17, 2019)