We study a reaction-diffusion boundary-value problem which describes the evolution of allele frequencies at a single locus under the action of migration and selection. The investigations on positive non-constant equilibrium solutions, so-called clines, is a decisive step to explore the dynamics of migration-selection models. Hence, we consider the Neumann problem associated with a second order nonlinear differential equation of the form $p'' + g(x)f(p) = 0$, where g has indefinite sign with $\int_0^T g(x)\,dx < 0$, and $f\colon [0,1] \to \mathbb{R}$ satisfies $f(0) = 0 = f(1)$, $f(s) > 0$ for every $s \in (0,1)$. We investigate how the number of clines depends on the assumptions about the selection term $g(x)f(p)$.

Looking first at the graph of the nonlinearity f, we deal with a non-concave function such that the map $s \mapsto f(s)/s$ is monotone decreasing. We show the existence of at least three clines, and we answer to the conjecture by Y. Lou and T. Nagylaki appeared in [JDE (2002)].

Then, we focus on the indefinite term g, and we assume that it has two positive bumps separated by a negative one. By considering a function f such that $f'(0) = 0$, we provide conditions for a high multiplicity of clines.