

1096-35-2166

Ratnasingham Shivaji* (shivaji@uncg.edu), Department of Mathematics and Statistics,
University of North Carolina at Greensboro, Greensboro, NC 27412. .

We consider the problem

$$\begin{aligned} -\Delta_p u &= \frac{au^{p-1} - bu^{\gamma-1} - c}{u^\alpha}, & x \in \Omega \\ u &= 0, & x \in \partial\Omega \end{aligned}$$

where $\Delta_p u = \operatorname{div}(|\nabla u|^{p-2} \nabla u)$, $p > 1$, Ω is a bounded domain with smooth boundary in \mathbb{R}^n , $a > 0$, $b > 0$, $c \geq 0$, $\gamma > p$ and $\alpha \in (0, 1)$. Given a, b, γ , and α , we establish the existence of a positive solution for small values of c . (Received September 17, 2013)