**DOTTORATO DI RICERCA IN BIOLOGIA CELLULARE E DELLO SVILUPPO**

**39th CYCLE**

**Project proposal for a Sapienza PhD scholarship**

**PNRR ex-DM118 research line**

**Title:** *Caenorhabditis elegans*: a model for the farm to fork strategy

**Supervisor:** Daniela Uccelletti (daniela.uccelletti@uniroma1.it)

**Scopus Author ID:** 6603335950

<https://corsidilaurea.uniroma1.it/it/users/danielauccellettiuniroma1it>

**Summary**

This research line is in theframework of the sustainability of food systems, using an in vivo model system (*C. elegans*) for the evaluation of the quality and safety of food products derived from controlled supply chains. The research also aims to exploit natural extracts, "end products" or processing intermediates to obtain products capable of improving well-being in humans and animals, considering the high degree of gene conservation between nematodes and humans [1]. In particular, the prebiotic, antioxidant, anti-aging, anti-obesity and antimicrobial properties of these compounds will be evaluated invitro and in vivo and chemically characterized by NMR spectroscopy [2,3,4]. Furthermore, in terms of circular economy and low environmental impact, strategies will be developed for the production of microorganisms isolated from fermented foods and metabolic products to enhance food waste for biotechnological applications [5].

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