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Application of nuclear techniques in the mass rearing of *Nesolynx thymus* (Hymenoptera: Eulophidae), an endoparasitoid of Uzi fly *Exorista sorbillans*

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The Uzi fly, *Exorista sorbillans* Weidemann, is an endoparasitoid of the the silkworm moth, *Bombyx mori* L., and can impact commercial sericulture. Effects of gamma radiation (^{60}Co) on the mass production of the hyperparasitoid *Nysolynx thymus* (Girault) were investigated. To assess the potential value of nuclear techniques in improving host suitability, two cohorts of early (2-4 day-old) and late (6-7 day-old) host puparia were selected for irradiation. The host pupae were irradiated with 0 (control), 0.5, 1, 2, 4 or 8 Gy for early pupae and 0 (control), 10, 30, 50, 70 or 90 Gy for late pupae. Gamma irradiation significantly ($P<0.001$) increased the progeny production of *N. thymus* when reared either on early or late irradiated host puparia, particularly in the parental generation, but irradiated early host pupae were more suitable for mass production of *N. thymus* than the irradiated late pupae. The sex ratio of parasitoids developing from gamma irradiated host pupae varied significantly. Higher proportions of females were observed for all the dose and host-age groups. The present finding leads to the conclusion that ionizing radiation offers a reliable means to achieve developmental arrest of insect hosts for use in in vivo rearing prior to mass production of the parasitoid *N. thymus*.