

# The Evolutionary Ecology of Endozoochory

Tomas A. Revilla<sup>1</sup>, Francisco Encinas-Viso<sup>2</sup>

<sup>1</sup> Laboratory of Theoretical Ecology, Institute of Entomology, Biology Center, Czech Academy of Sciences  
tomrevilla@gmail.com

<sup>2</sup> Centre for Australian National Biodiversity Research, CSIRO Plant Industry  
franencinas@gmail.com

*Keywords: Endozoochory, Frugivory, Fruit size, Trade-offs, Choosiness.*

One of the most important plant dispersal syndromes is endozoochory: the transport of their seeds by frugivorous animals [1]. Adaptations for endozoochory involve costs for the plant, and animals can choose to eat or not to eat fruits depending on their nutritional value. We incorporated these facts in a mathematical model in order to study the evolution of fruit traits, when frugivores are choosy. Under density-independent growing conditions we predict that endozoochory is unfavorable when fruit production costs are high, favorable when costs are low, and uncertain when costs are intermediate and frugivores very choosy. We found similar outcomes under very simplistic density-dependent growing scenarios. Our work highlights the potential role of trade-offs in fruit production and frugivore foraging behavior on the evolution of plant dispersal strategies [2].

## References

- [1] D. J. Levey, W. R. Silva and M. Galetti, ed., *Seed Dispersal and Frugivory: Ecology, Evolution, and Conservation*. CAB International, 2002.
- [2] A. Gautier-Hion, et al, *Fruit characters as a basis of fruit choice and seed dispersal in a tropical forest vertebrate community*. *Oecologia* , **65** 324–337, 1985.