INTRODUCTION

Amphipods from *Posidonia oceanica* meadows:
- Important component of the vagile fauna
- Potential importance in organic matter transfers from producers to higher level consumers
But trophic ecology still poorly known... ➔ Use of C & N stable isotopes as trophic tracers

RESULTS & DISCUSSION

I. Insights from δ¹³C measurements (Fig. 1)
1. Amphipod species cover a wide range of values (from -17 to -27‰).
2. Intraspecific variability highly differs from one species to another (e.g. *D. spiniventris* vs. *A. rubella*).
3. Most food sources and amphipods are found within -18 and -21‰, showing considerable overlap.
4. *D. spiniventris* seem to feed on SPOM.
5. *Gammarus* sp. may assimilate *Posidonia* litter (already noted for *G. aequicauca* by [2])

![Fig. 1](image)

II. Crossing δ¹³C and δ¹⁵N data (Fig. 2)
1. Confirmation of points I.3 & I.4
2. Better discrimination, but still some overlap between some food sources (BPOM & litter epifauna) and amphipod species (*A. rubella* & *O. humilis*)
3. δ¹⁵N sources = 1-3‰
δ¹⁵N amphipods = 3-4‰

Δ₁⁵N < 3‰

![Fig. 2](image)

III. Use of the IsoSource mixing model (Fig. 3)
With high tolerance (0.2‰), aggregation of BPOM and litter epifauna, Δ¹³C=0 and Δ¹⁵N=1 [3].
1. No major contributions of seagrass carbon
2. *D. spiniventris*: Very high contribution of SPOM (85 % of diet), robust frequency distribution (fig. 3B)
3. *O. humilis* & *A. rubella*: Low to medium contribution of all sources
   - *A. chiereghinii*: High contribution of epifauna from the leaf stratum (50%)
     - BUT very wide frequency distribution (fig. 3C)!
   ➔ Contribution estimates yielded by the model:
     - Reliable for *D. spiniventris*
     - Unconsistent for the other species...

![Fig. 3](image)

CONCLUSIONS

- Considerable interspecific trophic diversity: most species seem to feed on epiphytic organisms, but other exploit alternative food sources (SPOM)
- Need of stronger datasets and more appropriate fractionation estimates for efficient mixing model forcing
- Interest of confronting SI with other techniques (gut content, fatty acids) to enhance discrimination and reduce the number of potential sources!

REFERENCES


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