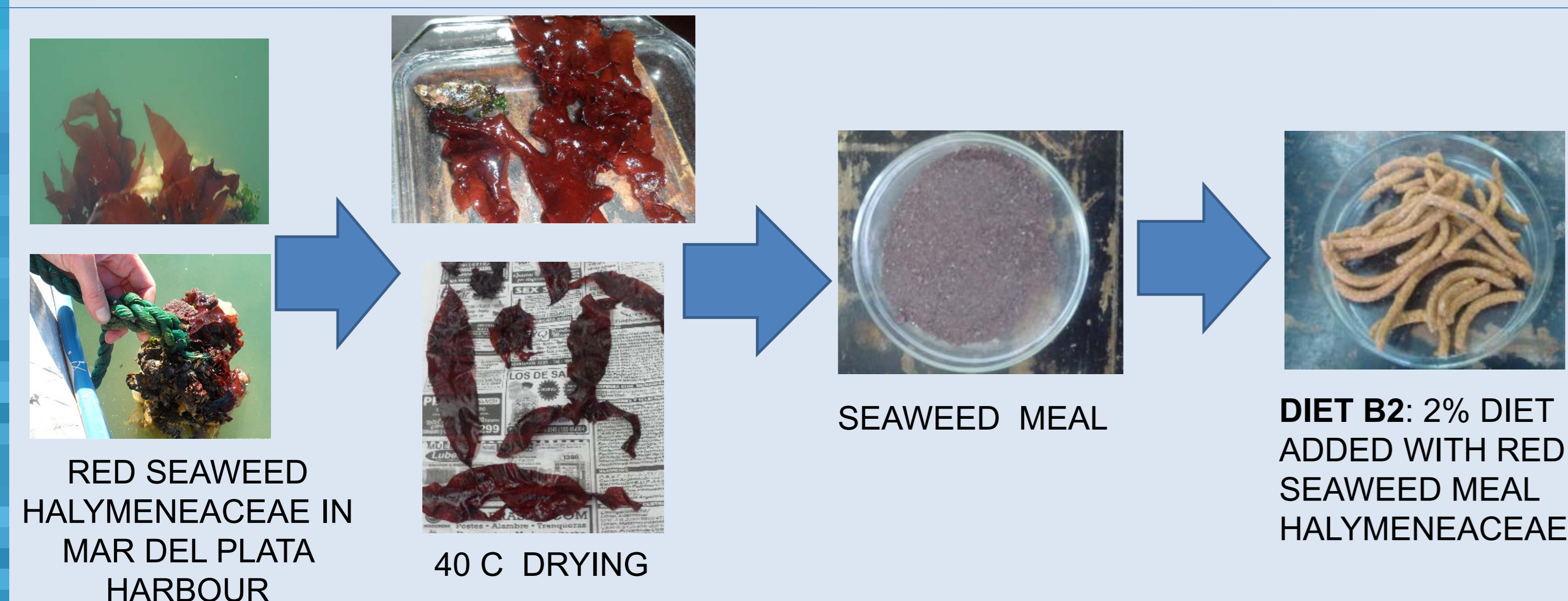


INTRODUCTION

During the past two decades, it has shown an increase in ultraviolet radiation (UVR) and particularly the UVB (280-315nm) above Earth's surface. There is some evidence that UV-B radiation (280-315 nm) and the shorter wavelengths of UV-A (315-400 nm) can significantly affect the biota in waters up to 20 m deep and have adverse effects on aquatic organisms such as damage in the genetic material and high mortality. It has been shown that many species of seaweeds synthesize and accumulate high concentrations of photoprotective compounds and may constitute an interesting alternative as a supplement in aquaculture feeds. In the present work the effects of UVR were studied in the model animal *Palaemon macrodactylus* which is a successful invader, known as the Oriental Shrimp, native to estuaries and coastal waters of the Northwest Pacific. In the south western Atlantic, the species was found in Mar del Plata harbour, Argentina, probably introduced from the Pacific with discharged ballast water.

The aim of this study was to determine the bioaccumulation of photoprotective compounds (PPC) from diets added with red seaweeds meal of the family Halymeneaceae on juvenile *P. macrodactylus* and its possible protective role under conditions of stress by UVR.

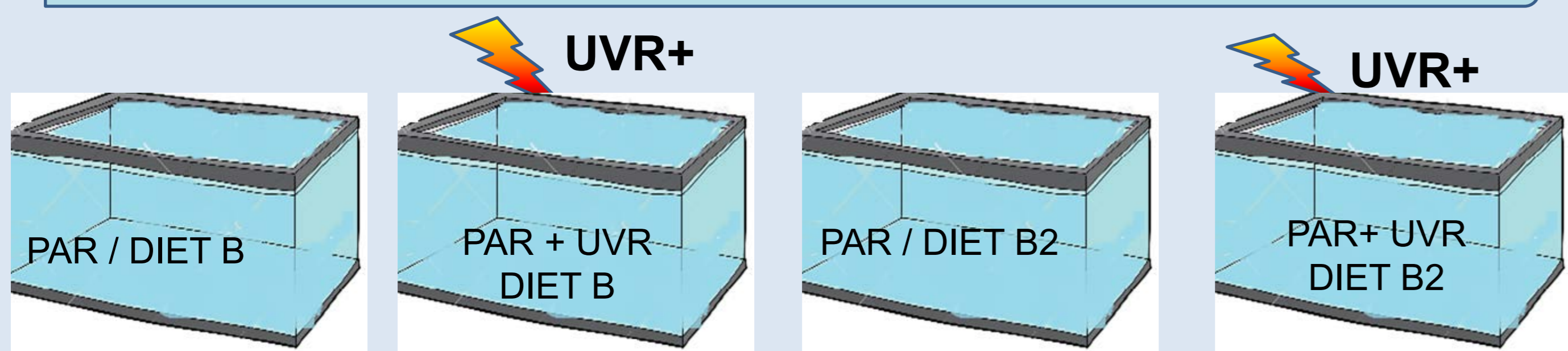
MATERIALS AND METHODS



COMPOUNDS ACCUMULATION STAGE (15 DAYS)

BASAL DIET B		DIET B2	
Ingredients	g/100g dry feed	BASAL DIET + 2G RED SEAWEED MEAL	
Fish meal	48		
Soybean meal	17		
Corn starch	20		
Wheat brand	8.5		
Fish oil	2		
Fish lecithin	2		
Soybean lecithin	0.5		
Cholesterol	0.5		
Vitamins	0.5		
Squid protein	1		

RADIATIONS TRETMENTS (7 DAYS)



Survival
Percentage of weight gain (PWG)
Concentrations of photoprotective compounds PPC and carotenoids

RESULTS

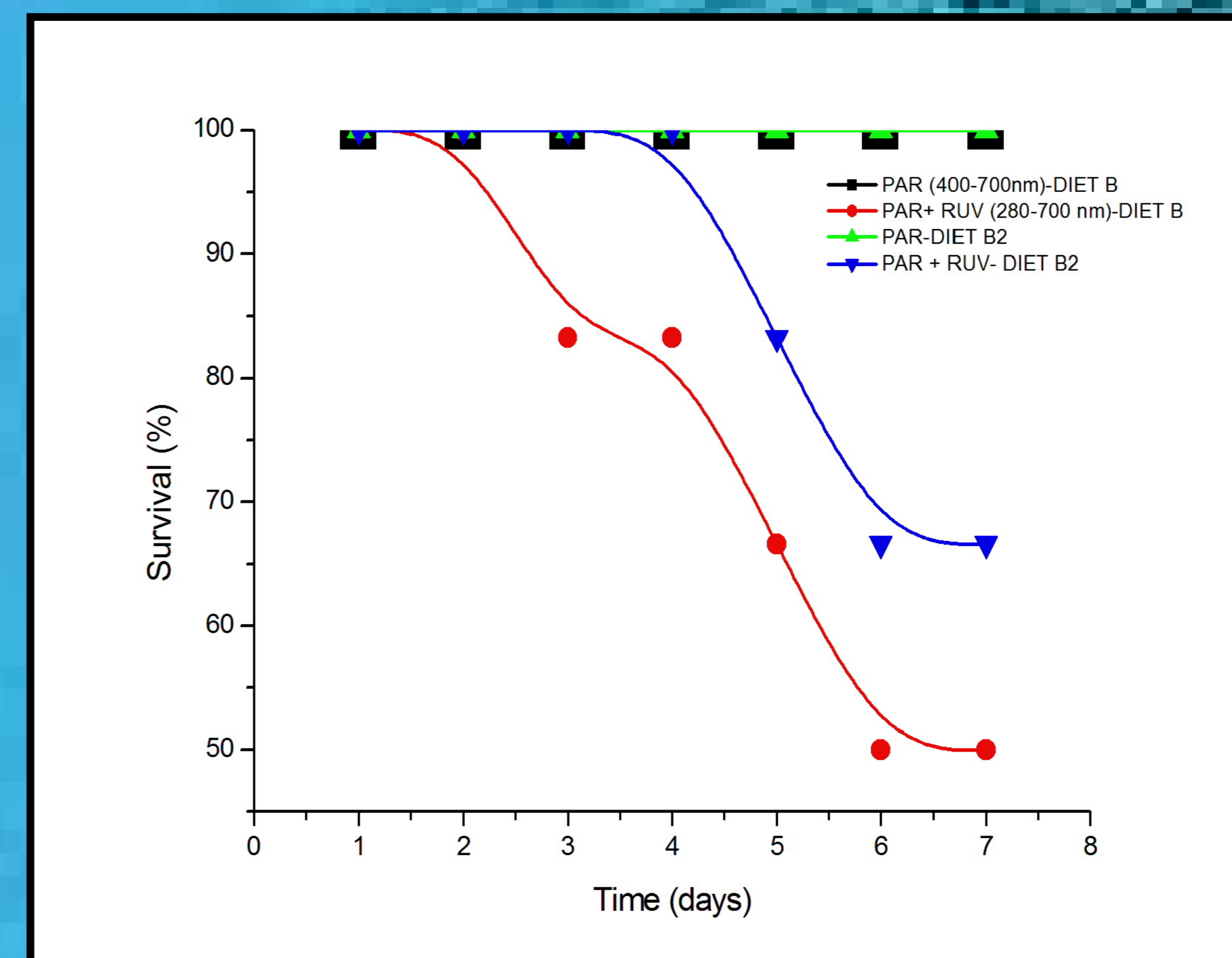


Fig 1: *Palaemon macrodactylus* survival after 7 days of exposition at the different treatments.

Table 1: Initial mean weight (IMW), final mean weight (FMW) and percentage increase in weight (PIW) of *Palaemon macrodactylus* after 7 days of exposition.

TREATMENTS				
	a-PAR (400-700nm)-DIET B	b- PAR + UVR (280-700 nm) DIET B	c- PAR -DIET B2	d- PAR+RUV- DIET B2
IMW	0,18±0,07	0,18± 0,05	0,18±0,07	0,15±0,04
FMW	0,16±0,04	0,18 ±0,04	0,22± 0,08	0,156± 0,04
PIW	12,5	0	22	4

Concentrations of PPC and carotenoids

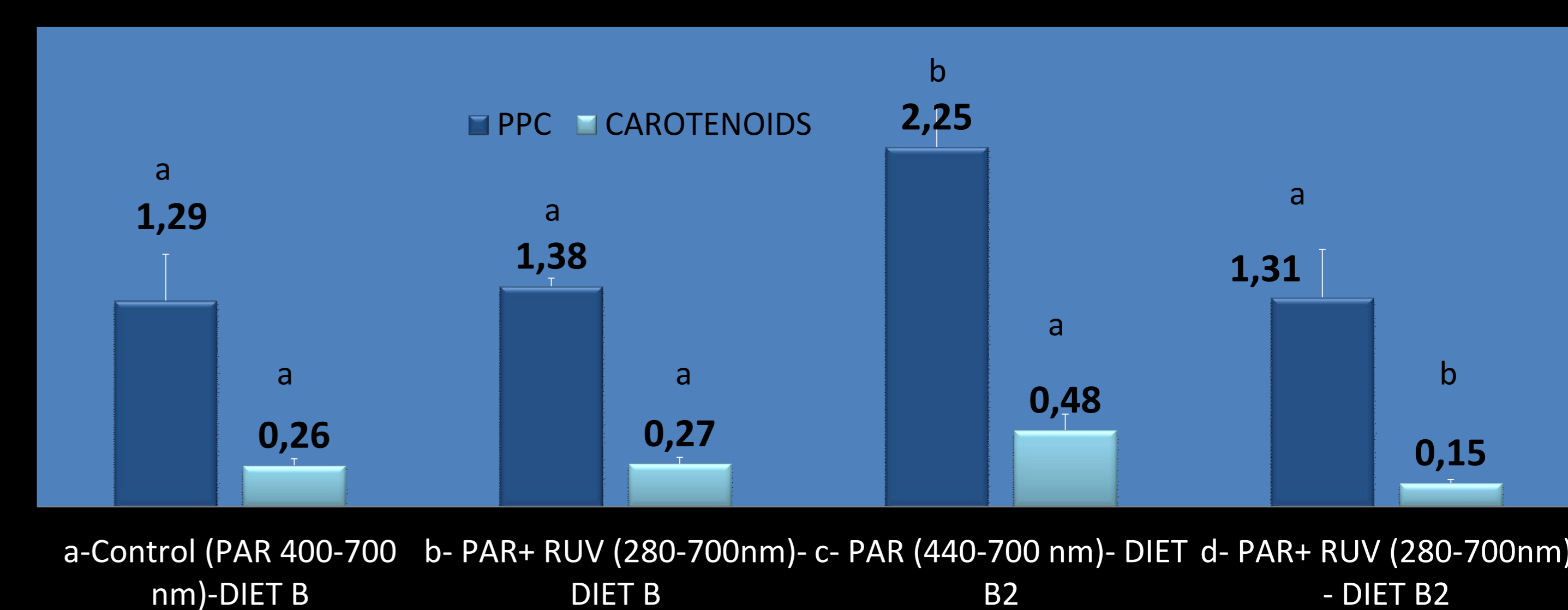


Fig 2: Concentration of photoprotective compounds and carotenoids in tegument after 7 days of exposition: Carotenoids 464 nm (OD g tissue⁻¹), Photoprotective compounds 321nm (OD g tissue⁻¹). The superscripts (a,b) indicate differences between treatments (ANOVA p ≤0.05).

CONCLUSIONS

These results suggest that a diet added with red seaweeds rich in photoprotective compounds constitutes an interesting alternative, not only for its contribution to a better physiological state of animals under stress conditions by UVR, but also for the particularity of being invasive species with potential commercial use.