**General context**

Life history traits include all survival and reproductive strategies taken by organisms, such as sex ratios, growth rates or reproductive behaviors (Brown et Choe 2019). As being inheritable characteristics, they are under sexual selection and their evolution follows fitness maximization theory. Consequently, the most optimal life history traits tend to spread among populations and stabilize (Brommer 2000; Brown et Choe 2019).

Courtship was mainly considerate as a way for individuals of the same species to recognize, before engaging in copulation (Andersson 1996). But many studies have shown it’s implication in mating outcomes and mate selection, where morphological and behavioral traits were often indicator of mate’s quality and are thus driven by sexual selection (Johnstone 1995; Eberhard, Machnis, et Uhl 2020). This mate selection mechanism is widely described from the female perspective. Indeed, females reproductive success is limited by their number of gametes and by the important energic cost associated with reproduction, whereas males are limited by their number of mating (Andersson 1996). However, it has been reviewed that as a consequence of the energetical cost of sperm production and sperm competition, males could manage their involvement in mating by assessing the mating status and the fecundity of a female (Wedell, Gage, et Parker 2002).

Spiders (O. *Araneae*) exhibit an extreme form of reproductive behavior, where in many species, females cannibalize their mate. The *Dolomedes* genus (F. *Pisauridae*) is known for this important presence of sexual cannibalism where females tend to be extremely aggressive towards male (Zimmermann et Spence 1989). In this context, in addition to considering the profitability of their investment during courtship, males must ensure that they do not die during the process.

**Scientific question and hypothesis**

As little is known on the *Dolomedes minor* species, the objective of this study is to assess whether or not males can evaluate the mating state of the female (already mated or virgin) and adjust their courtship consequently. It might be expected that males presented to a mated female will spend less time during courtship and exhibit specific patterns in their behavior in order to allocate less time and energy. Also, that courtship with mated females will be more likely to end with the male getting killed as they might be less involved in their courtship.

**Expected Material & Methods**

Penultimate males and females from *D. minor* were already collected on field at different points near the Waikato River (New Zealand) and were molted to adult stage in laboratory to ensure that they were virgin. Mating trials were also already performed and recorded between males and females. 10 virgin females were selected to mate with males, then an additional mating trial was performed with