

# Time Needed to Eat Mother or Mate

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## Abstract:

This data observes the relative time it took for spiders and the praying mantis to eat their mate, and how long the spider offspring took to eat their mother. The data analyzed was from 3 videos of each act of cannibalism that were timed and compared to one another. It was found that the offspring of spiders eat their mother fastest than the spiders and praying mantis eating their mate.

## Introduction:

Cannibalism is the act of eating one's same species for food (Cannibalism, 2020). Sexual cannibalism is mostly the act of a female eating its male partner either before, during, or after mating (Birkhead, et. al., 1988). Matriphagy is the act of offspring eating their mother (Matriphagy, 2020). Organisms that undergo sexual cannibalism are some species of spiders, most praying mantis, and scorpions (Birkhead, et. al., 1988). Organisms that undergo matriphagy are some species of spiders, insects, nematode worms, and scorpions (Matriphagy, 2020). Most females behave in sexual cannibalism to help provide nutrients to their offspring or help produce the nutrients necessary to develop the fertilized eggs (Birkhead, et. al., 2020). However, some have theorized that females under sexual cannibalism simply because they are hungry and are starving (ANI, 2009). Spiders that eat their mother and act in matriphagy are observed to grow three times faster than other spiders that do not and are more ready to become hunters on their own faster (Toyama, 2001).

## Methods:

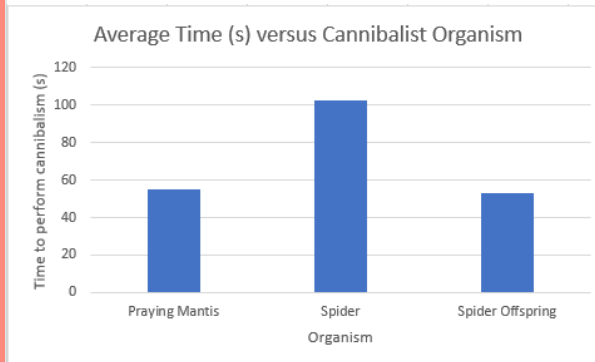
I analyzed the relative amount of time it takes for a species to undergo cannibalism, either sexual or matriphagy. This was done by looking at 3 videos for each of the following: sexual cannibalism of the Praying Mantis, sexual cannibalism of spiders, and the matriphagy of spiders. The relative amount of time it took for the species to undergo cannibalism was observed and compared with one another.

## Results:

Table 1: Data collected

Organism	Time needed to perform cannibalism (s)			Average Time (s)
	Video #1	Video #2	Video #3	
Praying Mantis	99	37	30	55.3
Spider	7	274	26	102.3
Spider Offspring	78	27	54	53

Figure 1: Compares time it took for each organism to perform cannibalism



## Interpretation:

In this study, it was found that the spider offspring performed matriphagy and consumed their mothers the fastest than the spiders and praying mantis eating their mate. The spider offspring consumed their mother in an average time of 53 seconds, while the praying mantis consumed their mate in an average time of 55.3 seconds. The spiders consumed their prey the slowest in an average time of 102.3 seconds.

## Conclusion:

The spiders consumed their prey the slowest because they are able to "store away" their food for later in their web after wrapping their mate in silk. The praying mantis requires more time than the spider offspring to perform cannibalism because the praying mantis is significantly larger. One female praying mantis eats their mate that is significantly larger than spiders. The spider offspring eat their mother the fastest because of the multitude of offspring that is feeding on the mother at the same time. Each offspring injects their venom in the single mother, dissolving her inner organs, and the hundreds of spider offspring consume the mother at the same time. The spider offspring feed on their mother for nutrients to help grow and to help teach them to become hunters. The praying mantis and spider both consume their mates to help develop the fertilized eggs and to provide nutrients to the offspring. These strategies help improve the survival of their offspring to help ensure that the mother will be replaced by a breeding daughter and that an outbreeding son will be replacing her mate.

## References:

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