P095 Factors affecting nest predation in common eider

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The down feathers of eider ducks (*Somateria mollissima*) are used commercially to fill i.e. duvets and pillows. Eiderdown is therefore a valuable product and collected by many farmers in Iceland. By minimizing nest predations it is possible to improve eiderdown yield. The aim of this study was to assess which factors affect predation rate in eider colonies. The research was conducted by visiting each colony twice throughout the incubation period, and by using cameras with motion sensors. Nest predation rate was 14% (n=157 nests). Identified predators were ravens (*Corvus corax*) and great black-backed gulls (*Larus marinus*). The factors affecting predation rate were nest surroundings, nest initiation date and frequency of visits by predators. Predation was lower if nests were surrounded by angelica (*Angelica archangelica*). Near the end of the incubation period, the angelica will overgrow nests and cover them from above and thus hide the nests from avian predators. Predation rate was highest on nests initiated early in the season, and decreased linearly as the incubation period progressed. Early in the season there are proportionally more predators relative to number of nests, vegetation is less advanced and nest density is low and therefore there is limited benefit from nearby eiders or gulls. Predator visits were more common on nests which eventually were predated, or on average 1.7 times/day compared to 0.7 times/day on successful nests. Predators possibly identify nest locations and visit to see if the female eider is present, and eventually try to flush her of the nest.

P096 Genotype by genotype interactions govern pathogen-hyperparasite relationships

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Many organisms employ a parasitic lifestyle and, through their antagonistic interactions with host populations, have major impacts on human, agricultural and natural ecosystems. Parasite dynamics are generally considered within a framework of coevolution with their hosts and competing parasites, mediated by the abiotic environment. However, most parasites and pathogens are also likely to host parasites of their own, i.e. hyperparasites. The impact of hyperparasites on disease epidemiology, and the ecological and evolutionary relationships between parasites and hyperparasites remains greatly underrepresented in the current literature. Here, we use laboratory experiments to demonstrate the impact of a mycoparasitic fungus (*Ampelomyces sp*) on key life-history traits of a powdery mildew (*Podosphaera plantaginis*). Further, we determine if there is a signal of coevolution between the parasite and hyperparasite. We show that hyperparasite infection success is governed by pathogen-hyperparasite genotype combinations and that hyperparasite infection has disparate and surprising effects on key pathogen life-history traits. Finally, we combine these laboratory findings with observations of hyperparasite occurrence and pathogen genetic structure across a natural plant pathogen metapopulation. Our results lend insight to the role of hyperparasites in the ecology and evolution of natural disease and will be important for the application of hyperparasites as biological controls in agriculture and human medicine.