Eksempel på en opgave, der er opbygget som et argument

Det følgende er et ST-eksempel på argumentationsmodellens dele i en videnskabelig artikel. Eksemplet er hentet fra artiklen *Cold-acclimation increases the predatory efficiency of the aphidophagous coccinellid Adalia bipunctata* (Sørensen & Kristensen, 2013, s. 87-94). Indholdet er udarbejdet af Tine Wirenfeldt Jensen.

Påstand (uddrag fra introduktion og konklusion)

Fra introduktionen: We hypothesized that (1) developing at a particular temperature enhances the predatory performance of ladybirds in terms of an increased feeding rate on aphids at that temperature (according to the beneficial acclimation hypothesis).

Fra konklusionen: Our results showed that ladybirds acclimated to the temperature at which they were tested, performed significantly better, in terms of consuming aphids, compared to ladybirds acclimated to a different thermal environment.

Belæg (Egne forsøg og figurer, uddrag fra diskussion)

We found that a laboratory bred population of *A. bipunctata* responded plastically to developmental temperature and that this response strongly enhanced its ability to consume aphids at that particular temperature (Figs. 1 and 2 and Graphical Abstract). The response to developmental temperature also affected other fitness components, and costs of cold acclimation were observed in several traits.

Hjemmel (Uddrag fra materiale og metoder)

For estimating heat resistance, a knockdown test was used (see e.g. Kellett et al., 2005). Thirty adult ladybirds (15 males and 15 females) from each acclimation temperature were taken directly from the predatory performance experiment and tested. Only individuals that had experienced the same temperature during rearing and predation test were used (Table 1). The ladybirds were placed individually in 5 mL glass vials and exposed acutely to 43 C by immersion in a preheated water bath. Initially the high temperature exposure caused the ladybirds to become very active, but soon they became increasingly lethargic. Heat knockdown time was scored as the time it took for individual ladybirds to lose muscular function.

For statistical analysis JMP (8.0 by SAS Institute) was used. The untransformed data from the predatory performance tests were in all cases normally distributed (tested by Shapiro–Wilk W-tests) and showed homogeneity of variances (confirmed with Bartlett's tests).

[...] For the graphical presentations the consumption data have been transformed to percentages (Fig. 1). Chi-square tests were used to test the effect of rearing temperature on pupal survival.

Gendrivelse (Uddrag fra diskussion)

Although not significant, results from the predatory performance study performed at natural fluctuating temperatures revealed the same trend; ladybirds acclimated at lower temperatures consumed more aphids than ladybirds acclimated at higher temperatures. The trend was in the predicted direction since the ambient temperature was lower than any of the rearing temperatures.

Rygdækning (Uddrag fra diskussion)

Lower statistical power due to a lower number of replicates in the outdoor experiment compared to the laboratory microcosm experiments might explain the lack of significance in the experiments performed outdoor. Overall results from the microcosm experiments suggest that acclimation can be utilized in biological control systems.

Styrkemarkør (Uddrag fra konklusionen)
Our results showed that ladybirds acclimated to the temperature at which they were tested, performed significantly better, in terms of consuming aphids, compared to ladybirds acclimated to a different thermal environment.