

Master project: How diet alters the gut microbiome of a songbird

The gut microbiome

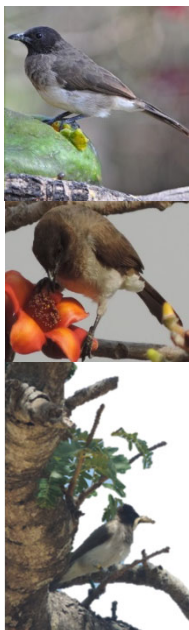
Gut microbes aid proper functioning of the host digestive system and other physiological processes like immune function. However, gut microbes are rapidly altered by host diet and this may be important for animals that change their diet due to variation in food availability or annual cycle stage.

Diet shift in birds

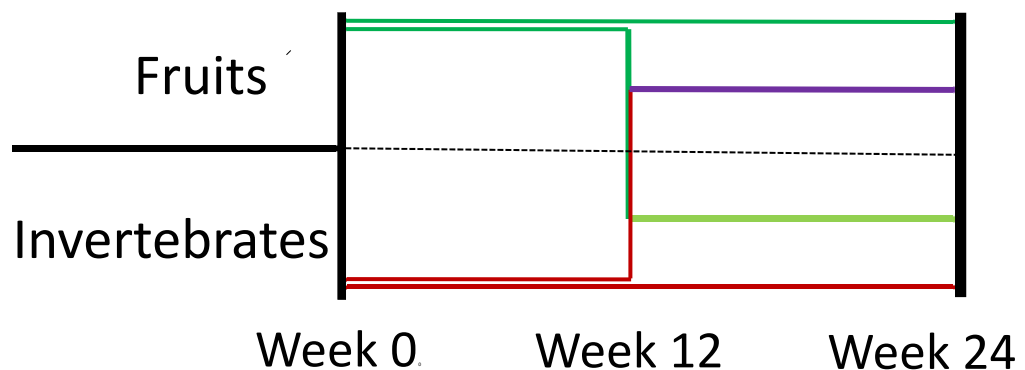
Fruits and invertebrates are among the main diet items of birds, and birds may shift between both seasonally due to seasonal availability, migration or of habitat alteration.

Project aim

Determine how fruit and invertebrate diets specifically affect the gut microbiome of an omnivorous tropical songbird, the Common Bulbul *Pycnonotus barbatus*.



Experimental set-up



Two groups of Common Bulbuls were fed fruits or invertebrates for 24 weeks. Half of each group was switched to the alternative diet after 12 weeks while the other half continued on the same diet. Cloacal swabs were collected fortnightly and frozen gut microbe DNA extraction.

Student will

- Extract DNA from cloacal swabs of Common Bulbul
- Prepare DNA extract for high throughput sequencing
- Analyse gut microbiome data generated from sequencing

When and contact

- Start: October to November 2019 or earlier
- Duration: six months
- Contact Maurine Dietz (m.w.dietz@rug.nl), Chima Nwaogu (c.j.nwaogu@rug.nl) or Irene Tieleman (b.i.tieleman@rug.nl)