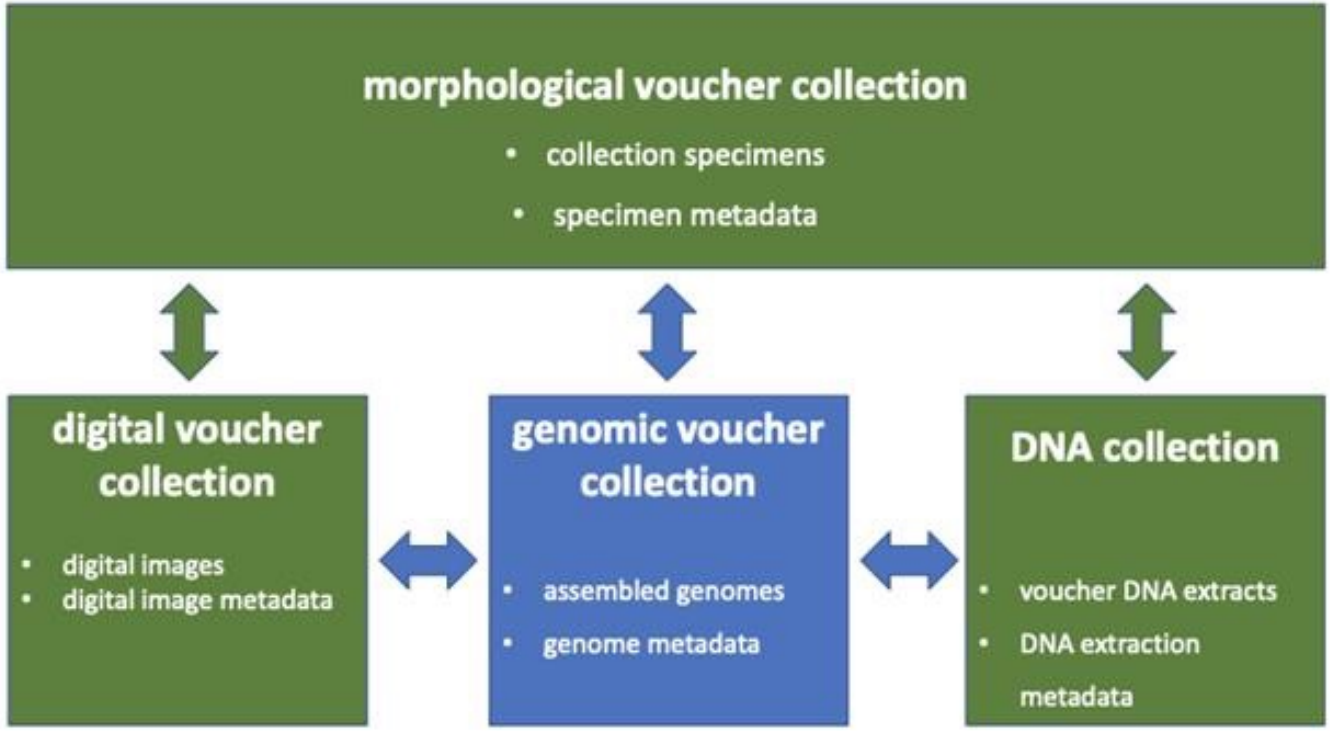
InsectMOoD

BRAIN-be 2.0, B2/202/P2/InsectMOoD

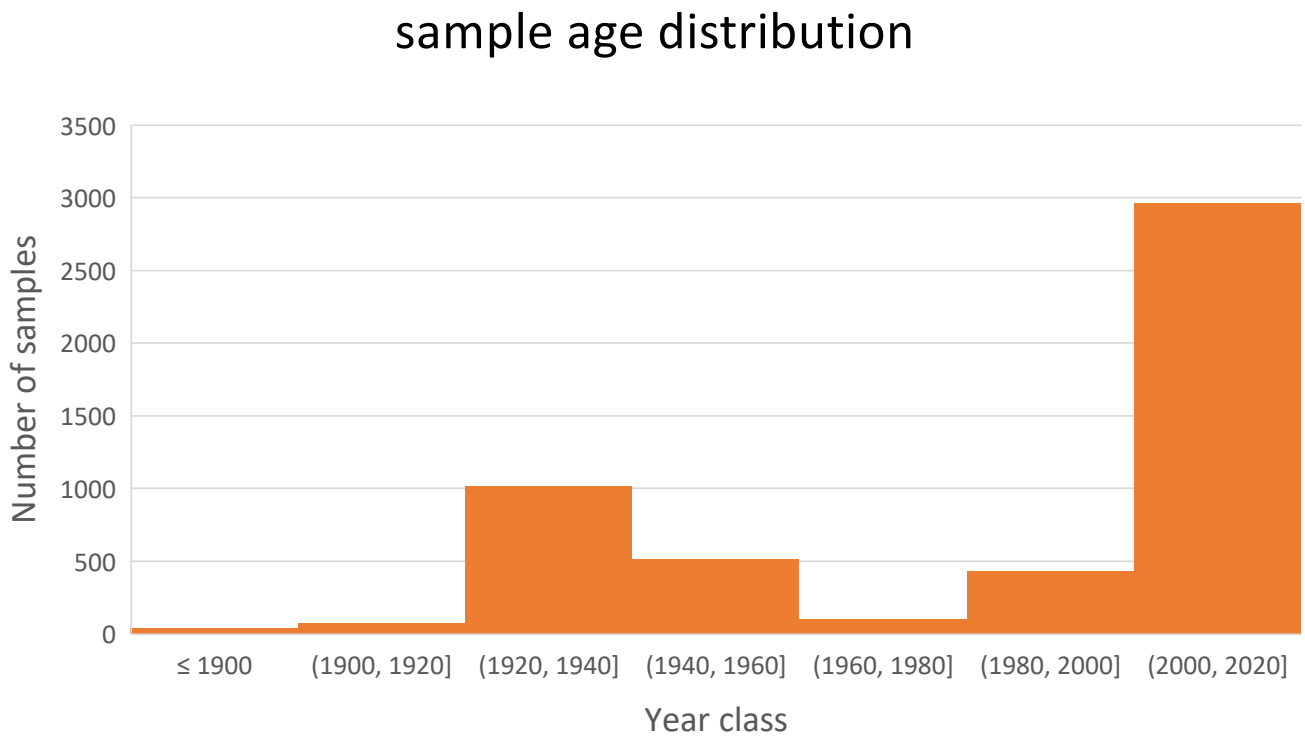
project kick-off meeting

July 1st, 2021



Public database: http://darwinweb.africamuseum.be/search_specimens

tephritid collections RMCA + RBINS
5,000 samples – 145,000 specimens



syrphids collection RMCA

> 11,000 African specimens

> 350 species

sampled from 1911 to 2021.

> 70% of vouchers (approx. 250 species) sampled less than 50 years ago

Wet lab methodology

DNA extractions	DNeasy Blood & Tissue Kit (Qiagen) …. ?
Library preparation	Illumina kit (NEBnext or Truseq)
WGS x10	

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company requirements for library preparation

NEBNext DNA Library Prep

0.5-1 µg DNA

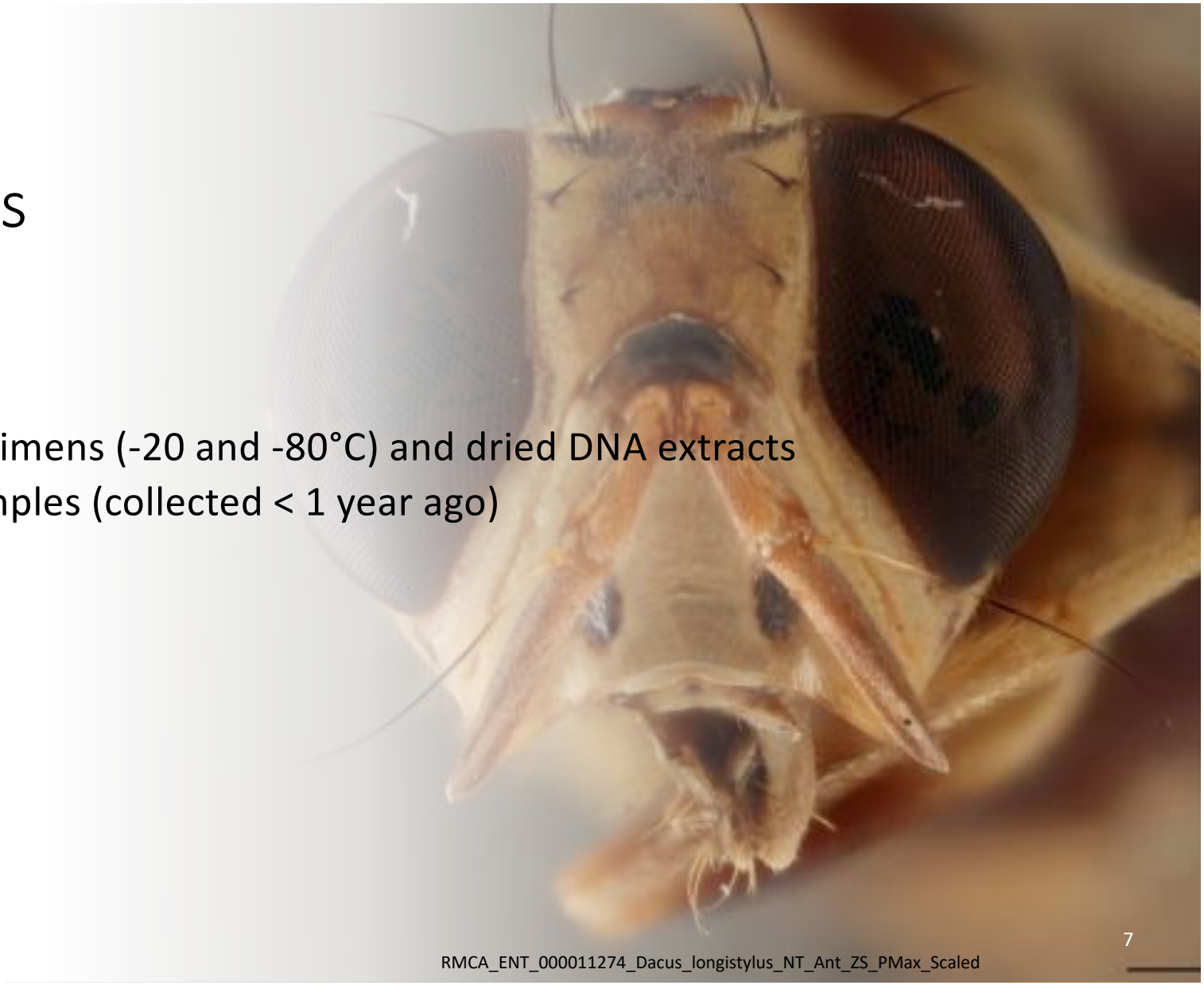
Low-input DNA kit ?

0.03-0.2 µg DNA

target collections and genera

- Tephritidae (Diptera)
  - Dacus: frozen specimens (-20 and -80°C) and dried DNA extracts
  - Ceratitis: fresh samples (collected < 1 year ago)
  - …

- Syrphidae (Diptera)
  - Eristalinus
  - …



RMCA_ENT_000011274_Dacus_longistylus_NT_Ant_ZS_PMax_Scaled

Modeling HTS performances

GLM approach

- sample age
- sample preservation
  - -20°C EtOH
  - -80°C EtOH
  - pinned voucher
  - dried DNA extracts
- sample history (e.g. trapping vs rearing)
- geographic origin
- …

Effect on

- DNA concentration
- Fragmentation
- RNA contamination

Effect on

amount of (quality) reads

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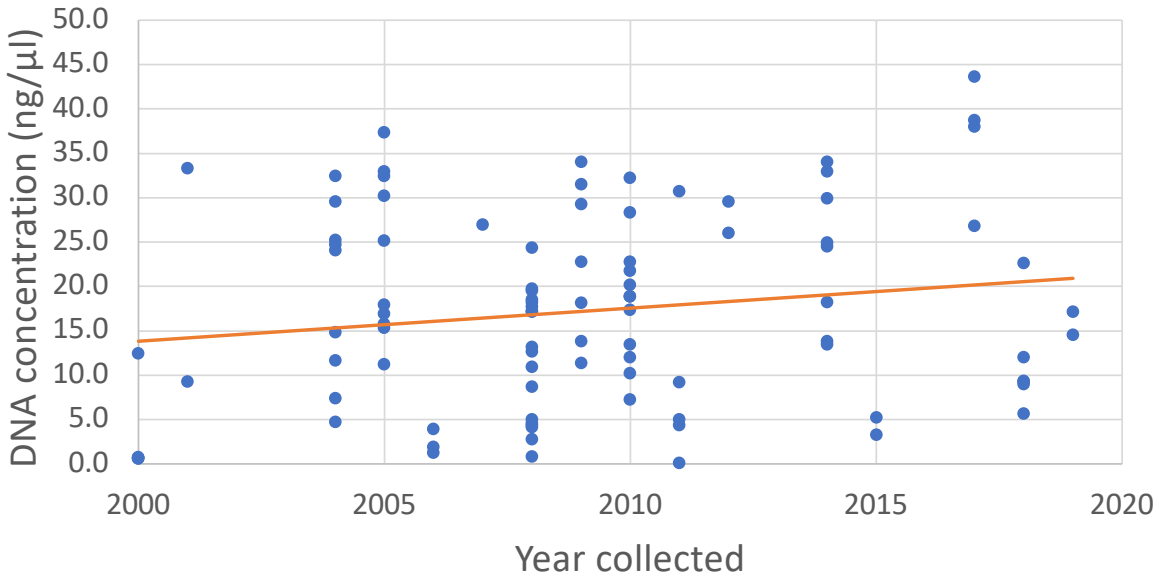
preliminary data



Thank you for your attention!

any feedback will be great appreciated

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