BIPAA, Bioinformatics Platform for the Agroecosystems Arthropods.
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To cite this version:
Stéphanie Robin, Fabrice Legeai, Anthony Bretaudeau. BIPAA, Bioinformatics Platform for the Agroecosystems Arthropods. JOBIM 2023 - Journées Ouvertes en Biologie, Informatique et Mathématiques, Jun 2023, Plouzané (Brest Métropole), France. pp.1-1, 2023. hal-04176786

HAL Id: hal-04176786
https://hal.inrae.fr/hal-04176786
Submitted on 26 Jan 2024

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BIPAA is a bioinformatics platform from the French National Institute for Agricultural, Food and Environment (INRAE) to assist genomics and post-genomics programs developed on insects associated to agroecosystems. It is located in Rennes (France) and is integrated in GenOuest platform infrastructure (https://www.genouest.org/).

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Data analysis
BIPAA supports a network of scientists from various french labs for analyzing their genomics data. BIPAA proposes personal guidance for developing scripts, running complex workflows on a computing cluster.

Topics:
- Genome assembly and annotation
- Transcriptomics analysis and non-coding RNA
- Transposable elements
- Genomes comparison (Orthology)
- Variant identification
- Genomics and epigenomics data integration

BIPAA contributes to the national Galaxy server usegalaxy.fr

Information systems
BIPAA Information systems are based on the BEAURIS project https://gitlab.com/beaur1s/beauris and Galaxy Genome Annotation https://galaxy-genome-annotation.github.io/

BEAURIS: How does it works?
- Each genome is a multi-container application.
- This system permits automatic deployment of new genome and update.
- This is a reproducible, re-usable, modular and extensible system.

It organizes and manages genomics data generated by various international groups and offers textual and graphical tools for browsing and querying genomics data.

BIPAA hosts multiple arthropod genomes

Lepidopterans: 17 species
- LepidoDB (17 lepidopterans, 12 aphids)
- ParWaspDB (15 parasitoid wasps)
- ColeoDB (3 coleoptera, 1 crustacea)
- CrustaDB
- TickDB (4 ticks)

Aphids: 12 species
- Aphidbase

Transposons
- Transposable elements

Gene Ontology

Sequence information

Orthology and synteny

Blast

Collaborations
- Involved in various bioinformatics research projects, in collaboration with teams in Inria/IRISA in Rennes:
  - GenScale (complex genome assembly, variant identification)
  - DyliSS (data integration and mining, Askomics)
- Associated with 3 national networks of INRAE: BAPOA (Biologie Adaptative des Pucerons et Organismes Associés), ADALEP (Adaptation à l’environnement biotique chez les lépidoptères) and REacTION (Réseau d’échange sur les mécanismes Épigénétiques qui façonnent les interactions)
- Involved in international consortia and insect genome projects (15k: sequencing of 5000 insect genomes)
- More than 700 users are currently listed

Trainings
BIPAA is involved in training sessions in partnership with the GenOuest bioinformatics platform and the BARIC (Bioinformatique pour l’Analyse, la Représentation et Intégration de Connaissances) community of INRAE, and in tutorials development in Galaxy Training Network (GTN).

Project 2020-1-NL01-064717 is funded with the support of the Erasmus+ programme of the European Union. Their funding has supported a large number of tutorials within the GTN across a wide array of topics.