Assignment on Biotechnology and Biodiversity (BIT 401), 2079

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Task

Construct a database of "Genetic diversity of wild and related species/genera of important cultivated crops with notes on molecular genetic studies".

Guidelines

- Database need to be submitted in 'xlsx' (Microsoft excel) and "pdf" format. (Both contain same data, but 'pdf' version may be polished to look better. Graphs may be included in the 'pdf' version.)

- Each row displays extended information about the relevant "Lower taxa" or "taxa identifier".

- Database should (at the minimum contain) following attributes (columns) of information[1]:

  - SN
  - Crop
  - Scientific name
  - Family
  - Higher taxa 1
  - Higher taxa notes
  - Lower taxa 1 (Subspecies/Landrace/Variety/Population/Genotype/Cultivar/...)
  - Lower taxa 2 (Subspecies/Landrace/Variety/Population/Genotype/Cultivar/...)
  - Lower taxa notes
  - Geographical distribution
  - Nomenclature synonyms
  - Nomenclature references
  - **Major characters relevant for use in crop improvement**

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[1]Attributes in **Boldface** deserve citation of each information with corresponding reference in the "References" column.

- – Number of chromosomes
  - – Genome constitution
  - – **Ancestry/Evolutionary relationship with cultivated species group**
  - – **Notes on genome (ploidy, domestication process)**
  - – **Major findings and references for genetic studies**
  - – **Notes about specific genes and its functions**
  - – References

- Crops

1. Rice
2. Wheat
3. Maize
4. Fingermillet
5. Minor millets
6. Buckwheat
7. Barley
8. Soybean
9. Blackgram
10. Lentil
11. Groundnut
12. Pea
13. Chickpea
14. Pigeonpea
15. Potato
16. Sugarcane
17. Jute
18. Cotton
19. Brassica (with focus on rapeseed, broad leaf mustard and radish)
20. Sunflower
21. Sesame
22. Tea
23. Coffee
24. Chilly/pepper
25. Tomato
26. Garlic
27. Onion
28. Taro
29. Mango
30. Apple
31. Banana
32. Grape
33. Pear
34. Citruses
35. Pomegranate
36. Chestnut
37. Strawberry
38. Raspberries and blueberries
39. Guava
40. Pumpkin
41. Carrot
42. Cucumber
43. Gourds (Bottlegourd, spongegourd, bittergourd, pointedgourd, snakegourd)
44. Amaranthus
45. Oat

- Maintain the image (self photographed or acquired from the internet, of high quality: >400x400 pixels and <1200x1200) of respective variant in distinct folder for each crop whenever possible. Rename image file to include identification of corresponding taxa under which it's description is recorded.

Allotment

Each student is required to explore a unique crop, maintain a database information on it. The allotment of crop to student is made in random.

Assignment due and submission

The assignment is due April 15, 2023 (12:00 PM). It is required to be submitted through email (ddhakal.rookie@gmail.com). Each assignment should accompany an xlsx file, a pdf file and a zip file (contains all the properly named images collected). A template 'xlsx' file called 'database_template.xlsx' to be completed for each crop is provided herewith. While submitting over the email the 'xlsx' file should be named 'student_name-database-cropname.xlsx' (for example: 'john_doe-database-mustard.xlsx'), the 'pdf' file should be named 'student_name-database-cropname_extended.pdf' and the 'zip' file should be named 'student_name-database-cropname-images.zip'.