Supplementary material

A   MAP concepts into ontologies

Contents

Note: The selected best match is in colour green.

1. HABITAT DESCRIPTION

1.1. WILD HABITAT

➢ **Agroportal**

- Class wild habitat CO_020:0000044.
    - Ontology: Multi-Crop Passport Ontology.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000044
    - URI: http://www.cropontology.org/rdf/CO_020:0000044
    - When we try to find "wild habitat" we get one ontology, but the link does not work.
    - If we try to find "wild habitat" or CO_020:0000044 (www.cropontology.org) there is no result and is the same situation with all the Crop Ontology links.

➢ **LOV**

- Property habitat: associates a taxon rank with a habitat in which it may typically be found.
    - Ontology: Wildlife Ontology.
    - URI: https://purl.org/ontology/wo/Habitat
    - The URI returns a 404-error message but if we search this concept in the ontology (https://www.bbc.co.uk/ontologies/wildlife-ontology/) we can find it.
- Class habitat: A habitat, or biome, is the type of environment in which plant and animals live. Habitat is dictated by what kinds of plants grow there, the climate and the geography. Rainforest, coral reefs and the tundra are all habitats where particular kinds of plants and animals might be found.
    - Ontology: Wildlife Ontology.
    - URI: https://purl.org/ontology/wo/Habitat
    - This URI goes to the property habitat mentioned above, so maybe the URIs are wrong.

1.1.1. FOREST

➢ **OLS and Ontobee**

- Class forest ENVO_00000111: An area with a high density of trees. A small forest may be called a wood. The definitions of forest can vary greatly, and different classes will be needed to support the major categories. Tree cover alone is not enough to distinguish between forests and plantations. The international definition proposed by the 2010 FAO Forestry Resource Assessment: "land spanning more than 0.5 ha with trees higher than

5 metres and canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use." - FAO. 2010. Equivalent: woodland area.

- Ontologies: ENVO, ECTO, EUPATH, MICRO, AGRO, GENEPIO, RBO, MONDO, GAZ, FOODON.

- Class forest ecosystem ENVO_01001243: An ecosystem which is determined by communities of plants with a tree growth form and in which members of those communities form continuous or discontinuous regions of canopy cover.

    - Ontologies: ENVO, ECTO, AGRO, GENEPIO, RBO, MONDO, GAZ, FOODON.

➢ **LOV**

- Class osr:Forest (osr).

    - Ontology: Ontomedia.

    - URI: http://contextus.net/ontology/ontomedia/core/space#Forest

    - This link returns the following message "That page can't be found".

- Class lgdo:Forest (lgdo).

    - Ontology: LinkedGeoData.

    - URI: http://linkedgeodata.org/ontology/Forest

    - This link seems to correspond to a GitHub page but returns a 404 error message.

- Class pext:Forest (pext): Dense growths of trees, plants, and underbrush covering a large area. [American Heritage Dic. of the English Language, 4th ed.] We use this category for forest reserves; and for national forests. Omitted ADL sub-classes: Petrified forests, Rain forests, Woods (the sub-classes collapsed here).

    - Ontology: Proton.

    - URI: http://www.ontotext.com/proton/protonext#Forest

➢ **Agroportal**

- Concept Forest: A vegetation community dominated by trees and other woody shrubs, growing close enough together that the tree tops touch or overlap, creating various degrees of shade on the forest floor. It may produce benefits such as timber, recreation, wildlife habitat, etc.

    - Thesauri:

        a. AnaEE Thesaurus (ANAEETHES).

            URL: http://opendata.inra.fr/anaeeThes/c3_2626

        b. GEneral Multilingual Environmental Thesaurus (GEMET).

            URL:https://www.eionet.europa.eu/gemet/en/concept/3406

1.1.2. SHRUBLAND

➢ **OLS and Ontobee**

- Class scrubland ENVO_00000300: Area covered with low-growing or stunted perennial vegetation and usually not mixed with trees.
    - Ontologies: ENVO, MICRO, AGRO, ECTO, FOODON, GENEPIO, MONDO, RBO.

➢ **LOV**

- Class pext:Scrubland: An area of low trees, bushes, and shrubs stunted by some environmental limitation.
    - Ontology: Proton.
    - Link: http://www.ontotext.com/proton/protonext#Scrubland

➢ **Agroportal**

In this case, we get a few links that do not work.

    a. Thesaurus: Biodiversity Thesaurus (BIODIVTHES).
- In this thesaurus we can see the hierarchy tree but there is no definition.
- URL: http://data.loterre.fr/ark:/67375/BLH-ZVB9P3HR-M

    b. Ontology: OntoBiotope (ONTOBIOTOPE).
- There is no definition in Agroportal and the following link returns a 404 error.
- URL: http://purl.obolibrary.org/obo/OBT_004179

    c. Ontology: Multi-Crop Passport Ontology (Class shrubland CO_020:0000046).
- Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000046
- In this portal we can find another link that corresponds to an XML file, but we cannot extract information from it. The XML file is this:
    https://cropontology.org/rdf/CO_020:0000046

1.1.3. GRASSLAND

➢ **OLS and Ontobee**

- Class Grassland ENVO_00000106: An area in which grasses (*Graminae*) are a significant component of the vegetation.
    - Ontologies: ENVO, MICRO, AGRO, ECTO, BCIO, ENVO, FOODON, GENEPIO, MONDO, RBO.
- Class Grassland ecosystem ENVO_01001206: An ecosystem in which grasses (*Graminae*) are the dominant form of vegetation and determine the system's structure and dynamics.

- - Ontologies: ENVO, AGRO, ECTO, FOODON, GENEPIO, MONDO, RBO (from OLS).
  - Class Grassland OMIT_0028793: this term only appears in OLS and has no definition.
    - Ontology: OMIT.

➢ **Agroportal**
  - Concept Grassland: Grassland cover nearly one-fifth of the Earth's land surface. They include savannah, the prairies of North America, and the steppes of Russia and Central Asia. Grassland ecosystems support thousands of different species, above and below the ground, and have a vital part to play maintaining the ecological balance of the world.
    - Thesaurus:
      a. ANAEETHES.
         URL: http://opendata.inra.fr/anaeeThes/c3_2612
      b. GEMET.
         URL: http://www.eionet.europa.eu/gemet/concept/3733
  - Concept Grassland: Permanent or temporary grassland that is not mown and on which cattle, sheep and horses graze. To go further: the world has natural grasslands such as the Great Prairie in the American West, the Pampa in Argentina, the Veld in South Africa and the mid-mountain areas of Western Europe (Alps, Pyrenees, Massif Central, Scotland, Ireland, etc.), all of which are major cattle and sheep farming regions.
    - Thesaurus: Meat Thesaurus (MEAT-T).
    - URL: http://opendata.inrae.fr/ThViande/C99

➢ **LOV**
  - Class pext:Grassland: An area dominated by grass vegetation.
    - Ontology: Proton.
    - URI: http://www.ontotext.com/proton/protonext#Grassland
  - Class lgdo:Grassland.
    - Ontology: LinkedGeoData.
    - URI: http://linkedgeodata.org/ontology/Grassland
    - This link corresponds to a GitHub page but returns a 404 error message.
  - Class lgdo:Grasslanduse:
    - Ontology: linkedgeodata.
    - URI: http://linkedgeodata.org/ontology/GrassLanduse
    - This link seems to correspond to a GitHub page but returns a 404-error message.

1.1.4. DESERT

➢ **OLS and Ontobee**

- Class Desert ENVO_01001357: A landform which has been rendered barren or partially barren by environmental extremes, especially by low rainfall.
    - Ontologies: ENVO, ECTO, DPO, AGRO, RBO, MONDO, GAZ.
- Class Sandy Desert ENVO_00000172: A desert plain characterized by a surface veneer of sand.
    - Ontologies: ENVO, MICRO, PECO, ECTO, DPO, AGRO, GENEPIO, RBO, MONDO, GAZ, FOODON.
- Class Desert (environment) SNOMED_257597006: this term only appears in OLS and has no definition.
    - Ontology: SNOMED.

➢ **LOV**

- Class place:Desert.
    - Ontology: Purl.
    - URI: http://purl.org/ontology/places#Desert
- Class dbpedia-owl:Desert: Barren land where there is less rain.
    - Ontology: DBpedia.
    - URI: http://dbpedia.org/ontology/Desert
- Class pext:Desert**:** Regions rendered barren or partially barren by environmental extremes, especially by low rainfall. We use this category for arid regions; for bajadas; for rock deserts; for sandy areas; for sandy deserts; and for stony deserts.
    - Ontology: Proton.
    - URI: http://www.ontotext.com/proton/protonext#Desert

➢ **Agroportal**

- Concept Desert: A wide, open, comparatively barren tract of land with few forms of life and little rainfall.
    - Theusaurus: GEMET.
    - URL: https://www.eionet.europa.eu/gemet/en/concept/2103
- On the other hand, we have a few links from which we cannot extract information.
    a. Concept Desert.
        - Thesaurus: BIODIVTHES.
        - URL: http://data.loterre.fr/ark:/67375/BLH-D7V4HH72-N
    b. Class Desert OBT_000592.
        - Ontology: OntoBiotope.

- Agroportal link:
    https://agroportal.lirmm.fr/ontologies/ONTOBIOTOPE?p=classes&conceptid=http%3A%2F%2Fpurl.obolibrary.org%2Fobo%2FOBT_000592
- This URL does not work: http://purl.obolibrary.org/obo/OBT_000592

1.1.5. TUNDRA

➢ **OLS and Ontobee**

- Class Tundra ENVO_00000112: Treeless, level, or gently rolling plains characteristic of arctic or subarctic regions, having a permanently frozen subsoil, and usually supporting low growing vegetation such as lichens, mosses, and stunted shrubs.
    - Ontologies: ENVO, MICRO, AGRO, GENEPIO, GAZ, FOODON.
- Class Tundra climate ENVO_03000140: A climate which 1) has a mean temperature for the warmest month of less than 10°C (50°F), but higher than 0°C (32°F), 2) is not conducive to a permanent surficial cover of snow or ice, and 3) supports a tundra ecosystem.
    - Ontologies: ENVO, GAZ.
- Class Tundra ecosystem ENVO_01001370: An ecosystem which 1) typically has monthly average temperatures below 10 degrees Celsius 2) has a low evapotranspiration ratio 3) is dominated by treeless terrain, covered by communities of low-growing vegetation such as dwarf shrubs, sedges and grasses, mosses, and lichens, 4) contains areas of soil underlain by permafrost with a thin active layer and 5) occurs in both polar and alpine regions (i.e., both high latitudes and high altitudes), and 5) does not have permanent snow or ice cover.
    - Ontologies: ENVO, AGRO, GAZ.

➢ **LOV**

- Class pext:Tundra: Treeless, level or gently rolling plains characteristic of arctic o subarctic regions, having a permanently frozen subsoil, and usually supporting low growing vegetation such as lichens, mosses, and stunted shrubs. We use this category for Arctic land.
    - Ontology: Proton.
    - URI: http://www.ontotext.com/proton/protonext#Tundra

➢ **Agroportal**

- Concept Tundra: An area supporting some vegetation (lichens, mosses, sedges, and low shrubs) between the northern upper limit of trees and the lower limit of perennial snow on mountains, and on the fringes of the Antarctic continent and its neighbouring islands.
    - Thesaurus:
        a. ANAEETHES.
            - URL: http://opendata.inra.fr/anaeeThes/c_5c260e5a

        b.   GEMET.
- URL: http://www.eionet.europa.eu/gemet/concept/8704

1.1.6. AQUATIC HABITAT

➢ **OLS and Ontobee**

- Class Aquatic Environment ENVO_01000317: An environment whose dynamics are strongly influenced by water.
  - Ontologies: ENVO, TO, PECO, ECTO, MICRO, DPO, AGRO, RBO, MONDO, GAZ.

➢ **LOV**

- Class osr:Aquatic:
  - Ontology: Ontomedia.
  - URI: http://contextus.net/ontology/ontomedia/core/space#Aquatic
  - This link returns a 404-error message.

➢ **Agroportal**

- Concept Aquatic environment: Waters, including wetlands, that serve as habitat for interrelated and interacting communities and populations of plants and animals.
  - Theusarus: GEMET.
  - URL: http://www.eionet.europa.eu/gemet/concept/10194

1.2. FARM OR CULTIVATED HABITAT

➢ **OLS and Ontobee**

- Class Farm ENVO_00000078**:** An area of land which is used for the cultivation of crops or grazing of livestock, including any agricultural constructions therein.
  - Ontologies: ENVO, GAZ, ECTO, EUPATH, MICRO, AGRO, GENEPIO, FOODON.
- Class Cultivated habitat ENVO_00000113: A geographical feature modified by humans by the preparation of the land, usually for the purposes of growing crops.
  - Ontologies: IDOMAL, ENVO, GAZ.

➢ **LOV**

- Class s4agri:Farm: A plot of land used for the scope of farming which can contain buildings and parcels.
  - Ontology: SAREF4AGRI.
  - IRI: https://saref.etsi.org/saref4agri/Farm
- lgdo:Farm:
  - Ontology: LinkedGeoData.

- URI: http://linkedgeodata.org/ontology/Farm
- This link returns a 404-error message.

➢ **Agroportal**

- Concept Farm: All the buildings and land used by a farmer or stockbreeder to carry out his activity.
  - Theusarus: MEAT-T.
  - URL: http://opendata.inrae.fr/ThViande/C919
- Farm: Any tract of land or building used for agricultural purposes, such as for raising crops and livestock.
  - Thesaurus: GEMET.
  - URL: http://www.eionet.europa.eu/gemet/concept/3130
- Class Farm or cultivated habitat CO_020:0000050.
  - There is no definition, and the same thing happens again, in the Agroportal entry there is a link to an XML file.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000050
  - XML file: https://cropontology.org/rdf/CO_020:0000050

1.2.1. FIELD

➢ **OLS and Ontobee**

- Class Field ENVO_01000352: An unbroken expanse (as of ice).
  - Ontologies: ENVO, ECTO, MICRO, AGRO, GENEPIO, RBO, GAZ, FOODON.
- Class Agricultural field ENVO_00000114: A field which is located on land and used for agricultural purposes, such as the grazing of livestock or the cultivation of crops.
  - Ontologies: ENVO, ECTO, AGRO, MICRO, GENEPIO, GAZ, FOODON.

➢ **LOV**

- Property meb:Field.
  - Ontology: Base.
  - URI: http://rdf.myexperiment.org/ontologies/base/field
  - This link returns a 404-error message.
- Class osr:Field.
  - Ontology: Ontomedia.
  - URI: http://contextus.net/ontology/ontomedia/core/space#Field
  - This link also returns a 404-error message.
- Property dbpedia-owl:Field.

- Ontology: DBpedia.
- URI: http://dbpedia.org/ontology/field

➢ **Agroportal**
- Concept Field: A limited area of land with grass or crops growing on it, which is usually surrounded by fences or closely planted bushes when it is part of a farm.
    - Thesaurus: GEMET.
    - URL: http://www.eionet.europa.eu/gemet/concept/3176fi

1.2.2. ORCHARD

➢ **OLS and Ontobee**
- Class Orchard ENVO_00000115: An intentional planting of trees or shrubs maintained for food, typically fruit, production.
    - Ontologies: ENVO, MICRO, GAZ.

➢ **LOV**
- Class pext:Orchard: Plant of fruit or nut trees.
    - URI: http://www.ontotext.com/proton/protonext#Orchard
- Class osr:Orchard.
    - URI: http://contextus.net/ontology/ontomedia/core/space#Orchard
      This link returns a 404 error.
- Class lgdo:Orchard.
    - URI: http://linkedgeodata.org/ontology/Orchard
      This link returns a 404 error.

➢ **Agroportal**
- Concept Orchard.
    - There is no definition.
    - Vocabulary: AGROVOC.
    - URL: https://aims.fao.org/aos/agrovoc/c_5378.html

1.2.3. BACKYARD, KITCHEN OR HOME GARDEN

➢ **Ontobee and OLS**
- Class Residential backyard ENVO_03600033: A yard which consists of land immediately adjacent to the back of a residential building.
    - Ontologies: ENVO, GAZ.
- Class Indoor kitchen ENVO_01000421: An indoor kitchen is a room or part of a room primarily used for cooking or food preparation, but which may have other functions such as dining, food storage, dishwashing, or laundry.
    - Ontologies: ENVO, MICRO, GAS.

- Class Kitchen NCIT_C86562: A room or part of a room used for cooking and food preparation.
  - Ontology: NCIT.

➢ **LOV**

- Class seasbo:Kitchen: Kitchen is a room used mainly for cooking and possibly eating.
  - URI: https://w3id.org/seas/Kitchen
- Class dco:Kitchen.
  - URI: https://w3id.org/dco#Kitchen
  - This link has no definition.

➢ **Agroportal**

- Concept backyard.
  - There is no definition.
  - Vocabulary: AGROVOC.
  - URL: http://aims.fao.org/aos/agrovoc/c_25215
- Concept Home Garden: A plot of cultivated ground adjacent to a dwelling and usually devoted in whole or in part to the growing of herbs, fruits, flowers, or vegetables for household use.
  - Thesaurus: GEMET.
  - URL: http://www.eionet.europa.eu/gemet/concept/13122

1.2.4. FALLOW LAND

➢ **OLS**

- Class Fallow land AGRO_00000390: An agricultural field that is set aside for a period of time before it is cultivated again; or an agricultural field that is under permanent crops, meadows or pastures and that is not being used for such purposes for a period of at least one year.
  - Ontology: AGRO.

➢ **LOV and Ontobee:** nothing.

➢ **Agroportal**

- Concept Fallow land: Arable land not under rotation that is set at rest for a period of time ranging from one to five years before it is cultivated again, or land usually under permanent crops, meadows or pastures, which is not being used for that purpose for a period of at least one year. Arable land which is normally used for the cultivation of temporary crops but which is temporarily used for grazing is included.
  - Theusarus: GEMET.
  - URL: http://www.eionet.europa.eu/gemet/concept/3115
- Concept Fallow land: A group of plants growing on uncultivated farmland.

- Vocabulary: French Crop Usage (Classification des plantes cultivées en France en fonction des usages) (CROPUSAGE).
        - URL: http://ontology.inrae.fr/frenchcropusage/Gels
        - The link returns a 404-error message.
- Concept Fallow land: Land temporarily fallow refers to arable land at prolonged rest before re-cultivation. This may be part of the holding's crop rotation system or because the normal crop cannot be planted because of flood damage, lack of water, unavailability of inputs or other reasons.
        - Theusaurus: Thesaurus to define land management practices in agriculture and forestry for soil carbon storage (DATA4CPLUS).
        - URL: http://data4c-plus.net/admin/thesaurus/read/10
- Concept Fallow land: Cultivated land left unsown for one season.
        - Vocabulary: AGROVOC.
        - URL: http://aims.fao.org/aos/agrovoc/c_34007

1.2.5. PASTURE

➢ **OLS and Ontobee**

- Class Pasture ENVO_00000266: A grassland ecosystem which is used for grazing of ungulate livestock as part of a farm or ranch.
        - Ontologies: ENVO, AGRO, MICRO, GAZ, GENEPIO, FOODON (from OLS).
- Class Pasture soil ENVO_00005773: Soil which is found in a pasture and in which vegetation, such as the grass used for the grazing of ungulates, grows.
        - Ontologies: ENVO, EUPATH, MICRO, AGRO, ENM, GAZ (from OLS).

➢ **LOV**

- Class geop:agriculturalArea.
        - URL: http://aims.fao.org/aos/geopolitical.owl#agriculturalArea
        - This link returns a 404 error.

➢ **Agroportal**

- Concept Pasture: Area covered by grass, either naturally (permanent grassland) or after sowing (temporary grassland). They account for more than 20% of the planet's surface area and often occupy land that is unsuitable for cultivation. Grasslands are used for grazing by herbivores. They are a major carbon sink.
        - Theusaurus: MEAT-T.
        - URL: http://opendata.inrae.fr/ThViande/C916
- Pasture: Land covered with grass or herbage and grazed by or suitable for grazing by livestock.
        - Theusarus: GEMET.

- URL: http://www.eionet.europa.eu/gemet/concept/6061
- Concept Pasture: All the plants in a meadow used exclusively for animal feed. Meadows can be grazed or mown. Grasslands are mainly composed of perennial plants, or plants cultivated for several years (multi-annual). There are several types of grassland, depending on the type of plant present and the lifespan of the grassland.
    - Vocabulary: CROPUSAGE.
    - URL: http://ontology.inrae.fr/frenchcropusage/Prairies

1.2.6. FARM STORE

➢ **OLS, Ontobee and LOV:** nothing.

➢ **Agroportal**

- Class farm store CO_020:0000056.
    - In this case we only get a result that leads us to an XML file from which we cannot obtain more information.
    - Ontology: Multi-Crop Passport Ontology.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000056
    - XML file: https://cropontology.org/rdf/CO_020:0000056

1.2.7. THRESHING FLOOR

➢ **OLS, Ontobee and LOV:** nothing.

➢ **Agroportal:**

- Class threshing floor CO_020:0000057.
    - We only get a result that leads us to an XML file from which we cannot obtain more information.
    - Ontology: Multi-Crop Passport Ontology.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000057
    - XML file link: https://cropontology.org/rdf/CO_020:0000057

1.2.8. PARK

➢ **OLS and Ontobee**

- Class Park ENVO_00000562: A bounded area of land, or water, usually in its natural or semi-natural (landscaped) state and set aside for some purpose, usually to do with recreation or conservation.
    - Ontologies: ENVO, MICRO, GENEPIO, BCIO, GAZ.

- Class Park NCIT_C53542: A piece of land set aside for public use.
  - Thesaurus: National Cancer Institute Thesaurus (NCIT).

➢ **LOV**

- Class lgdo:LandusePark.
  - Ontoloy: LinkedGeoData.
  - URI: http://linkedgeodata.org/ontology/LandusePark
  - This link returns a 404 error.
- Class dbpedia-owl:Park: A park is an area of open space provided for recreational use.
  - Ontology: DBpedia,
  - URL: http://dbpedia.org/ontology/Park
- Class lgdo:Park.
  - Ontology: LinkedGeoData.
  - URI: http://linkedgeodata.org/ontology/Park
  - This link returns a 404 error.
- Class pext:Park: Places or areas developed for public use or recreation. [USGS Circ 1048] We use this category for arboretums; for botanical gardens; for commemorative areas; for commons; for gardens; for marine parks; for national forests; for national parks; for national seashores; for park gates; for picnic areas; for playgrounds; for provincial parks; for public use areas; for recreation areas; for rest areas; for scenic areas; for state forests; for state parks; for urban parks; for village squares; for wilderness areas; for zoological gardens; and for zoos.
  - Ontology: Proton.
  - URI: http://www.ontotext.com/proton/protonext#Park

➢ **Agroportal**

- Class Park CO_020:0000058.
  - We only get a result that leads us to an XML file from which we cannot obtain more information.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link: https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000058
  - XML file: https://cropontology.org/rdf/CO_020:0000058

1.3. MARKET OR SHOP

➢ **OLS and Ontobee**

- Class Market ENVO_01000987: A part of an ecosystem where people gather for the purchase and sale of provisions, livestock, and other goods.
    - Ontologies: ENVO, GENEPIO, GAZ.
- Property Market Shop GAZ_00256267: A populated place. A village.
    - Ontology: GAZ.
- Class Shop ENVO_00002221: A building in which a business presents a selection of goods and offers to trade or sell them to customers for money or other goods.
    - Ontologies: ENVO, ECTO, FOODON, MICRO, GENEPIO, GAZ, GSSO.

➢ **LOV**

- Class lgdo:Market.
    - Ontology: LinkedGeoData.
    - URI: http://linkedgeodata.org/ontology/Market
    - This link returns a 404-error message.
- Class pext:Market: In contrast to IndustrySector, the market is determined by the customers instead of the business or the manifacturers. The market can be defined in terms of types of goods/services, geographic region, price levels and typical customer behaviours. Corresponding to the third sense in WordNet 1.7.1 "the customers for a particular product or service".
    - Ontology: Proton.
    - URI: http://www.ontotext.com/proton/protonext#Market
- Class lgdo:Shop.
    - Ontology: LinkedGeoData.
    - URI: http://linkedgeodata.org/ontology/Shop
    - This link returns a 404 error.
- Class lgdo:Shops.
    - Ontology: LinkedGeoData.
    - URI: http://linkedgeodata.org/ontology/Shops
    - This link returns a 404 error.
- Property gr:availableAtOrFrom: This states that a particular gr:Offering is available at or from the given gr:Location (e.g. shop or branch).
    - URI: http://purl.org/goodrelations/v1#availableAtOrFrom

➢ **Agroportal**

- Concept Market: Place of commercial activity in which articles are bought and sold. Also purchase and sale. In a limited sense market is the range of bid and asked prices reported

by brokers making the market in over-the-counter securities. Also, the demand for any particular article.

- Thesaurus: GEMET.
- URL: http://www.eionet.europa.eu/gemet/concept/5058

- Concept Shop: A place, especially a small building, for the retail sale of goods and services
    - Thesaurus: GEMET.
    - URL: http://www.eionet.europa.eu/gemet/concept/7669

1.4. INSTITUTE, EXPERIMENTAL STATION, RESEARCH ORGANIZATION

➢ **OLS, Ontobee**

- Class Institute SIO_000688: Institute is a society or organization having a object or common factor, and is normally applied to those with a scientific, educational, or social objective.
    - Ontologies: SIO, ONS.
    Also found in LOV and Agroportal.

- Class Institution NCIT_C41206: An established society, corporation, foundation or other organization founded and united for a specific purpose, e.g. for health-related research; also used to refer to a building or buildings occupied or used by such organization.
    - Thesaurus: NCIT.

- Class Research station field AGRO_00000362: Experimental site in which the experiment is done in the field of a research station.
    - Ontology: AGRO.

- Property has NCBI GeneBank accession ICEO_0000337: An annotation property that represents the ID of an ICE sequence or the host genome in the NCBI GeneBank database.
    - Ontology: Ontology of Integrative and Conjugative Elements (ICEO).

- Class Research Organization NCIT_C93448: An organization whose purpose is to support systemic, rigorous study and investigation into a particular field or fields.
    - Thesaurus: NCIT.

- Class research organization OBI_0000828: An organization formed with a goal to have its members conduct investigations.
    - Ontologies: OBI, ONE, NGBO, ONS, AGRO.
    Also found in LOV.

➢ **LOV**

- Class pext:Institute: A research organization devoted primarily on search in some scientific research.
  - Ontology: Proton.
  - URI: http://www.ontotext.com/proton/protonext#Institute
- Class pext:ResearchOrganization: An organization performing scientific research.
  - Ontology: Proton.
  - URI: http://www.ontotext.com/proton/protonext#ResearchOrganization
- Class Holy:ResearchOrganization.
  - Ontology: Holy.
  - URI: http://purl.org/holy/ns#ResearchOrganization
  - The link leads to a file.

➢ **Agroportal**

- Class Research Institute CO_715_0000075: The institute where the experiment was done.
  - Ontology: Crop Research Ontology (CO_715).
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_715?p=classes&conceptid=http://purl.obolibrary.org/obo/CO_715_0000075
  - URI: http://purl.obolibrary.org/obo/CO_715_0000075
  - The URI returns a 404-error message.
- Class institute, experimental station, research organization, genebank CO_020:0000060.
  - There is no definition.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000060
  - Link of the XML file: https://cropontology.org/rdf/CO_020:0000060

1.5. SEED COMPANY

➢ **OLS, Ontobee and LOV:** nothing.

➢ **Agroportal**

- Class seed company CO_020:0000061.
  - Ontology: Multi-Crop Passport Ontology.

- Agroportal link:
  https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000061
- Link of the XML file: https://cropontology.org/rdf/CO_020:0000061

1.6. WEEDY, DISTURBED OR RUDERAL HABITAT

➢ **OLS and Ontobee**

- Class disturbed ecosystem ENVO_01000445: An ecosystem which has been subject to a perturbation, that is, the ecosystem has undergone a pronounced change in response to a change in environmental conditions or other perturbation.
  - Ontologies: ENVO, MICRO, GAZ.

➢ **LOV**

- Class Opo:Disturbability.
  - URI: http://online-presence.net/opo/ns#Disturbability
  - We get connection error.

➢ **Agroportal**

- Class Weedy, disturbed or ruderal habitat CO_020:0000062.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000062
  - Link of the XML file: https://cropontology.org/rdf/CO_020:0000062

1.6.1. RODSIDE

➢ **OLS, Ontobee and Agroportal**

- Class roadside ENVO_01000447: An environmental zone of varying area which is adjacent to a road.
  - Ontologies: ENVO, MICRO.

➢ **LOV:** nothing.

➢ **Agroportal**

- Class roadside CO_020:0000063.
  - There is no definition.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000063

- Link of the XML file: https://cropontology.org/rdf/CO_020:0000063

1.6.2. FIELD MARGIN

➢ **OLS and Agroportal**

- Class field margin AGRO_00000391: Strips of land along the borders of crop fields. It also includes vegetative strips adjacent to roads, paths, railways, hedgerows and forest boundaries.
    - Ontology: AGRO.

➢ **Agroportal**

- Class field margin CO_020:0000064.
    - There is no definition.
    - Ontology: Multi-Crop Passport Ontology.
    - Agroportal link
      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000064
    - Link of the XML file: https://cropontology.org/rdf/CO_020:0000064

2. SOIL TYPE

2.1. CLAY

➢ **OLS and Ontobee**

- Class Clay ENVO_00002982: Particulate environmental material which 1) is composed primarily of clay particles, with only minor proportions of other materials, 2) demonstrates plasticity when wet, and 3) is capable of hardening when dried or fired.
    - Ontology: ENVO.

➢ **LOV:** nothing.

➢ **Agroportal**

- Concept Clay: there is no definition, and the ontology link does not work.
    - Vocabulary: AGROVOC.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/AGROVOC?p=classes&conceptid=http%3A%2F%2Faims.fao.org%2Faos%2Fagrovoc%2Fc_15619
    - URL: http://aims.fao.org/aos/agrovoc/xDef_ff54405c

- Concept Clay: A loose, earthy, extremely fine-grained, natural sediment or soft rock composed primarily of clay-size or colloidal particles and characterized by high plasticity and by a considerable content of clay mineral and subordinate amounts of finely divided quartz, decomposed feldspar, carbonates, ferruginous matter, and other

impurities; it forms a plastic, moldable mass when finely ground and mixed with water, retains its shape on drying, and becomes firm, rocklike and permanently hard on heating or firing.

    a. Thesaurus: ANAEETHES.

- Agroportal link:
  https://agroportal.lirmm.fr/ontologies/ANAEETHES?p=classes&conceptid=http%3A%2F%2Fopendata.inra.fr%2FanaeeThes%2Fc2_2587
- URL: http://opendata.inra.fr/anaeeThes/page/c2_2587

    b. Thesaurus: GEMET.

- Agroportal link:
  https://agroportal.lirmm.fr/ontologies/GEMET?p=classes&conceptid=http%3A%2F%2Fwww.eionet.europa.eu%2Fgemet%2Fconcept%2F1449
- URL: https://www.eionet.europa.eu/gemet/en/concept/1449

- Class Clay OBT_001037.
  - There is no definition.
  - Ontology: OntoBiotope.
  - Agroportal link: http://www.berkeleybop.org/ontologies/OBT_001037
  - The link returns a 404-error message.
  - URI: http://purl.obolibrary.org/obo/OBT_001037

- Class Clay CO_715_0000099.
  - There is no definition.
  - Ontology: Crop Research Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_715?p=classes&conceptid=http%3A%2F%2Fpurl.obolibrary.org%2Fobo%2FCO_715_0000099
  - URI: http://www.berkeleybop.org/ontologies/CO_715_0000099
  - The link returns a 404-error message.

- Concept Clay.
  - There is no definition.
  - Vocabulary: Global Agricultural Concept Scheme (GACS).
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/GACS?p=classes&conceptid=http%3A%2F%2Fid.agrisemantics.org%2Fgacs%2FC5459
  - URL: http://artemide.art.uniroma2.it/skosmos/gacs/en/page/C5459

- Concept Clay: there is no definition.
    - Ontology: Agriculture and Forestry Ontology (AFO).
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/AFO?p=classes&conceptid=http%3A%2F%2Fwww.yso.fi%2Fonto%2Fafo%2Fp3123
    - URI: https://finto.fi/afo/fi/page/p3123

2.2. CLAY-LOAM

➢ **Ontobee, OLS and Agroportal**

- Class clay loam ENVO_06105277: Loam which has a high proportion of clay in its composition.
    - Ontology: ENVO.

➢ **LOV:** nothing.

2.3. CLAY-SILT

➢ **Ontobee, OLS and LOV:** nothing.

➢ **Agroportal**

- Class Clay-silt CO_715_0000100.
    - Ontology: Crop Research Ontology (CO_715).
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/CO_715?p=classes&conceptid=http%3A%2F%2Fpurl.obolibrary.org%2Fobo%2FCO_715_0000100
    - Agroportal has a link to a GitHub repository that does not work.
    - Github: http://purl.obolibrary.org/obo/CO_715_0000100

2.4. LOAM

➢ **Ontobee and OLS**

- Class loam ENVO_00002258: A soil which is composed of approximately equal proportions of sand and silt, with a smaller proportion of clay.
    - Ontologies: ENVO, AGRO, MICRO, GENEPIO, ENM, FOODON.
      Also found in Agroportal.

➢ **Agroportal**

- Class Loam p5376: the following link goes to a web page with no definition.
    - Ontology: AFO.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/AFO?p=classes&conceptid=http%3A%2F%2Fwww.yso.fi%2Fonto%2Fafo%2Fp5376
    - Ontology link: http://www.yso.fi/onto/afo/p5376

- Class Loam CO_715_0000105: the following link takes us to a GitHub repository that returns a 404-error message.
    - Ontology: Crop Research Ontology (CO_715).
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/CO_715?p=classes&conceptid=http%3A%2F%2Fpurl.obolibrary.org%2Fobo%2FCO_715_0000105
    - Github repository (URI): http://purl.obolibrary.org/obo/CO_715_0000105

2.5. SAND

➢ **OLS**

- Class sand ENVO_01000017: Particulate environmental material which is composed primarily of particles of sand with only minor proportions of other substances.
    - Ontologies: ENVO, AGRO, ECTO, EUPATH, FOODON, GAZ, GENEPIO, MICRO, MONDO, RBO, ENM, DPO, PECO.

      Also found in Ontobee.

- Class sand ENVO_01000017: A naturally occurring granular material composed of finely divided rock and mineral particles.
    - ➢ Ontologies: ENVO, AGRO, ENM, EUPATH, FOODON, GENEPIO, MICRO, MONDO, PECO, RBO, UBERON.

      Note: Probably, we find different definitions with the same code because the term has been imported into the AGRO ontology from ENVO, and at some point the definition changed in ENVO but was not updated in AGRO.

➢ **LOV**

- Class lgdo:Sand.
    - ➢ Ontology: LinkedGeoData.
    - ➢ URI: http://linkedgeodata.org/ontology/Sand
    - ➢ Returns a 404-error message.

➢ **Agroportal**

- Concept Sand: A loose material consisting of small mineral particles, or rock and mineral particles, distinguishable by the naked eye; grains vary from almost spherical to angular, with a diameter range from 1/16 to 2 millimeters.
    - a. Theusarus: ANAEETHES.
        - Agroportal link:
          https://agroportal.lirmm.fr/ontologies/ANAEETHES?p=classes&conceptid=http%3A%2F%2Fopendata.inra.fr%2FanaeeThes%2Fc2_2588

- URL: http://opendata.inra.fr/anaeeThes/page/c2_2588

  b. Theusarus: GEMET.

  - Agroportal link:

    https://agroportal.lirmm.fr/ontologies/GEMET?p=classes&conce
    ptid=http%3A%2F%2Fwww.eionet.europa.eu%2Fgemet%2Fco
    ncept%2F7413

  - URL: https://www.eionet.europa.eu/gemet/en/concept/7413

- Concept Sand: Sand is a collection of small, loose fragments of rocks, minerals or exoskeletons of marine animals. In geology, sand is a material composed of particles ranging in size from 0.063 to 2 mm. An individual particle within this range is called a grain or clast of sand. A consolidated rock composed of these particles is called sandstone (or psammite) or calcarenite, if the components are calcareous. Particles below 0.063 mm and up to 0.004 mm are called silt, and above the sand grain size and up to 64 mm are called gravel.

  - Vocabulary: AGROVOC.
  - Agroportal link:

    https://agroportal.lirmm.fr/ontologies/AGROVOC?p=classes&conceptid=ht
    tp%3A%2F%2Faims.fao.org%2Faos%2Fagrovoc%2Fc_6779

  - AGROVOC URL: https://aims.fao.org/aos/agrovoc/c_6779.html
  - DBpedia link: https://dbpedia.org/page/Sand
  - From AGROVOC we get a link to dbpedia, where the definition of sand can be found.

- Class Sand CO_715_0000103.

  - There is no definition and takes us to a GitHub repository that does not work..
  - Ontology: Crop Research Ontology.
  - Agroportal link:

    https://agroportal.lirmm.fr/ontologies/CO_715?p=classes&conceptid=http%
    3A%2F%2Fpurl.obolibrary.org%2Fobo%2FCO_715_0000103

  - Github link: http://www.berkeleybop.org/ontologies/CO_715_0000103

- Concept Sand C4590.

  - ➢ There is no definition.
  - ➢ Vocabulary: GACS.
  - ➢ Agroportal link:

    https://agroportal.lirmm.fr/ontologies/GACS?p=classes&conceptid=http%3
    A%2F%2Fid.agrisemantics.org%2Fgacs%2FC4590

  - ➢ URI: http://id.agrisemantics.org/gacs/C4590
  - ➢ The URI does not work.

2.6. SANDY-CLAY

➢ **OLS and Ontobee**

- Class sandy clay ENVO_06105279: Clay which has a high proportion of sand in its composition. Some authorities consider sandy clay to be a soil composed of 45-65% of sand, 0-20% of silt and 35-55% of clay. If the proportion of sand exceeds that of clay, it is unclear whether this is still considered clay (due to other properties) or whether a new class "clay sand" should be created.

    ➢ Ontologies: ENVO, ENM, GAZ.

➢ **LOV and Agroportal:** nothing.

2.7. SANDY-LOAM

➢ **OLS and Ontobee**

- Class sandy loam ENVO_06105274: Loam which has a high proportion of sand in its composition. Some authorities consider sandy loam to be a soil composed of 50-70% sand, 0-50% silt, and 0-20% clay. Others, a soil material that contains either 20% or less clay, with a percentage of silt plus twice the percentage of clay that exceeds 30, and 52% or more sand; or less than 7% clay, less than 50% silt, and between 43% and 52% sand.

    ➢ Ontologies: ENVO, ENM, GAZ.

➢ **LOV:** nothing

➢ **Agroportal**

- Class sandy loam CO_715_0000104.

    ➢ There is no definition.

    ➢ This link https://agroportal.lirmm.fr/ontologies/CO_715?p=classes&conceptid=http%3A%2F%2Fpurl.obolibrary.org%2Fobo%2FCO_715_0000104 goes to a webpage in Agroportal wich provides us another link to GitHub repository but returns 404 error: http://purl.obolibrary.org/obo/CO_715_0000104

2.8. SILT

➢ **OLS and Ontobee**

- Class silt ENVO_01000016: Particulate environmental material which is primarily composed of silt particles.

    ➢ Ontologies: ENVO, PECO, ECTO, MICRO, DPO, AGRO, RBO, MONDO, ENM, GAZ.

➢ **LOV:** nothing.

➢ **Agroportal**

- Class silt CO_715_0000101.

    - There is no definition.

- Ontology: Crop Research Ontology.
- Agroportal link:
  https://agroportal.lirmm.fr/ontologies/CO_715?p=classes&conceptid=http://purl.obolibrary.org/obo/CO_715_0000101
- URI: http://purl.obolibrary.org/obo/CO_715_0000101

- Concept Silt: The fine mineral material formed from the erosion of rock fragments and deposited by rivers and lakes. Its particles are the intermediate form between sand and clay. The particles can range in size from 0.01-0.05 mm in diameter.

  a. Theusarus: ANAEETHES.
     - URL: http://opendata.inra.fr/anaeeThes/c2_2589
  b. Thesaurus: GEMET.
     - URL: http://www.eionet.europa.eu/gemet/concept/7698

- Concept silt c_331558.
  - Vocabulary AGROVOC.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/AGROVOC?p=classes&conceptid=http://aims.fao.org/aos/agrovoc/c_331558
  - URL: http://aims.fao.org/aos/agrovoc/c_331558

- Concept silt p4446.
  - Agriculture and Forestry Ontology (AFO): http://www.yso.fi/onto/afo/p4446
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/AFO?p=classes&conceptid=http://www.yso.fi/onto/afo/p4446

- Concept silt OBT_001317.
  - There is no definition.
  - Ontology: OntoBiotope.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/ONTOBIOTOPE?p=classes&conceptid=http://purl.obolibrary.org/obo/OBT_001317
  - URI: http://purl.obolibrary.org/obo/OBT_001317
  - The link returns a 404-error message from a GitHub repository.

- Concept silt C12101.
  - There is no definition.
  - Vocabulary: GACS.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/GACS?p=classes&conceptid=http://id.agrisemantics.org/gacs/C12101

- URL: http://id.agrisemantics.org/gacs/C12101

2.9. SILT-LOAM

➢ **Ontobee and OLS**

- Class silty loam ENVO_06105275: Loam which has a high proportion of silt in its composition. Some authorities consider silt loam to be a soil composed of 20-50% of sand, 74-88% silt and 0-27% of clay.

    - Ontologies: ENVO, ENM, GAZ.

➢ **LOV and Agroportal:** nothing.

2.10. SILT-SAND

➢ **Ontobee, Agroportal, LOV:** nothing.

➢ **Agroportal**

- Class silt sand CO_715_0000102.

    - We only get one result, but it takes us back to a GitHub repository that does not work (returns a 404-error message).

        ➢ Ontology: Crop Research Ontology (CO_715).

        ➢ Agroportal link:

        https://agroportal.lirmm.fr/ontologies/CO_715?p=classes&conceptid=http%3A%2F%2Fpurl.obolibrary.org%2Fobo%2FCO_715_0000102

        ➢ Link of Crop Research Ontology that does not work: http://www.berkeleybop.org/ontologies/CO_715_0000102

3. BIOLOGICAL STATUS OF ACCESSION

➢ **OLS, Ontobee and LOV:** nothing

➢ **Agroportal**

- Class biological status of accession CO_020:0000020.
    - Ontology: Multi-Crop Passport Ontology.
    - Agroportal link:

    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000020
    - Link of the XML file: http://www.cropontology.org/rdf/CO_020:0000020

3.1. WILD

➢ **Ontobee, OLS and LOV:** nothing

➢ **Agroportal:** there is one ontology.

- Class wild CO_020:0000029.

- Ontology: Multi-Crop Passport Ontology.
- Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000029
- XML file: https://cropontology.org/rdf/CO_020:0000029

In this case, we try to find similar concepts:

- Concept breeding lines c_29226.
    - Vocabulary: AGROVOC.
    - Agroportal link:
        https://agroportal.lirmm.fr/ontologies/AGROVOC?p=classes&conceptid=http%3A%2F%2Faims.fao.org%2Faos%2Fagrovoc%2Fc_29226
    - URL: https://aims.fao.org/aos/agrovoc/c_29226.html
    - Definition link: https://aims.fao.org/aos/agrovoc/xDef_4ccdd7da
- Concept breeding lines C12114: A group of identical pure-breeding diploid or polyploid organisms, distinguished from other individuals of the same species by some unique phenotype and genotype.
    - Vocabulary GACS.
    - Agroportal link:
        https://agroportal.lirmm.fr/ontologies/GACS?p=classes&conceptid=http%3A%2F%2Fid.agrisemantics.org%2Fgacs%2FC12114
    - URL: http://artemide.art.uniroma2.it/skosmos/gacs/en/page/C12114
- Class seeds sown CO_343:0000288: Quantity of botanical or true seeds sown per family or cross.
    - Ontology: Yam Ontology.
    - Agroportal link:
        https://agroportal.lirmm.fr/ontologies/CO_343?p=classes&conceptid=https%3A%2F%2Fcropontology.org%2Frdf%2FCO_343%3A0000288
    - XML file: https://cropontology.org/rdf/CO_343:0000288
    - The URI is from Crop Ontology.
- Concept cultivated plants.
    - There is no definition.
    - Thesaurus: Biodiversity Thesaurus
    - Agroportal link:
        https://agroportal.lirmm.fr/ontologies/BIODIVTHES?p=classes&conceptid=http%3A%2F%2Fdata.loterre.fr%2Fark%3A%2F67375%2FBLH-VHFQFZSK-6
    - URL: https://skosmos.loterre.fr/BLH/fr/page/-VHFQFZSK-6

3.2. WEEDY

- ➢ **Ontobee, OLS and LOV:** nothing.
- ➢ **Agroportal**
  - Class weedy CO_020:0000032.
    - There is no definition
    - Multi-Crop Passport Ontology: there is no definition.
    - Agroportal link:

      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000032
    - XML file: https://cropontology.org/rdf/CO_020:0000032

3.3. TRADITIONAL CULTIVAR/LANDRACE

- ➢ **OLS, Ontobee and LOV:** nothing.
- ➢ **Agroportal**
  - Class traditional cultivar or landrace CO_020:0000033.
    - There is no definition.
    - Ontology: Multi-Crop Passport Ontology.
    - Agroportal link:

      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000033
    - XML file: https://cropontology.org/rdf/CO_020:0000033

3.4. BREEDING OR RESEARCH MATERIAL

- ➢ **OLS, Ontobee and LOV:** nothing.
- ➢ **Agroportal**
  - Class breeding or research material CO_020:0000034.
    - There is no definition.
    - Ontology: Multi-Crop Passport Ontology.
    - Agroportal link:

      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000034
    - XML file: https://cropontology.org/rdf/CO_020:0000034

3.4.1. BREEDER'S LINE

- ➢ **OLS, Ontobee and LOV:** nothing.
- ➢ **Agroportal**
  - Class breeder's line CO_020:0000035.

- There is no definition.
  - Ontology: Multi-Crop Passport Ontology.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000035
    - XML file: https://cropontology.org/rdf/CO_020:0000035

3.4.2. SYNTHETIC POPULATION

➢ **OLS, Ontobee and LOV:** nothing.

➢ **Agroportal**

- Concept synthetic population CO_020:0000036.
  - There is no definition.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000036
  - XML file: https://cropontology.org/rdf/CO_020:0000036

3.4.3. HYBRID

➢ **LOV:** nothing.

➢ **Ontobee, OLS and Agroportal**

- Class hybrid seed variety AGRO_00000619: Seed variety produced by cross-pollinated plants.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/AGRO?p=classes&conceptid=http%3A%2F%2Fpurl.obolibrary.org%2Fobo%2FAGRO_00000619
  - Ontobee link:
    https://ontobee.org/ontology/AGRO?iri=http://purl.obolibrary.org/obo/AGRO_00000619

➢ **Agroportal:** we get another two ontologies.

- Class hybrid CO_020:0000037.
  - There is no definition.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000037
  - XML file: http://www.cropontology.org/rdf/CO_020:0000037

- Concept hybrid C12299.
  - There is no definition.
  - Vocabulary: GACS.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/GACS?p=classes&conceptid=http%3A%2F%2Fid.agrisemantics.org%2Fgacs%2FC12299
  - URL: http://artemide.art.uniroma2.it/skosmos/gacs/en/page/C12299

3.4.4. FOUNDER STOCK OR BASE POPULATION

- ➢ **OLS, Ontobee and LOV:** nothing.
- ➢ **Agroportal:**
  - Class founder stock or base populations CO_020:0000038.
    - There is no definition.
    - Ontology: Multi-Crop Passport Ontology.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000038
    - XML file: https://cropontology.org/rdf/CO_020:0000038

3.4.5. INBRED LINE (PARENT OF HYBRID CULTIVAR)

- ➢ **OLS, Ontobee and LOV:** nothing.
- ➢ **Agroportal**
  - Class inbred line (parent of hybrid cultivar) CO_020:0000039.
    - There is no definition.
    - Ontology: Multi-Crop Passport Ontology.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000039
    - XML file: https://cropontology.org/rdf/CO_020:0000039
  - Concept inbred line c_24039.
    - There is no definition.
    - Vocabulary AGROVOC.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/AGROVOC?p=classes&conceptid=http%3A%2F%2Faims.fao.org%2Faos%2Fagrovoc%2Fc_24039
    - URL: https://aims.fao.org/aos/agrovoc/c_24039.html

3.4.6. SEGREGATING POPULATION

➢ **OLS, Ontobee and LOV:** nothing.

➢ **Agroportal**

- Class segregating population CO_020:0000040.
  - There is no definition.
  - Ontology: Multi-Crop Passport Ontology: class but there is no definition.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000040
  - XML file: https://cropontology.org/rdf/CO_020:0000040

3.4.7. CLONAL SELECTION

➢ **OLS, Ontobee and LOV:** nothing.

➢ **Agroportal**

- Class clonal selection CO_020:0000099.
  - There is no definition.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000099
  - XML file: https://cropontology.org/rdf/CO_020:0000099

3.4.8. GENETIC STOCK

➢ **OLS, Ontobee and LOV:** nothing.

➢ **Agroportal**

- Class genetic stock CO_020:0000041.
  - There is no definition.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000041
  - XML file: https://cropontology.org/rdf/CO_020:0000041

3.4.9. MUTANT

➢ **OLS, Ontobee and LOV:** nothing.

➢ **Agroportal:**

- Class mutant CO_020:0000100.
  - There is no definition.

- Ontology: Multi-Crop Passport Ontology.
- Agroportal link:

    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000100
- XML file: https://cropontology.org/rdf/CO_020:0000100

3.4.10. CYTOGENETIC STOCKS

- ➢ **OLS, Ontobee and LOV:** nothing.
- ➢ **Agroportal**
    - Class cytogenetic stocks CO_020:0000101.
        - There is no definition.
        - Ontology: Multi-Crop Passport Ontology.
        - Agroportal link:

            https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000101
        - XML file: https://cropontology.org/rdf/CO_020:0000101

3.4.11. OTHER CYTOGENETIC STOCKS

- ➢ **OLS, Ontobee and LOV:** nothing.
- ➢ **Agroportal**
    - Class other cytogenetic stocks CO_020:0000102.
        - There is no definition.
        - Ontology: Multi-Crop Passport Ontology.
        - Agroportal link:

            https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000102
        - XML file: https://cropontology.org/rdf/CO_020:0000102

3.5. ADVANCED OR IMPROVED CULTIVAR

- ➢ **OLS, Ontobee and LOV:** nothing.
- ➢ **Agroportal**
    - Class advanced or improved cultivar CO_020:0000042.
        - There is no definition.
        - Ontology: Multi-Crop Passport Ontology.
        - Agroportal link:

            https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000042
        - XML file: https://cropontology.org/rdf/CO_020:0000042

3.6. GMO

> ➤ **OLS, Ontobee and LOV:** nothing.
>
> ➤ **Agroportal**
>
> - Class GMO CO_020:0000103.
>   - There is no definition.
>   - Ontology: Multi-Crop Passport Ontology.
>   - Agroportal link:
>   https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000103
>   - XML file: https://cropontology.org/rdf/CO_020:0000103

4. TYPE OF GERPLASM STORAGE

In this section we have not found anything in Ontobee, OLS and LOV.

> ➤ **Agroportal**
>
> - Class type of germplasm storage CO_020:0000078.
>   - Multi-Crop Passport Ontology: the Agroportal link take us to a XML file that does not give any information.
>   - Agroportal link:
>   https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000078
>   - XML file: http://www.cropontology.org/rdf/CO_020:0000078

4.1. SEED COLLECTION

> ➤ **Agroportal**
>
> - Class seed collection CO_020:0000066.
>   - There is no definition.
>   - Ontology: Multi-Crop Passport Ontology.
>   - Agroportal link:
>   https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000066
>   - XML file: https://cropontology.org/rdf/CO_020:0000066
> - Concept seed collection c_6930.
>   - There is no definition.
>   - Vocabulary: AGROVOC.

- Agroportal link:

    https://agroportal.lirmm.fr/ontologies/AGROVOC?p=classes&conceptid=http%3A%2F%2Faims.fao.org%2Faos%2Fagrovoc%2Fc_6930

    - URL: http://aims.fao.org/aos/agrovoc/c_6930

- Concept seed collection C17143.

    - There is no definition.

    - Vocabulary: GACS.

    - Agroportal link:

        https://agroportal.lirmm.fr/ontologies/GACS?p=classes&conceptid=http%3A%2F%2Fid.agrisemantics.org%2Fgacs%2FC17143

        - URL: http://id.agrisemantics.org/gacs/C17143

4.2. FIELD COLLECTION

➢ **Agroportal**

- Class field collection CO_020:0000070.

    - There is no definition.

    - Ontology: Multi-Crop Passport Ontology.

    - Agroportal link:

        https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000070

        - XML file: http://www.cropontology.org/rdf/CO_020:0000070

4.3. *IN VITRO* COLLECTION

➢ **Agroportal**

- Class *in vitro* collection CO_020:0000071.

    - There is no definition.

    - Ontology: Multi-Crop Passport Ontology.

    - Agroportal link:

        https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000071

        - XML file: http://www.cropontology.org/rdf/CO_020:0000071

4.4. CRYOPRESERVED COLLECTION

➢ **Agroportal**

- Class cryopreserved collection CO_020:0000072.

    - There is no definition.

- Ontology: Multi-Crop Passport Ontology.
- Agroportal link:
  https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000072
- XML file: http://www.cropontology.org/rdf/CO_020:0000072

4.5. DNA COLLECTION

➢ **Agroportal**
- Class DNA collection CO_020:0000106.
  - There is no definition.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000106
    - XML file: http://www.cropontology.org/rdf/CO_020:0000106

5. LAND FORM

➢ **Ontobee, OLS and Agroportal**
- Class landform ENVO_01001886: A solid astronomical body part which has been formed from and is composed primarily of the matter of that astronomical body.
  - Ontologies: ENVO, ECTO, DPO, MONDO, GAZ, FOODON.

➢ **OLS**
- Class landform: A landform or physical feature. Landform elements include mountains, plains, lakes, rivers, seascape and oceanic waterbody interface features such as bays, peninsulas, seas and so forth, including sub-aqueous terrain features such as submersed mountain ranges, volcanoes, and the great ocean basins.
  - Ontology: SCHEMAORG_HTTP.
  - URL: http://schema.org/Landform
    Also found in LOV

➢ **LOV**
- Property juso.kr:landform: Whether the address locates a land lot or a mountain.
  - Ontology: South Korea Extension to Juso.
  - URL: http://rdfs.co/juso/kr/latest/html#term-landform

➢ **Agroportal**
- Concept Landform: Any physical, recognizable form or feature of the Earth's surface, having a characteristic shape and produced by natural causes; it includes major forms

such as plane, plateau and mountain, and minor forms such as hill, valley, slope, esker, and dune. Taken together the landforms make up the surface configuration of the Earth's.

- Thesaurus: GEMET.

- URL: https://www.eionet.europa.eu/gemet/en/concept/4629

5.1. CANYON

➢ **OLS and Ontobee**

- Class canyon ENVO_00000169: Relatively narrow, deep depression with steep sides, the bottom of which generally has a continuous slope.
    - Ontologies: ENVO, MICRO, GAZ.

➢ **LOV**

- Class pext:Canyon: Relatively narrow, deep depressions with steep sides, the bottom of which generally has a continuous slope ... We use this category for barrancas; for chasms; for flumes (natural); for gorges; for gulches; for quebradas; and for ravines.
    - Ontology: Proton.
    - URI: http://www.ontotext.com/proton/protonext.html#Canyon

➢ **Agroportal**

- Concept Canyon: A long deep, relatively narrow steep-sided valley confined between lofty and precipitous walls in a plateau or mountainous area, often with a stream at the bottom; similar to, but largest than, a gorge. It is characteristic of an arid or semiarid area (such as western U.S.) where stream downcutting greatly exceeds weathering.
    - Thesaurus: GEMET.
    - URL: https://www.eionet.europa.eu/gemet/en/concept/10143

5.2. MOUND

➢ **OLS and Ontobee:**

- Class mound ENVO_00000180: A rounded elevated area.
    - Ontologies: ENVO, MICRO, GAZ.

➢ **LOV:** nothing.

➢ **Agroportal**

- Class mound OBT_000746.
    - There is no definition.
    - Ontology: OntoBiotope.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/ONTOBIOTOPE?p=classes&conceptid=http%3A%2F%2Fpurl.obolibrary.org%2Fobo%2FOBT_000746
    - URI: http://purl.obolibrary.org/obo/OBT_000746

- The links goes to a GitHub repository that do not work.
- Also, we have another link: https://www.w3.org/2002/07/owl#Class

5.3. HILL

➢ **OLS and Ontobee:**

- Class hill ENVO_00000083: A rounded elevation of limited extent rising above the surrounding land with local relief of less than 300m.
    - Ontologies: ENVO, MICRO, GAZ, AGRO.

➢ **LOV**

- Class lgdo:Hill
    - Ontology: LinkedGeoData
    - Link: http://linkedgeodata.org/ontology/Hill
    - Return us a 404-error message.
- Class place:Hill
    - Link: http://purl.org/ontology/places#Hill
    - Return us a 404-error message.

➢ **Agroportal**

- Concept Hill: A natural elevation of the land surface, rising rather prominently above the surrounding land, usually of limited extent and having a well-defined outline, rounded rather than peaked or rugged, with no specific definition of absolute elevation.
    - Thesaurus: GEMET.
    - URL: https://www.eionet.europa.eu/gemet/en/concept/3966
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/GEMET?p=classes&conceptid=http%3A%2F%2Fwww.eionet.europa.eu%2Fgemet%2Fconcept%2F3966

5.4. MOUNTAIN

➢ **OLS and Ontobee:**

- Class mountain ENVO_00000081: A landform that extends above the surrounding terrain in a limited area.
    - Ontologies: ENVO, EUPATH, MICRO, AGRO, GAZ.

➢ **LOV**

- Class mountain A mountain, like Mount Whitney or Mount Everest.
    - Ontology: SCHEMAORG_HTTP, SCHEMAORG_HTTPS.
    - Link: http://schema.org/Mountain
      Also found in OLS.

- ➢ **LOV**
  - Class place:Mountain.
    - Link: https://vocab.org/places/schema#Mountain
    - The links returns a 404 error.
  - Class osr:Mountain.
    - Ontology: Ontomedia.
    - URI: http://www.contextus.net/ontology/ontomedia/core/space#Mountain
    - This link returns the following message "That page can't be found".
  - Class dbpedia-owl:Mountain.
    - Ontology: DBpedia.
    - URI: https://dbpedia.org/ontology/Mountain
    - There is no definition.
  - Class pext:Mountain: Landmasses that project conspicuously above their surroundings. [USGS Circ 1048] We use this category for cerros; for cordilleras; for foothills; for hills; for knolls; for mounds; and for mounts. Omitted ADL sub-classes: Continental divides.
    - Ontology: Proton.
    - URI: http://www.ontotext.com/proton/protonext.html#Mountain
- ➢ **Agroportal**
  - Concept Mountain.
    - We do not have any definition.
    - Thesaurus: BIODIVTHES.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/BIODIVTHES?p=classes&conceptid=http%3A%2F%2Fdata.loterre.fr%2Fark%3A%2F67375%2FBLH-TLS9SHFZ-D
    - BIODIVTHES URL: https://skosmos.loterre.fr/BLH/fr/page/-TLS9SHFZ-D
  - Class Mountain OBT_000747.
    - Ontology: OntoBiotope.
    - URI: http://purl.obolibrary.org/obo/OBT_000747
    - This page is from GitHub repository but does not work.
  - Concept Mountain: A feature of the earth's surface that rises high above the base and has generally steep slopes and a relatively small summit area. Mountains are an important source of water, energy, minerals, forest and agricultural products, and recreation. They are storehouses of biological diversity and endangered species and an essential part of the global ecosystem. About 10% of the world's population depend on mountain resources and nearly half of these people are affected by the degradation of mountain watershed areas.

- Thesaurus: GEMET.
- Agroportal link:
  https://agroportal.lirmm.fr/ontologies/GEMET?p=classes&conceptid=http%3A%2F%2Fwww.eionet.europa.eu%2Fgemet%2Fconcept%2F5401
- Thesaurus link: https://www.eionet.europa.eu/gemet/en/concept/5401

5.5. RIDGE

➢ **OLS, Ontobee and Agroportal**

- Class ridge ENVO_00000283: A long and narrow elevation with steep sides.
  - Ontologies: ENVO, MICRO, AGRO, GAZ.

➢ **LOV**

- Class pext:Ridge: Elevations with a narrow, elongated crest which can be part of a hill or mountain. We use this category for aretes; for beach ridges; for cuestas; for eskers; for hogbacks; for icecap ridges; for rises (seafloor); and for spurs (physiographic).
  - Ontology: Proton.
  - URI: http://www.ontotext.com/proton/protonext.html#Ridge
- Class lgdo:Ridge.
  - Ontology: LinkedGeoData.
  - URI: http://linkedgeodata.org/ontology/Ridge
  - Returns a 404 error.
- placew:Ridge: returns a 404 error.
  - Link: https://vocab.org/places/schema#Ridge

➢ **Agroportal**

- Class Ridge.
  - We obtain one result but has no definition.
  - Ontology: Common Greenhouse Ontology (CGO).
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CGO?p=classes&conceptid=https%3A%2F%2Fwww.tno.nl%2Fagrifood%2Fontology%2Fcommon-greenhouse-ontology%23Ridge
  - CGO URL: https://www.tno.nl/agrifood/ontology/common-greenhouse-ontology#Ridge

5.6. VALLEY

- ➢ **OLS, Ontobee and Agroportal**
  - Class valley ENVO_00000100: A depression which has been formed as a result of erosion by water or ice and which is low-lying, bordered by higher ground, and especially elongate.
    - Ontologies: ENVO, ECTO, MICRO, GAZ, AGRO, RBO, MONDO.
- ➢ **LOV**
  - Class place:Valley.
    - URI: https://vocab.org/places/schema#Valley
    - Returns a 404-error message.
  - Class dbpedia-owl:Valley: a depression with predominant extent in one direction.
    - Ontology: DBpedia.
    - URI: https://dbpedia.org/ontology/Valley
  - Class pext:Valley: Low-lying land bordered by higher ground; especially elongate, relatively large gently sloping depressions of the Earth's surface, commonly situated between two mountains or between ranges of hills or mountains, and often containing a stream with an outlet. [Glossary of Geology, 4th ed.] We use this category for forks (physiographic features); for glens; for hanging valleys; for hollows; for median valleys; and for shelf valleys (seafloor).
    - Ontology: Proton.
    - URI: http://www.ontotext.com/proton/protonext.html#Valley
- ➢ **Agroportal**
  - Concept Valley: Any low-lying land bordered by higher ground; especially an elongate, relatively large, gently sloping depression of the Earth's surface, commonly situated between two mountains or between ranges of hills or mountains, and often containing a stream with an outlet. It is usually developed by stream erosion but may be formed by faulting.
    - Thesaurus: GEMET.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/GEMET?p=classes&conceptid=http%3A%2F%2Fwww.eionet.europa.eu%2Fgemet%2Fconcept%2F8887
    - GEMET URL: https://www.eionet.europa.eu/gemet/en/concept/8887
  - Class Valley OBT_000944: in Agroportal there is no definition and the link of the ontology
    - Ontology: Ontobiotope.

- Agroportal link:
  https://agroportal.lirmm.fr/ontologies/ONTOBIOTOPE?p=classes&conceptid=http%3A%2F%2Fpurl.obolibrary.org%2Fobo%2FOBT_000944
- Link of Ontobiotope: http://purl.obolibrary.org/obo/OBT_000944
- Returns a 404-error message.

5.7. RIVER

➢ **OLS, Ontobee and Agroportal**

- Class river ENVO_00000022: A stream which, through permanent or seasonal flow processes, moves from elevated land towards lower elevations through a definite channel and empties either into a sea, lake, or another river or ends on land as bed seepage and evapotranspiration exceed water supply.
  - Ontologies: ENDO, ECTO, EUPATH, CHIRO, MICRO, AGRO, SDGIO, GENEPIO, GAZ, FOODON.
  - URI: http://purl.obolibrary.org/obo/ENVO_00000022

➢ **LOV**

- Class osr:River:
  - Ontology: Ontomedia.
  - URI: http://www.contextus.net/ontology/ontomedia/core/space#River
  - The URI returns uf "That message can't be found."
- Class lgdo:River
  - Ontology: LinkedGeoData.
  - URI: http://linkedgeodata.org/ontology/River
  - The link returns a 404-error message.
- Class place:River
  - Link: https://vocab.org/places/schema#River
  - The link returns a 404 error.
- Class dbpedia-owl:River: a large natural stream.
  - Ontology: DBpedia.
  - Link: https://dbpedia.org/ontology/River
- Class s4watr:River: A river is a natural flowing watercourse, usually freshwater, flowing towards an ocean, sea, lake or another river.
  - Ontology: SAREF.
  - URI: https://saref.etsi.org/saref4watr/River

➢ **Agroportal**

- Concept River: A stream of water which flows in a channel from high ground to low ground and ultimately to a lake or the sea, except in a desert area where it may dwindle away to nothing. A river and all its tributaries within a single basin are termed a drainage system.

  a. Thesaurus: ANAEETHES.
    - Agroportal link:

      https://agroportal.lirmm.fr/ontologies/ANAEETHES?p=classes&conceptid=http%3A%2F%2Fopendata.inra.fr%2FanaeeThes%2Fc_1437656475910

    - URL: http://opendata.inra.fr/anaeeThes/page/c_1437656475910

  b. Thesaurus: GEMET.
    - Agroportal link:

      https://agroportal.lirmm.fr/ontologies/GEMET?p=classes&conceptid=http%3A%2F%2Fwww.eionet.europa.eu%2Fgemet%2Fconcept%2F7244

    - URL: https://www.eionet.europa.eu/gemet/en/concept/7244

- Class River OBT_001285.
  - There is no definition.
  - Ontology: Ontobiotope.
  - Agroportal link:

    https://agroportal.lirmm.fr/ontologies/ONTOBIOTOPE?p=classes&conceptid=http%3A%2F%2Fpurl.obolibrary.org%2Fobo%2FOBT_001285

  - URI: http://purl.obolibrary.org/obo/OBT_001285
  - The link returns a 404-error message from a GitHub repository.

5.8. POND

➢ **OLS, Ontobee and Agroportal**

- Class pond ENVO_00000033: A body of water, usually of smaller size than a lake.
  - Ontologies: ENVO, ECTO, EUPATH, MICRO, GENEPIO, IDOMAL, GAZ, FOODON.
  - Link from OLS: http://purl.obolibrary.org/obo/ENVO_00000033

➢ **LOV**

- Class osr:Pond.
  - Ontolgoy: Ontomedia.
  - URI: http://www.contextus.net/ontology/ontomedia/core/space#Pond

- Returns the message "That page can't be found."
- Class pext:Pond: A pond is a body of standing water, either natural or man-made, that is usually smaller than a lake.
  - Ontology: Proton.
  - Link: http://www.ontotext.com/proton/protonext.html#Pond

➢ **Agroportal**

- Concept Pond: A natural body of standing fresh water occupying a small surface depression, usually smaller than a lake and larger than a pool.
  a. Thesaurus: ANAEETHES.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/ANAEETHES?p=classes&conceptid=http%3A%2F%2Fopendata.inra.fr%2FanaeeThes%2Fc3_2630
    - URL: http://opendata.inra.fr/anaeeThes/page/c3_2630
  b. Thesaurus: GEMET.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/GEMET?p=classes&conceptid=http%3A%2F%2Fwww.eionet.europa.eu%2Fgemet%2Fconcept%2F6507
    - URL: https://www.eionet.europa.eu/gemet/en/concept/6507
- Class Pond EOL_0000339: structure of standing water (generally less than 4 meters of depth), either natural or man-made, more or less connected with open waters, usually containing living organisms in addition to the target farmed species.
  - Ontology: Environment Ontology for Livestock (EOL).
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/EOL?p=classes&conceptid=http%3A%2F%2Fopendata.inra.fr%2FEOL%2FEOL_0000339
  - URI: http://opendata.inra.fr/EOL/page/EOL_0000339
- Concept Pond: there is no definition.
  - Ontology: BIODIVTHES.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/BIODIVTHES?p=classes&conceptid=http%3A%2F%2Fdata.loterre.fr%2Fark%3A%2F67375%2FBLH-S7JXCDJQ-F
  - URI: https://skosmos.loterre.fr/BLH/fr/page/-S7JXCDJQ-F
- Class Pond OBT_001260: the link of the ontology returns a 404-error message.
  - Ontology: OntoBiotope.

- Agroportal link:
  https://agroportal.lirmm.fr/ontologies/ONTOBIOTOPE?p=classes&concept
  id=http%3A%2F%2Fpurl.obolibrary.org%2Fobo%2FOBT_001260
- URI: http://www.berkeleybop.org/ontologies/OBT_001260

5.9. LAKE

➢ **OLS, Ontobee and Agroportal**

- Class lake ENVO_00000020: A body of water or other liquid of considerable size contained in a depression on a landmass.
  - Ontologies: ENVO, ECTO, EUPATH, MICRO, AGRO, SDGIO, GENEPIO, RBO, MONDO, IDOMAL, GAZ, FOODON.
  - OLS URI: http://purl.obolibrary.org/obo/ENVO_00000020

➢ **LOV**

- Property dbpedia-owl:lake.
  - Ontology: dbpedia.
  - URI: https://dbpedia.org/ontology/lake
- Class dbpedia-owl:Lake.
  - Ontology: DBpedia.
  - URI: https://dbpedia.org/ontology/Lake

  There is no definition.
- Class pext:Lake: Use 'reservoirs' for human engineered lakes. Natural inland bodies of standing water, generally of appreciable size, occupying a depression in the Earth's surface. [Adapted from Glossary of Geology, 4th ed.] We use this category for beaver ponds; for crater lakes; for dry lakes; for fish ponds; for fishponds; for inland seas; for intermittent lakes; for intermittent oxbow lakes; for intermittent ponds; for intermittent pools; for intermittent salt lakes; for intermittent salt ponds; for lagoons; for laguna; for lake beds; for lochs; for millponds; for oxbow lakes; for ponds; for pools (water bodies); for salt evaporation ponds; for salt lakes; for salt ponds; and for tarns.
  - Ontology: Proton.
  - URI: http://www.ontotext.com/proton/protonext.html#Lake
- Class osr: Lake.
  - Ontology: Ontomedia.
  - URI: http://www.contextus.net/ontology/ontomedia/core/space#Lake
  - Returns the message "That page can't be found."
- Class s4water:Lake: A lake is an area filled with water, localized in a basin, surrounded by land, apart from any river or other outlet that serves to feed or drain the lake.
  - Ontology: SAREF.

- URI: https://saref.etsi.org/saref4watr/Lake

- Class place:Lake.

    - URI: https://vocab.org/places/schema#Lake

    - Returns a 404-error message.

➢ **Agroportal**

- Concept Lake: An enclosed body of water, usually but not necessarily fresh water, from which the sea is excluded.

    a. Thesaurus: ANAEETHES.

        - Agroportal link:

          https://agroportal.lirmm.fr/ontologies/ANAEETHES?p=classes&conceptid=http%3A%2F%2Fopendata.inra.fr%2FanaeeThes%2Fc3_2628

        - URL: http://opendata.inra.fr/anaeeThes/c3_2628

    b. Thesaurus: GEMET.

        - Agroportal link:

          https://agroportal.lirmm.fr/ontologies/GEMET?p=classes&conceptid=http%3A%2F%2Fwww.eionet.europa.eu%2Fgemet%2Fconcept%2F4594

        - URL: https://www.eionet.europa.eu/gemet/en/concept/4594

- Class Lake.

    - There is no definition.

    - Ontology: Stratified lexicon of water related geophysical and textual data (LEXEAU).

    - Agroportal link:

      https://agroportal.lirmm.fr/ontologies/LEXEAU?p=classes&conceptid=http%3A%2F%2Fwww.semanticweb.org%2Fjean-louisjanin%2Flexeau%23OWLClass_39353142_fd2c_460f_a61c_b29eb6076938

    - URI:

      http://www.semanticweb.org/jean%20louisjanin/lexeau#OWLClass_39353142_fd2c_460f_a61c_b29eb6076938

    - But the computer cannot connect to the server.

- Concept Lake: there is no definition.

    - Vocabulary: GACS.

- - Agroportal link:

    https://agroportal.lirmm.fr/ontologies/GACS?p=classes&conceptid=http%3
    A%2F%2Fid.agrisemantics.org%2Fgacs%2FC1521

  - - URL: http://artemide.art.uniroma2.it/skosmos/gacs/en/page/C1521
- Concept Lake: there is no definition.
  - - Ontology: BIODIVTHES.
  - - Agroportal link:

    https://agroportal.lirmm.fr/ontologies/BIODIVTHES?p=classes&conceptid
    =http%3A%2F%2Fdata.loterre.fr%2Fark%3A%2F67375%2FBLH-
    LMS21X82-P

  - - URL: https://skosmos.loterre.fr/BLH/fr/page/-LMS21X82-P
- Class Lake OBT_001171: there is no definition.
  - - Ontology: OntoBiotope.
  - - Agroportal link:

    https://agroportal.lirmm.fr/ontologies/ONTOBIOTOPE?p=classes&concept
    id=http%3A%2F%2Fpurl.obolibrary.org%2Fobo%2FOBT_001171

  - - URI: http://www.berkeleybop.org/ontologies/OBT_001171
  - - This link is from a GitHub repository that does not work.

5.10. PENINSULA

> **OLS, Ontobee and Agroportal**

- Class peninsula ENVO_00000305: A body of land jutting out into and nearly surrounded
  by water.
  - - Ontologies: ENVO, MICRO, GAZ.

> **LOV**

- Class place:Peninsula.
  - - URL: https://vocab.org/places/schema#Peninsula
  - - The link returns a 404-error message.
- Class lgdo:Peninsula.
  - - Ontology: LinkedGeoData.
  - - URI: http://linkedgeodata.org/ontology/Peninsula
  - - The link returns a 404-error message from a github page.
- Class pext:Place: A land region surrounded by water from most sides, but having land
  connect to bigger land region.
  - - Ontology: Proton.
  - - URI: http://www.ontotext.com/proton/protonext.html#Peninsula

5.11. PLATEAU

➢ **OLS, Ontobee and Agroportal**

- Class plateau: ENVO_00000182: An elevated and comparatively level expanse of land.
    - Ontologies: ENVO, EUPATH, GAZ, MICRO, GAZ.

➢ **LOV**

- Concept place:Plateau
    - URL: https://vocab.org/places/schema#Plateau
    - Return a 404-error message.

- Class lgdo:Plateau
    - Ontology: LinkedGeoData.
    - URI: http://linkedgeodata.org/ontology/Plateau
    - Return a 404-error message.

- Class pext:Plateau: Comparatively flat areas of great extent and elevation; specif. extensive land regions considerably above the adjacent country or above sea level; commonly limited on at least one side by an abrupt descent, have flat or nearly smooth surfaces but are often dissected by deep valleys and surmounted by high hills or mountains, and have a large part of their total surface at or near the summit level. We use this category for table mountains; and for tablelands.
    - Ontology: Proton.
    - URI: http://www.ontotext.com/proton/protonext.html#Plateau

6. ACCESION CODES

Nothing has been found.

6.1. ACCESION NUMBER (ACCENUMB)

➢ **OLS and Ontobee**

- Class Accession Number NCIT_C25402: A control number unique to an object. It is used to identify the object among other objects in a collection.
    - URI: http://purl.obolibrary.org/obo/NCIT_C25402
    - Ontologies: NCIT, ORNASEQ.

➢ **Agroportal**

- Class accession number CO_020:0000089.
    - Ontology: Multi-Crop Passport Ontology.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000089

- URI: http://www.cropontology.org/rdf/CO_020:0000089
    - This link returns a 404-error message.
- Class accession number CO_715_0000227: This number serves as a unique identifier for accessions and is assigned when an accession is entered into the collection. Once assigned this number should never be reassigned to another accession in the collection. Even if an accession is lost, its assigned number should never be reused. Letters should be used before the number to identify the genebank or national system (e.g. IDG indicates an accession that comes from the genebank at Bari, Italy; CGN indicates an accession from the genebank at Wageningen, The Netherlands; PI indicates an accession within the USA system).
    - Ontology: Crop Research Ontology.
    - Agroportal link: https://agroportal.lirmm.fr/ontologies/CO_715?p=classes&conceptid=http://purl.obolibrary.org/obo/CO_715_0000227
    - URI: http://purl.obolibrary.org/obo/CO_715_0000227
    - This link returns a 404-error message.
- **LOV:** nothing.

6.2. ACCESSION NUMBER AT THE NATIONAL CATALOGUE (NC)

Nothing has been found.

6.3. ACCESSION DOI (ACCEDOI)

- **OLS**
    - Class digital object identifier T4FS_0000434: A name (not a location) for an entity on digital networks. It provides a system for persistent and actionable identification and interoperable exchange of managed information on digital networks. A DOI is a type of Persistent Identifier (PID) issued by the International DOI Foundation. This permanent identifier is associated with a digital object that permits it to be referenced reliably even if its location and metadata undergo change over time.
        - Ontology: Terms4FAIRskills (T4FS).
- **Ontobee**
    - Class digital object identifier.
        - OBI_0002110: A centrally registered identifier symbol used to uniquely identify objects given by International DOI Foundation. The DOI system is particularly used for electronic documents such as journal articles.
        - NCIT_C71462: A unique code used by publishers in the identification and exchange of the content of a digital object, such as a journal article, web document,

or other item of intellectual property. The DOI consists of two parts: a prefix assigned to each publisher by the administrative DOI agency, and a suffix assigned by the publisher that may be any code the publisher chooses.

7. GERMPLASM BANK CODES

Nothing has been found.

7.1. INSTITUTE NAME (INSTNAME)

➢ **OLS**
- Class institute SIO_000688: institute is a society or organization having a object or common factor, and is normally applied to those with a scientific, educational, or social objective.
  - Ontologies: SIO, ONS.

➢ **LOV**
- Class pext:Institute: A research organization devoted primarily on search in some scientific research.
  - Ontology: Proton.
  - URI: http://www.ontotext.com/proton/protonext#Institute

➢ **Agroportal**
- Class Institute CO_715_0000075: The institute where the experiment was done.
  - Ontology: Crop Research Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_715?p=classes&conceptid=http://purl.obolibrary.org/obo/CO_715_0000075
  - URI: http://purl.obolibrary.org/obo/CO_715_0000075
  - Returns a 404-error message.

7.2. MANAGING INTITUTE NAME (MAGINSTNAME)

Nothing has been found.

7.3. COLLECTING INSTITUTE NAME (COLLCODE)

➢ **OLS, Ontobee and LOV:** nothing.
➢ **Agroportal**
- Class collecting institute name CO_020:0000111.
  - Ontology: Multi-Crop Passport Ontology.

- Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000111
- URI: http://www.cropontology.org/rdf/CO_020:0000111
- Returns an RDF/XML file.

8. LOCATION

➢ **Ontobee**

- Class Location NCIT_C25341: A position, site, or point in space where something can be found.
    - Thesaurus: NCIT.

8.1. COLLECTION SITE (COLLSITE)

➢ **OLS and Ontobee**

- Class specimen collection site GENEPIO_0002167: The physical location that a specimen was collected at. The location may be described by geographic coordinates, city or other geopolitical entity, biome, etc.
    - Ontology: GENEPIO.

8.2. DECIMAL LATITUDE (DECLATITUDE)

➢ **OLS and LOV**

- Class dcwdecimalLatitude: The geographic latitude (in decimal degrees, using the spatial reference system given in dwc:geodeticDatum) of the geographic center of a Location. Positive values are north of the Equator, negative values are south of it. Legal values lie between -90 and 90, inclusive.
    - Ontologies: BCO (found in OLS), DarwinCore (found in LOV).

8.3. DECIMAL LONGITUDE (DECLONGITUDE)

➢ **OLS**

- Class decimalLongitude: The geographic longitude (in decimal degrees, using the spatial reference system given in geodeticDatum) of the geographic center of a Location. Positive values are east of the Greenwich Meridian, negative values are west of it. Legal values lie between -180 and 180, inclusive.
    - Ontology: BCO.

8.4. COORDINATES UNCERTAINTY (COORDUNCERT)

➢ **Agroportal**

- Class coordinates uncertainty CO_020:0000094.
    - Ontology: Multi-Crop Passport Ontology

- Agroportal link:
  https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000094
- URI: http://www.cropontology.org/rdf/CO_020:0000094
- Returns an RDF/XML file.

8.5. GEOREFERENCING METHOD (GEOREFMETH)

➢ **Agroportal**

- Class georeferencing method CO_020:0000096.
  - Ontology: Multi-Crop Passport Ontology
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000096
  - Ontology link: http://www.cropontology.org/rdf/CO_020:0000096
  Returns an RDF/XML file.

8.6. COORDINATES DATUM (COORDDATUM)

➢ **OLS and Agroportal**

- Class GPS coordinates AGRO_00000572: A measurement datum that is a unique identifier of a precise geographic location on the earth, usually expressed in alphanumeric characters.
  - Ontology: AGRO.

➢ **LOV**

- Class a-loc:Coordinates: This class represents the set of coordinates, geographic or projected, which allows the georeferencing of an object. For the punctual georeferencing there is only a pair of coordinates. For the linear and areal georeferencing there are more pairs of coordinates identifying those points of the line or area representing the object.
  - Ontology: Location Ontology.
  - URI: https://w3id.org/arco/ontology/location/Coordinates

8.7. COORDINATES SYSTEM (COORDSYSTEM)

➢ **OLS**

- Class CoordinateSystem CDAO_0000104: A reference to an external coordinate system. Coordinates for data must refer to some such external coordinate system.
  - Ontologies: CDAO, MIAPA.

➢ **Ontobee and Agroportal**

- Class coordinate system SIO_000320: A coordinate system is a specification for spatial location that uses a set of numbers, or coordinates, to uniquely determine the position of a point or other geometric element.
    - Ontology: SIO.

8.8. ELEVATION (ELEVATION)

➢ **OLS, Ontobee and Agroportal**

- Class elevation PATO_0001687: A positional quality inhering in a bearer by virtue of the bearer's vertical distance of a point above or below a reference surface.
    - Other ontologies: ECTO, CAO, FLOPO, ZP, AGRO, MONDO, ENVO, MICRO, RBO, MS, GAZ, OBA.

8.9. MAJOR AREA (MAJORAREA)

➢ **Ontobee**

- Class continent GAZ_00000013 (synonym): One of the large, unbroken masses of land into which the Earth's surface is divided.
    - Ontology: GAZ.

8.10. PROVINCE (PROVINCE)

➢ **OLS**

- Class province ExO_0000097 or NCIT_C25632: A region, district, or division of a country; a tract; a portion a state, especially one remote from the capital.
    - Ontologies: ExO, NCIT.
- Class province SIO_000661: A province is a territorial unit, almost always an administrative division, within a country or state.
    - Ontology: SIO, Juso Ontology (http://rdfs.co/juso/Province).
    - *Also found in Ontobee, LOV and Agroportal.*

➢ **LOV**

- Class dbpedia-owl:Province: An administrative body governing a territorial unity on the intermediate level, between local and national level.
    - Ontology: DBpedia.
    - URI: http://dbpedia.org/ontology/province

8.11. MUNICIPALITY (MUNICIPALITY)

➢ **LOV**

- Class juso:municipality: A municipality is usually an urban administrative division having corporate status and usually powers of self-government or jurisdiction.
    - Ontology: Juso Ontology.
    - URI: http://rdfs.co/juso/Municipality

- Property dbpedia-owl:municipality.
    - Ontology: http://dbpedia.org/ontology/municipality

8.12. ISLAND NAME (ISLANDNAME)

➢ **Ontobee and Agroportal**

- Class island ENVO_00000098: Area of dry or relatively dry land surrounded by water or low wetland.
    - Ontologies: ENVO, AGRO, GAZ, GENEPIO, MICRO.

8.13. COUNTRY (COUNTRY)

➢ **OLS, Ontobee**

- Class country ExO_0000096 or NCIT_C25464: A collective generic term that refers here to a wide variety of dependencies, areas of special sovereignty, uninhabited islands, and other entities in addition to the traditional countries or independent states.
    - Ontologies: ExO, NCIT.
- Class country SIO_000664: A country is a region legally identified as a distinct entity in political geography. Also found in Agroportal.
    - Ontology: ISO.
- Class country IDO_0100645: A site that has a political border desrcibed by a geographical boundary, including all the entities ocuppies within this geographical boundary, such as people, building, river, mines, and so on.
    - Ontology: IDO.

➢ **LOV**

- Class juso:Country: A country is a region that is identified as a distinct entity in political geography. A country may be an independent sovereign state or one that is occupied by another state, as a non-sovereign or formerly sovereign political division, or a geographic region associated with sets of previously independent or differently associated people with distinct political characteristics.
    - Ontology: Juso Ontology.
    - URI: http://rdfs.co/juso/Country

9. ORIGINAL TAXONOMY

9.1. TAXON

- ➢ **Ontobee**
  - Class Taxon SLSO_0001063: Phylogenetic classification of the subject or biospecimen host.
    - Ontology: SLSO.
  - Class Taxon data_1868: The name of a group of organisms belonging to the same taxonomic rank. Also found in Agroportal.
    - Ontology: EDAM.
    - URI: http://edamontology.org/data_1868
  - Class Taxon OBI_0100026: A group of organisms considered by taxonomists to form a homogeneous unit.
    - Ontologies: Darwin Core (vocabulary), BCO, OBI.
    - URI: http://rs.tdwg.org/dwc/terms/Taxon
  - Class Taxon NCIT_C40098: Ranked categories for the classification of organisms according to their suspected evolutionary relationships.
    - Thesaurus: NCIT.
- ➢ **LOV**
  - Class dbpedia-owl Taxon: a category within a classification system for Species.
    - Ontology: DBpedia.
    - URI: http://mappings.dbpedia.org/index.php/OntologyClass:Taxon
- ➢ **Agroportal**
  - Class Taxon: An element of a taxonomy for classifying life forms.
    - Ontology: PEAO.
    - URI: http://purl.uniprot.org/core/Taxon

9.2. GENUS

- ➢ **LOV**
  - Class cdesc:Genus: This class represents one level of a biological taxon, the genus.
    - Ontology: dati.cultura.gov.it
    - URI: https://w3id.org/arco/ontology/context-description/Genus
  - Property wlo:Genus: Associates a taxon rank with a genus.
    - Ontology: Wildlife Ontology.
    - URI: https://purl.org/ontology/wo/genus
  - Class Genus: A genus is a scientific way of showing that species are very closed related to each other. In fact the first word of the species' scientific name is its genus. So for

lions (*Panthera leo*), Panthera is the genus and tells us that they are closely related to tigers (*Panthera tigris*), because they share the name

- - Ontology: Wildlife Ontology.
- - URI: https://purl.org/ontology/wo/Genus

➢ **Ontobee**

- • Property dwc:Genus: The full scientific name of the genus in which the dwc:Taxon is classified.
    - - Vocabulary: Darwin Core.
    - - IRI: http://rs.tdwg.org/dwc/terms/genus
- • Class NCIT_C45292: A taxonomic category ranking below a family (or Subfamily) and above a species and generally consisting of a group of species exhibiting similar characteristics.
    - - Thesaurus: NCIT.

➢ **Agropotal**

- • Class genus CO_020:0000005.
    - - Ontology: Multi-Crop Passport Ontology.
    - - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000005
    - - URI: http://www.cropontology.org/rdf/CO_020:0000005

9.3. SPECIES

➢ **OLS and Ontobee**

- • Class species NCIT_C45293: A group of organisms that differ from all other groups of organisms and that are capable of breeding and producing fertile offspring.
    - - Thesaurus: NCIT.

➢ **LOV**

- • Property species: associates a taxon rank with a species.
    - - Ontology: Wildlife Ontology.
    - - URI: https://purl.org/ontology/wo/species
- • Class species: Generic class defining a biological species.
    - - Ontology: Wildlife Ontology.
    - - URI: https://purl.org/ontology/wo/Species
- • Property dbpedia-owl:species.
    - - Ontology: DBpedia.
    - - URI: http://mappings.dbpedia.org/index.php/OntologyProperty:species
- • Class species: A category in the rating system.

- Ontology: DBpedia.

- URI: http://mappings.dbpedia.org/index.php/OntologyClass:Species

➢ **Agroportal**

- Class species CO_715_0000230: Specific epithet portion of the scientific name in lowercase letters plus authority. Following abbreviation is allowed: sp.

  - Ontology: Crop Research Ontology.

  - URI: http://purl.obolibrary.org/obo/CO_715_0000230

  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_715?p=classes&conceptid=http://purl.obolibrary.org/obo/CO_715_0000230

- Class species CO_020:0000006.

  - There is no definition.

  - Ontology: Multi-Crop Passport Ontology.

  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000006

  - URI: http://www.cropontology.org/rdf/CO_020:0000006

- Class species: A taxonomic category ranking immediately below a genus and including closely related, morphologically similar individuals which actually or potentially inbreed.

  - Thesaurus: GEMET.

  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/GEMET?p=classes&conceptid=http://www.eionet.europa.eu/gemet/concept/7982

  - URI: http://www.eionet.europa.eu/gemet/concept/7982

9.4. SPECIES AUTHOR (SPAUTHOR)

Nothing has been found.

9.5. SUBTAXA (SUBTAXA_1)

➢ **Agroportal**

- Class subtaxa CO_715_0000231: Subtaxa can be used to store any additional taxonomic identifier.

  - Ontology: Crop Research Ontology.

  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_715?p=classes&conceptid=http://purl.obolibrary.org/obo/CO_715_0000231

- URI: http://purl.obolibrary.org/obo/CO_715_0000231

- Class subtaxa CO_020:0000008.
  - There is no definition.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000008
  - URI: http://www.cropontology.org/rdf/CO_020:0000008

9.6. RANK (RANK1)

➢ **OLS and Ontobee**
- Class rank NCIT_C48904: A relative status as compared to others within a group.
  - Thesaurus: NCIT.

➢ **LOV**
- Property rank: Rank of something among other things of the same kind.
  - Ontology: dbpedia.
  - URI: http://mappings.dbpedia.org/index.php/OntologyProperty:rank

➢ **Agroportal**
- Class rank name CO_715_0000232: The rank of the subtaxon name.
  - Ontology: Crop Research Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_715?p=classes&conceptid=http://purl.obolibrary.org/obo/CO_715_0000232
  - URI: http://purl.obolibrary.org/obo/CO_715_0000232

9.7. SUBAUTHOR (SUBTAUTHOR_1)

Nothing has been found.

9.8. FAMILY (FAMILY)

➢ **OLS, Ontobee and Agroportal**
- Class family SIO_001063: A group of people affiliated by consanguinity, affinity, or co-residence.
  - Ontology: SIO.
- Class family GSSO_003265: A group of people related either by consanguinity (by recognized birth), affinity (by marriage or other relationship), or co-residence (as implied by the etymology of the English word "family") or some combination of these. The purpose of families is to maintain the well-being of its members and of society. Ideally,

families would offer predictability, structure, and safety as members mature and participate in the community.

- Ontology: GSSO.

  *Also found in OLS

- Class family STATO_0000257 or PCO_0000020: A domestic group, or a number of domestic groups linked through descent (demonstrated or stipulated) from a common ancestor, marriage, or adoption.
  - Ontologies: PCO, SATO.
  - URI: http://purl.obolibrary.org/obo/PCO_0000020

➢ **LOV**

- Class family: A family is a scientific grouping of closely related organisms. It has smaller groups, called genera and species, within it. A family can have a lot of members or only a few. Examples of families include the cats (*Felidae*), the gulls (*Laridae*) and the grasses (*Poaceae*).
  - Ontology: Wildlife Ontology.
  - URI: https://purl.org/ontology/wo/Family
- Property family: associates a taxon rank with a family.
  - Ontology: Wildlife Ontology.
  - URI: https://purl.org/ontology/wo/family

9.9. DETERMINATED BY (DETBY)

Nothing has been found.

9.10. DETERMINATION STATUS (DETSTATUS)

Nothing has been found.

9.11. DETERMINATION NOTES (DETNOTES)

Nothing has been found.

9.12. DETERMINATION DATE (DETDATE)

Nothing has been found.

10.   COMMON NAME

10.1. COMMON NAME (COMMONAME)

➢ **OLS**

- Class common name SLSO_0001065: A textual entity refers to a taxon or organism that is based on the normal language of everyday life; this kind of name is often contrasted with the scientific name for the same organism, which is Latinized.
    - Ontology: SLSO.
- Class common name of organism OBI_0003074: A textual entity refers to a taxon or organism that is based on the normal language of everyday life; this kind of name is often contrasted with the scientific name for the same organism, which is Latinized.
    - Ontology: OBI.

➢ **LOV**

- Class common name: Associates a formal taxon name with a common version. E.g. *Panthera leo* might be associated with a common name of 'Lion'. A given taxon name may have several common names.
    - Ontology: Wildlife Ontology.
    - URI: https://purl.org/ontology/wo/commonName

➢ **Agroportal**

- Class common crop name CO_020:0000010.
    - There is no definition.
    - Ontology: Multi-Crop Passport Ontology.
    - Agroportal link: https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000010
    - URI: http://www.cropontology.org/rdf/CO_020:0000010

10.2. VERNACULAR NAME (VERNACULAR)

➢ **OLS and Ontobee**

- Class vernacular name NOMEN_0000037: there is no definition.
- Property vernacular name: a common or vernacular name.
    - Vocabulary: Darwin Core.
    - IRI: http://rs.tdwg.org/dwc/terms/vernacularName

➢ **Agroportal**

- Class vernacular name CO_326:0000650: local/vernacular name.
    - Ontology: Coconut Ontology.
    - URI: https://cropontology.org/rdf/CO_326:0000650

10.3. LANGUAGE (LANGUAGE)

➢ **Ontobee**

- Class language SIO_000104: Language is a language entity which is the result of encoding and decoding information through systematic creation and usage of systems of symbols, each pairing a specific sign with an intended meaning, established through social conventions.
  - Ontology: SIO.
- Class language D007802: A verbal or nonverbal means of communicating ideas or feelings. Language forms, particularly oddities of pronunciation and syntax, that are associated with a region or a group.
  - Vocabulary: Medical Subject Headings.
  - URI: http://purl.bioontology.org/ontology/MESH/D007802
- Class language NCIT_C16779: A systematic means of communicating by the use of sounds, symbols, or gestures.
  - Thesaurus: NCIT.

➢ **LOV**

- Property language: Natural languages such as Spanish, Tamil, Hindi, English, etc.
  - Vocabulary: schema.org
  - URI: https://schema.org/Language

11. DATES

➢ **Agroportal**

- Class date descriptor CO_020:0000086.
  - There is no definition.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000086
  - URI: http://www.cropontology.org/rdf/CO_020:0000086

11.1. ADQUISITION DATE (ACQDATE)

➢ **Agroportal**

- Class adquisition date CO_020:0000012.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http%3A%2F%2Fwww.cropontology.org%2Frdf%2FCO_020%3A0000012
  - URI: http://www.cropontology.org/rdf/CO_020:0000012

11.2. COLLECTING DATE (COLLDATE)

➢ **Agroportal**

- Class collecting date of sample CO_020:0000018.
  - Ontology: Multi-Crop Passport Ontology.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000018
  - URI: http://www.cropontology.org/rdf/CO_020:0000018

11.3. COLLECTION DAY (COLLDD)

Nothing has been found.

11.4. COLLECTION MONTH (COLLMM)

Nothing has been found.

11.5. COLLECTION YEAR (COLLYY)

Nothing has been found.

12. MOTIVES AND PERMITS

➢ **OLS and Ontobee**

- Class permits ICO_0000216: A relation holding between an instance of a deontic role and an instance of an intentional action when the deontic role bearer participates in the intentional action and is allowed to do so.
  - Ontology: ICO.

12.1. CONSERVATION PERMIT (CONSRVMOTIVE)

Nothing has been found.

12.2. COLLECTING PERMIT (COLLPERMIT)

Nothing has been found.

12.3. LEGAL AGREEMENT (LEGAL AGREEMENT)

Nothing has been found.

12.4. COLLECTING MISSION (COLLMISSID)

➢ **Agroportal**

- Class collecting mission identifier CO_020:0000091.
    - There is no definition.
    - Ontology: Multi-Crop Passport Ontology.
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000091
    - URI: http://www.cropontology.org/rdf/CO_020:0000091

13. *IN SITU* CONSERVATION STATUS OR CONSERVATION ACTIONS

➢ **LOV**

- Class wlo:ConservationStatus: Conservation status as described by the IUCN Red List. Will typically have a number of properties including an official IUCN status, population trend, and a year of assessment.
    - Ontology: Wildlife Ontology.
    - URI: https://purl.org/ontology/wo/ConservationStatus
- Property wlo:ConservationStatus: associates a taxon rank with a description of a recent assessment of its conservation status.
    - Ontology: Wildlife Ontology.
    - URI: https://purl.org/ontology/wo/conservationStatus
- Property dbpedia-owl:ConservationStatus.
    - Ontology: DBpedia.
    - URI:
      http://mappings.dbpedia.org/index.php/OntologyProperty:conservationStatus

➢ **Agroportal**

- Class conservation status: The conservation status of a group of organisms (for instance, a species) indicates whether the group is extant (members of it are still alive) and how likely the group is to become extinct in the near future.
    - Ontology: Cerrado Concepts and Plant Community Dynamics (CCON).
    - URI: http://cerrado.linkeddata.es/ecology/ccon#ConservationStatus

13.1. IUCNRL

➢ **LOV**

- Property wlo:RedListStatus: Associates a Conservation Status with a category in the IUCN Red List.
  - Ontology: Wildlife Ontology.
  - URI: https://purl.org/ontology/wo/redListStatus

13.2. LIST OF WILD SPECIES UNDER SPECIAL PROTECTION AND SPANISH CATALOGUE OF SPECIES (LESPRE)

Nothing has been found.

13.3. NATIONAL CATALOGUE OF ENDANGERED SPECIES (CEA_ESP)

Nothing has been found.

13.4. REGIONAL CATALOGUE OF ENDANGERED SPECIES (CEA_AUT)

Nothing has been found.

13.5. CROP WILD RELATIVES (CWR)

Nothing has been found.

13.6. STATUS IN THE MULTILATERAL SYSTEM FAO (MLSSTAT)

Nothing has been found.

13.7. CONSERVATION ACTIONS (CONSACTION)

Nothing has been found.

13.8. RESTRICTIONS ON ONLINE PUBLICATIONS (RESTR)

Nothing has been found.

14. ENVIROMENT

➢ **LOV**

- Property EnviromentProperty: Qualifiable or quantifiable attribute, or characteristic of the enviroment in which a test has been / or should be carried out.
  - Ontology: TribOnt.
  - IRI: https://w3id.org/tribont/core#EnvironmentProperty

14.1. THREAT

➢ **OLS, Ontobee and Agroprotal**

- Class threat NBO_0020108: Behaviour that signifies hostility and predicts an increased probability of attack.

- Ontologies: NBO, ECOCORE, OBA.

➢ **LOV**

- Property threat description: Description of the threat(s) that have been identified as part of the assessment of the Conservation Status of a taxon.
  - Ontology: Wildlife Ontology.
  - URI: https://purl.org/ontology/wo/adaptation

14.2. ASPECT

Nothing has been found.

14.3. SLOPE

➢ **OLS, Ontobee and Agroportal**

- Class slope ENVO_00002000: A solid astronomical body part which is part of the planetary surface between the peak of an elevation or the bottom of a depression and relatively flat surrounding land.
  - Ontologies: ENVO, ECTO, MICRO, AGRO, GENEPIO, RBO, MONDO, GAZ, FOODON.
- Class slope SIO_001184: A slope or gradient of a line describes its steepness, incline, or grade. A higher slope value indicates a steeper incline. Slope is normally described by the ratio of the "rise" divided by the "run" between two points on a line.
  - Ontology: SIO.

➢ **Agroportal**

- Concept slope: The inclined surface of any part of the Earth's surface, as a hillslope; also, a broad part of a continent descending toward an ocean, as the Pacific slope.
  - Thesaurus: GEMET and ANAETHEES.

14.4. REACTION HCL

Nothing has been found.

14.5. SALT TYPES

Nothing has been found.

14.6. STONINESS

➢ **OLS and Agroportal**

- Class soil surface stoniness AGRO_ 00000654: Area of soil surface covered by stones.
  - Ontology: AGRO.

➢ **Agroportal**

- Class stoniness CO_715_0000087.
  - There is no definition. Synonym: rockiness.
  - Ontology: Crop Research Ontology.

- URI: http://purl.obolibrary.org/obo/CO_715_0000087
- Returns an RDF/XML file.

14.7. ROCKINESS

➢ **OLS and Agroportal**

- Class field rockiness AGRO_00000666: Amount of rock in an agricultural field.
    - Ontology: AGRO.

14.8. TEXTURE

➢ **OLS and Agroportal**

- Class texture PATO_0000150: A morphologic quality inhering in a bearer by virtue of the bearer's relative size, organization and distribution of its surface elements or the representation or invention of the appearance of its surface; visual and tactile surface characteristics.
    - Ontologies: PATO, CPONT ZP, BAO, AGRO, AISM, MONDO, XPO, FOVT, TO, FYPO, GALLONT, PCL, ENVO, WBPHENOTYPE, RBO, UBERON, NBO, HP, GAZ, OBA, ECTO, HCAO, FLOPO, ENM, OMP, MICRO, DPO, MAXO, MP, ECOCORE, MS, CL

14.9. GEOLOGY

➢ **OLS**

- Class geology OMIT_0007039: Geology is the study or science of the earth, its history, and its life as recorded in the rocks; includes the study of geologic features of an area, such as the geometry of rock formations, weathering and erosion, and sedimentation. AL 18.6.2019: This class' label was updated when the original re3data subject 'Geology and Paleontology' was split into two sibling classes.
    - Ontologies: SRAO, OMIT.

➢ **Agroportal**

- Concept geology: The study or science of the earth, its history, and its life as recorded in the rocks; includes the study of geologic features of an area, such as the geometry of rock formations, weathering and erosion, and sedimentation.
    - Thesaurus: GEMET.
    - URL: http://www.eionet.europa.eu/gemet/concept/3650

14.10. LEAF LITTER

➢ **Agroportal**

- Class leaf litter SFWO_0000148: Plant litter that is primarily composed of leaves/needles.
    - Ontology: Soil Food Web Ontology.
    - URI: http://purl.org/sfwo/SFWO_0000148

14.11. ORGANIC MATTER

- ➢ **OLS**
  - Class soil organic matter ENVO_04000008: Organic material in soil, which consists of plant and animal residues at various stages of decomposition, cells and tissues of soil organisms, and substances synthesized by soil organisms.
    - Ontologies: ENVO, AGRO, RBO, ENM, GAZ.
- ➢ **Agroportal**
  - Class organic matter OBT_000365.
    - There is no definition.
    - Ontology: OntoBiotope.
    - URI: http://purl.obolibrary.org/obo/OBT_000365

14.12. TOPOGRAPHY

- ➢ **Agroportal**
  - Class Topography CO_715_0000059: This refers to the profile in elevation of the land surface on a broad scale.
    - Ontology: Crop Research Ontology.
    - URI: http://purl.obolibrary.org/obo/CO_715_0000059

14.13. HABITAT DESCRIPTION (HABITATTXT)

Description in Wild Habitat.

14.14. MICRO HABITAT (MICROHABITAT)

Nothing has been found.

14.15. LANDUSE

- ➢ **LOV**
  - Class lgdo:Landuse.
    - Ontology: LinkedGeoData.
    - URI: http://linkedgeodata.org/ontology/Landuse
    - The URI returns a 404-error message.

14.16. ASOCIATED PLANT SPECIES (ASSPLANTSPECIES)

Nothing has been found.

14.17. VEGETATION COVER (VEGCOVER)

- ➢ **Agroportal**
  - Class Vegetation/Rock cover CO_357:1000090: Assessment of the amount of vegetation or rock cover on the ground around the tree.

- Ontology: Woody Plant Ontology.
  - URI: https://cropontology.org/rdf/CO_357:1000090
- Concept vegetation cover: Number of plants growing on a certain area of land.
  - Thesaurus: GEMET.
  - Agroportal link:
    https://agroportal.lirmm.fr/ontologies/GEMET?p=classes&conceptid=http://www.eionet.europa.eu/gemet/concept/8908
  - URL: http://www.eionet.europa.eu/gemet/concept/8908

14.18. HEALTH CONDITION (HEALTHCON)

OLS and Ontobee

- Class health condition GSSO_000484: A state of being related to an organism's health.
  - Ontology: GSSO.

15. POPULATION (DESCRIBED *IN SITU*)

➢ **LOV**

- Property db-pedia_owl:populationTotal.
  - Ontology: DBpedia.
  - URI: http://mappings.dbpedia.org/index.php/OntologyProperty:populationTotal
- Class db-pedia_owl:population: There is no definition.
  - Ontology: DBpedia.
  - URI: http://mappings.dbpedia.org/index.php/OntologyClass:Population

➢ **Ontobee and Agroportal**

- Class population OBI_0000181: A population is a collection of individuals from the same taxonomic class living, counted or sampled at a particular site or in a particular area.
  - Ontologies: IBO, IDO, IDOMAL, AGRO.
- Class population SIO_001061: A population is all the organisms that both belong to the same group or species and live in the same geographical area.
  - Ontology: SIO.
- Class population group NCIT_C17005: A group of individuals united by a common factor (e.g., geographic location, ethnicity, disease, age, gender).
  - Thesaurus: NCIT.
    Only appears in Ontobee.

15.1. COLLECTING NUMBER (COLLNUMB)

➢ **Agroportal**

- Class collecting number CO_020:0000003.
    - There is no definition.
    - Ontology: Multi-Crop Passport Ontology.
    - URI: http://www.cropontology.org/rdf/CO_020:0000003

15.2. ORIGINSTAT

Nothing has been found.

15.3. CULTIVATED

Nothing has been found.

15.4. POPULATION SIZE (POPSIZE)

➢ **OLS and Ontobee**

- Class population size GECKO_0000008: A sample size that is about the count of individual organisms in a population.
    - Ontology: Genomics Cohorts Knowledge Ontology (GECKO).

15.5. POPULATION AREA (POPAREA)

Nothing has been found.

16. SAMPLE

➢ **LOV**

- Property adms:sample: Links to a sample of an Asset (which is itself an Asset).
    - From: ADMS Vocabulary.
    - URI: http://www.w3.org/ns/adms#sample
- Class sosa:sample: Feature which is intended to be representative of a FeatureOfInterest on which Observations may be made.
    - Ontology: SOSA (from Semantic Sensor Network Ontology).
    - IRI: http://www.w3.org/ns/sosa/Sample
    Also found in Agroportal.
- Class tribont-sample:Sample: Portion of material which can be transformed or not for Testing purposes. For example, the moving and static samples in a tribological tests are transformed following a specific manufacturing process to achieve the required body characteristics, while lubricants acting as lubrication body are not transformed.
    - Ontology: TriOnt.
    - IRI: https://w3id.org/tribont/sample#Sample

➢ **Ontobee and Agroportal**

- Class sample SIO_001050: A sample is a limited quantity of something (e.g. an individual or set of individuals from a population, or a portion of a substance) to be used for testing, analysis, inspection, investigation, demonstration, or trial use.
  - Ontology: SIO.

16.1. PLANT SAMPLED (PLANTSAMP)

Nothing has been found.

16.2. SAMPLED AREA (SAMPLEAREA)

Nothing has been found.

16.3. THOUSAND SEED WEIGHT (TPSW)

We found this term in Ontobee as TO_0000382 (also in AGRO) but the link returns the message "Term not found".

16.4. TOTAL WEIGHT (TOTALWT)

Nothing has been found.

16.5. HERBARIUM CODE (HERBCODE)

Nothing has been found.

16.6. HERMABIRUM SPECIMEN NUMBER (SPECNUMBER)

Nothing has been found.

16.7. DNA SAMPLE (DNASAMPLE)

➢ **OLS and Ontobee**

- Class DNA Specimen NCIT_C198567: A biospecimen created to contain an isolated or enriched DNA sample.
  - Thesaurus: NCIT.

16.8. VOUCHER (VOUCHER)

➢ **OLS and Ontobee**

- Class voucher NCIT_C128456: A document that can be exchanged for particular goods or services or one serving as a record of money paid.
  - Thesaurus: NCIT.

16.9. COLLECTING INSTITUTE NAME (COLLNAME)

➢ **Agroportal**

- Class collecting institute name CO_020:0000111.
  - There is no definition.
  - Ontology: Multi-Crop Passport Ontology.

- Agroportal link:

  https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000111

- URI: https://cropontology.org/rdf/CO_020:0000111

- This link returns an RDF/XML file as the previous one.

16.10. COLLECTING INSTITUTE ADDRESS (COLLINSTADRESS)

➤ **Agroportal**

- Class collecting institute address CO_020:0000090.

  - There is no definition.

  - Ontology: Multi-Crop Passport Ontology.

  - Agroportal link:

    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000090

  - URI: http://www.cropontology.org/rdf/CO_020:0000090

  - This link returns an RDF/XML file.

16.11. COLLECTOR (COLLECTOR)

Nothing has been found.

16.12. ASSCOLLECTORS

Nothing has been found.

17. PHOTOGRAPHS

➤ **OLS and Ontobee**

- Class photograph SIO_000082: A photograph is an image created by light falling on a light-sensitive surface.

  - Ontology: SIO

  Also found in Agroportal.

- Class photograph IAO_0000185: A photograph is created by projecting an image onto a photosensitive surface such as a chemically treated plate or film, CCD receptor, etc.

  - Ontologies: IAO, AGRO, BCO, CSOPRA (found in Agroportal).

- Class photograph NCIT_C86035: An image recorded by a camera.

  - Thesaurus: NCIT.

- Class photographs OMIT_0027514: There is no definition.

  - Ontology: OMIT.

- ➢ **Agroportal**
  - Concept photograph: An image captured by a camera or some other device and reproduced as a picture, usually on a sensitized surface and formed by the chemical action of light or of radiant energy.
    - Thesaurus: GEMET.
    - Agroportal link: https://agroportal.lirmm.fr/ontologies/GEMET?p=classes&conceptid=http://www.eionet.europa.eu/gemet/concept/6205
    - URL: http://www.eionet.europa.eu/gemet/concept/6205

17.1. IMAGES

- ➢ **OLS**
  - Property image: An image of the item. This can be a [[URL]] or a fully described [[ImageObject]].
    - Ontologie: schema.org
    - URL: http://schema.org/image
    - Other ontologies: GAZ, MAXO, ECTO, ENVO, ENM, FOODON.
- ➢ **Ontobee and Agroportal**
  - Class image IAO_0000101: An image is an affine projection to a two dimensional surface, of measurements of some quality of an entity or entities repeated at regular intervals across a spatial range, where the measurements are represented as color and luminosity on the projected on surface.
    - Ontologies: IAO, BCO, SDGIO, AGRO,ENVO.
    - URI: http://purl.obolibrary.org/obo/IAO_0000101
  - Class image SIO_000081: An image is an affine projection of a visual entity to a two dimensional surface.
    - Ontology: SIO.
    - URI: http://semanticscience.org/resource/SIO_000081

17.2. IDI IMAGE (IDIMAGE)

Nothing has been found.

17.3. ID NUBE (IDNUBE)

Nothing has been found.

17.4. PHOTO ROOT (FOTORUTA)

Nothing has been found.

17.5. NAME IMAGE (NOMBREIMAGEN)

Nothing has been found.

17.6. PHOTOS (PHOTOS)

➢ **OLS and Ontobee**

- Property photo: A photograph of this place.
    - Ontology: schema.org
    - URL: http://schema.org/photo

➢ **LOV**

- Property photos: Photographs of this place.
    - Ontology: schema.org
    - URL: https://schema.org/photos

18. DUPLICATES OF BGV-UPM ACCESSIONS

Nothing has been found.

18.1. DUPLICATE SITE (DULPSITE)

Nothing has been found.

18.2. DUPLICATE NAME (DULPNAME)

Nothing has been found.

18.3. DUPLICATE NUMBER (DULPNUMBER)

Nothing has been found.

19. DONATIOS TO THE BGV-UPM

Nothing has been found.

19.1. DONOR ORGANISATION (DONORORG)

Nothing has been found.

19.2. DONOR CODE (DONORCODE)

➢ **Agroportal**

- Class donor institute code CO_020:0000023.
    - There is no definition.
    - Ontology: Multi-Crop Passport Ontology.
    - URI: http://www.cropontology.org/rdf/CO_020:0000023
    - Agroportal link:
      https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000023

19.3. DONOR ACCESSION NUMBER (ACCESSIOND)

➢ **OLS and Ontobee**

- Class Donor Registry Idenfier NCIT_C164796: A unique symbol that establishes identity of the donor registry.

  - Thesaurus: NCIT.

  - URI: http://purl.obolibrary.org/obo/NCIT_C164796

➢ **Agroportal**

- Class donor accession number CO_020:0000024.

  - There is no definition.

  - Ontology: Multi-Crop Passport Ontology.

  - URI: http://www.cropontology.org/rdf/CO_020:0000024

  - Agroportal link:

    https://agroportal.lirmm.fr/ontologies/CO_020?p=classes&conceptid=http://www.cropontology.org/rdf/CO_020:0000024

- Class Accession number at the donor institution CO_326:0000456: Provide accession number at the donor institution if any…

  - Ontology: Coconut Ontology.

  - URI: https://cropontology.org/rdf/CO_326:0000456

  - Agroportal link:

    https://agroportal.lirmm.fr/ontologies/CO_326?p=classes&conceptid=https://cropontology.org/rdf/CO_326:0000456

19.4. DISTRIBUTION POLICY (DISTPOLICY)

Nothing has been found.

19.5. DONOR NOTE (DONORNOTE)

Nothing has been found.

19.6. DONOR DATE (DONORDATE)

Nothing has been found.

20.   ARCHAELOGICAL FIELDS

Nothing has been found.

21.   MANAGEMENT FIELDS IN BANSEM

Nothing has been found.

21.1. ARTEMIS

Nothing has been found.