Introduction to AGROVOC Concept Scheme

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Outline

- AGROVOC Thesaurus
- AGROVOC Concept Scheme
- AGROVOC Linked Open Data
- VocBench

AGROVOC Thesaurus

- AGROVOC is a 30 years old multilingual vocabulary containing more than 40 000 concepts in 21 languages
- It covers topics related to food, nutrition, agriculture, fisheries, forestry, environment and related domains
- Its purpose is to stardardize the indexing process to make searching simpler and more efficient
- AGROVOC is used by terminologists, librarians, researchers, AGRIS centers that index agricultural bibliographic resources
- A community of editors maintain AGROVOC using VocBench, a tool supporting SKOS and OWL that allows to edit concepts information, seach concepts, exports data in SKOS

AGROVOC Concept Scheme

- SKOS (Simple Knowledge Organisation System) is a data model for representation of classification schemes, taxonomies, thesauri and every structured controlled vocabulary
- AGROVOC is a thesauri expressed as a concept scheme using SKOS
- The conversion from relational database to SKOS added semantics value to relationships

Structure of AGROVOC Concept Scheme

- Three levels of representation
- **Concepts** are the abstract meaning and globally identified using URIs. They build the actual structure of the concept scheme.
  - e.g. ‘maize’ in the sense of a cereal
- **Terms** are language-specific lexical formes attached to concepts. A concept is represented by all terms, pregferred and non-preferred, in all languages, to which it is associated.
  - e.g. ‘maize’, ‘maïs’, ‘玉米’ , ‘ข้าวโพด’
- **Term variants** are the range of forms that can occur for each term (spelling variants, abbreviations…)
  - e.g. ‘organization’ or ‘organisation’, ‘cow’ or ‘cows’

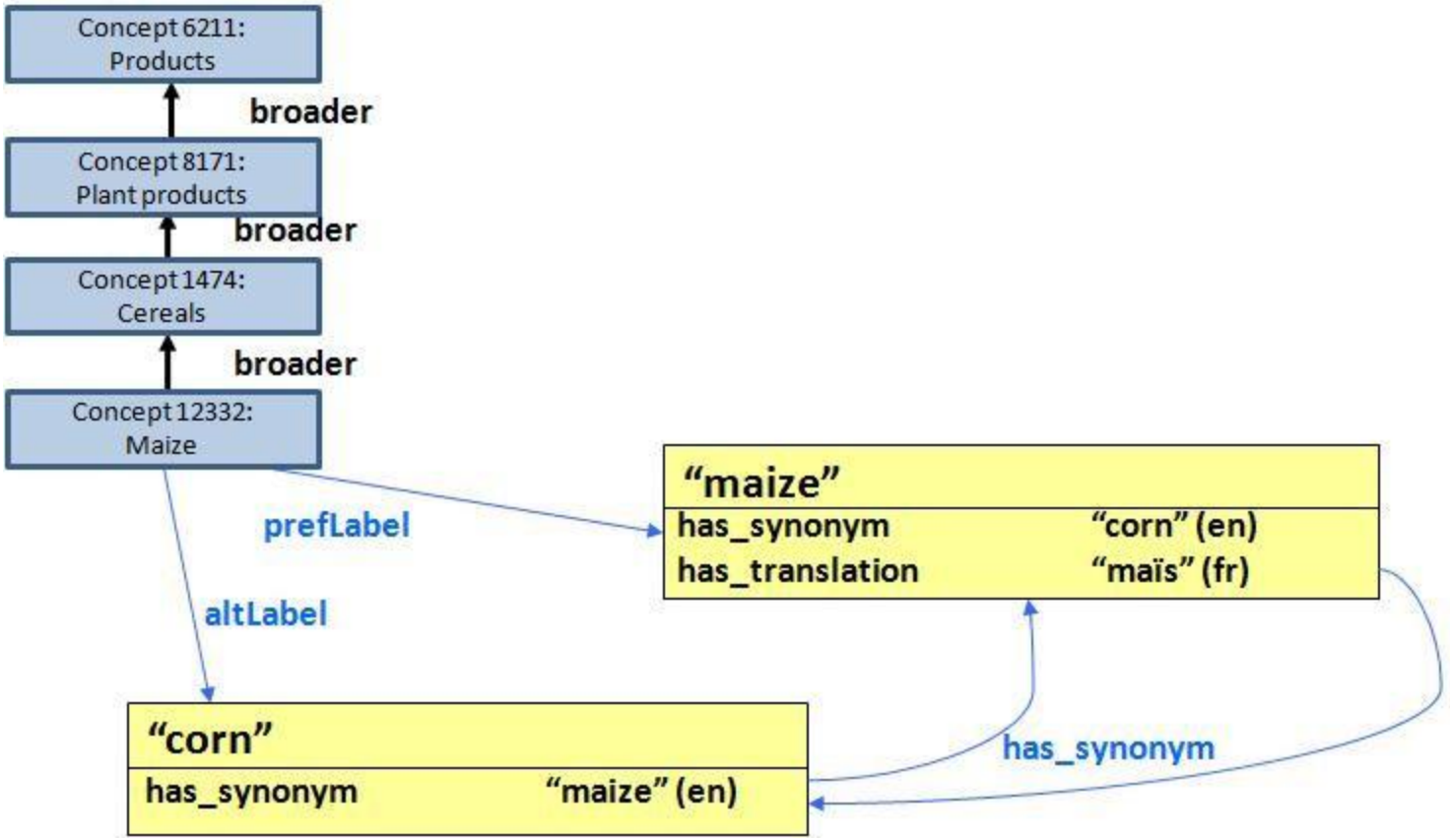
Inter-level relationships

- Used to associate concepts to terms and terms to strings
- **Concept-to-Term**: *has_lexicalization* (links concepts to their lexical realizations) links a concept to its language-dependent terms
  - (concept) rice has_lexicalization (English term) rice.
- **Term-to-String**: *has_acronym*, *has_spelling_variant*, *has_abbreviation* (link language-dependent terms to their variants)
  - European Union has_acronym EU

Intra-level relationships

- Used to associate concepts to concepts and terms to terms
- **Concept-to-Concept**: relates two different ideas, such as *has_subconcept*, *is_used_to_make*
  - cereals has_subconcept maize
  - maize is_used_to_make corn flour
- **Term-to-Term**: relates two terms that belong to the same concept, such as *has_synonym*, *has_scientific_name*
  - maize has_synonym corn
  - beetles has_scientific_name Coleoptera.

An AGROVOC fragment



AGROVOC Linked Open Data

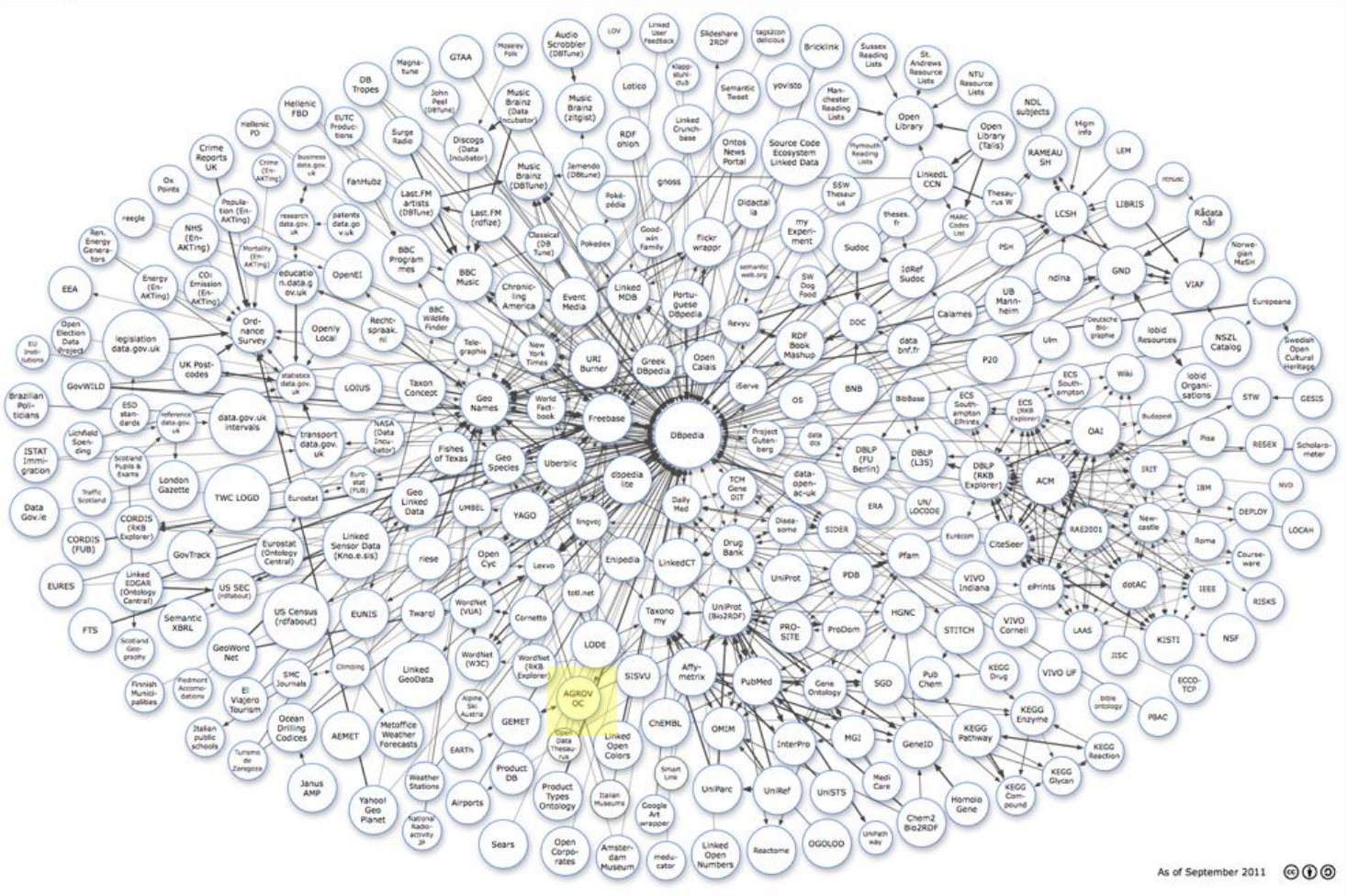
- AGROVOC is published in the Linked Open Data cloud
- It is aligned (i.e. linked) with 12 other vocabularies
- A sparql endpoint is available to query Agrovoc triples:
  - http://agrovoc.mimos.my:55824/catalogs/performance/repositories/agrovoc
- A modified version of the Pubby (http://www4.wiwiss.fu-berlin.de/pubby/) linked data fron end is provided to allow URI dereferencing, i.e. to obtain the HTML or RDF description of a concept given its URI

AGROVOC Linked Open Data

- Each Agrovoc concept is uniquely identified by a URI, starting with the prefix http://aims.fao.org/aos/agrovoc/
- Relationships *skos:broader, skos:narrower, skos:related* link an AGROVOC concept to another AGROVOC concept
  - e.g. agrovoc:c_12332 skos:narrower agrovoc:c_14385
- AGROVOC concepts are also linked to other external sources. An automatic tool extracts exact string matching, then manually checked to ensure correctness
  - e.g. the Agrovoc concept http://aims.fao.org/aos/agrovoc/c_12332 is linked to the EUROVOC concept http://eurovoc.europa.eu/219871 by the predicate *skos:exactMatch* since both represent the same product *Maize*

Linked Data Cloud 2011

"Linking Open Data cloud diagram, by Richard Cyganiak and Anja Jentzsch. http://lod-cloud



Resource	Topics	Concepts	Languages	Linked Data	Type of link
AGROVOC	Agriculture, food, fishery, forestry	31 956	EN, ES, FR + 19 more	Yes	skos:broader, skos:narrower, skos:related
EUROVOC	General EU	6 779	EN, ES, FR + 21 more	Yes	skos:exactMatch
GEMET	Environment	5 298	EN, ES, FR + 30 more	Yes	skos:exactMatch
Library of Congress Subject Headings (LCSH)	General	30 784	EN	Yes	skos:exactMatch
NAL Thesaurus	General	30 298	EN, ES	Yes	skos:exactMatch
RAMEAU Répertoire d'autorité-matière encyclopedique et alphabetique unifie	General	16 407	FR	Yes	skos:exactMatch
STW - Thesaurus for Economics	Economy	1 165	EN, DE	Yes	skos:exactMatch
TheSoz - Thesaurus for the Social Sciences	Social sciences	7 750	EN, DE	Yes	skos:exactMatch
Geopolical Ontology	Country Names	253	AR, CH, EN, ES, FR, RU	Yes	skos:exactMatch
Dewey Decimal Classification	General	409	EN, ES, FR + 8 more	Yes	skos:exactMatch
DBpedia	General	10 989	EN, ES, FR + 8 more	Yes	skos:exactMatch skos:closeMatch
SWD (Schlagwortnormdatei)	General	6 245	DE	Yes	skos:exactMatch skos:closeMatch skos:broadMatch skos:narrowMatch
GeoNames	Geographical database	212	EN, ES, FR + 63 more	Yes	skos:exactMatch

maize at AGROVOC Thesaurus

http://aims.fao.org/aos/agrovoc/c_12332

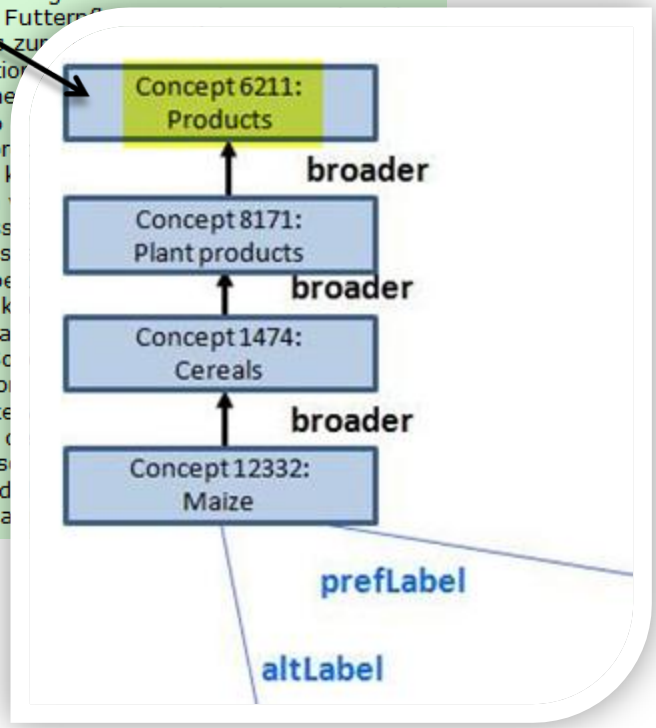
Property	Value
altLabel	■ Granoturco (it) ■ Ziarno kukurydzy (pl) ■ corn (maize) (en) ■ kukorica (hu) ■ zrno (kukurica) (sk) ■ zrno kukuřice (cs) ■ зерно кукурузы (ru) ■ अनाज (मक्का) (hi) ■ コーン (ja) ■ 苞谷 (zh)
broader	■ <http://aims.fao.org/aos/agrovoc/c_1474>
closeMatch	■ <http://dbpedia.org/resource/Maize>
exactMatch	■ <http://d-nb.info/gnd/4037135-9> ■ <http://eurovoc.europa.eu/1744> ■ <http://zbw.eu/stw/descriptor/14093-4>
date of creation	■ 1981-01-26
date of last update	■ 2005-08-09
isProducedBy	■ <http://aims.fao.org/aos/agrovoc/c_8504>
isUsedToMake	■ <http://aims.fao.org/aos/agrovoc/c_15500> ■ <http://aims.fao.org/aos/agrovoc/c_25472>
narrower	■ <http://aims.fao.org/aos/agrovoc/c_14385> ■ <http://aims.fao.org/aos/agrovoc/c_2187> ■ <http://aims.fao.org/aos/agrovoc/c_2974> ■ <http://aims.fao.org/aos/agrovoc/c_6108> ■ <http://aims.fao.org/aos/agrovoc/c_7152> ■ <http://aims.fao.org/aos/agrovoc/c_7552> ■ <http://aims.fao.org/aos/agrovoc/c_8337>
prefLabel	■ Kukurydza (ziarno) (pl) ■ MAIS (de) ■ Mais (it) ■ Maíz (es) ■ Maïs (fr) ■ Milho (pt) ■ kukorica (hu) ■ kukurica siata (sk) ■ kukuřičné zrno (cs)

About: Zea mays

An Entity of Type : plant, from Named Graph : http://dbpedia.org, within Data Space : dbpedia.org

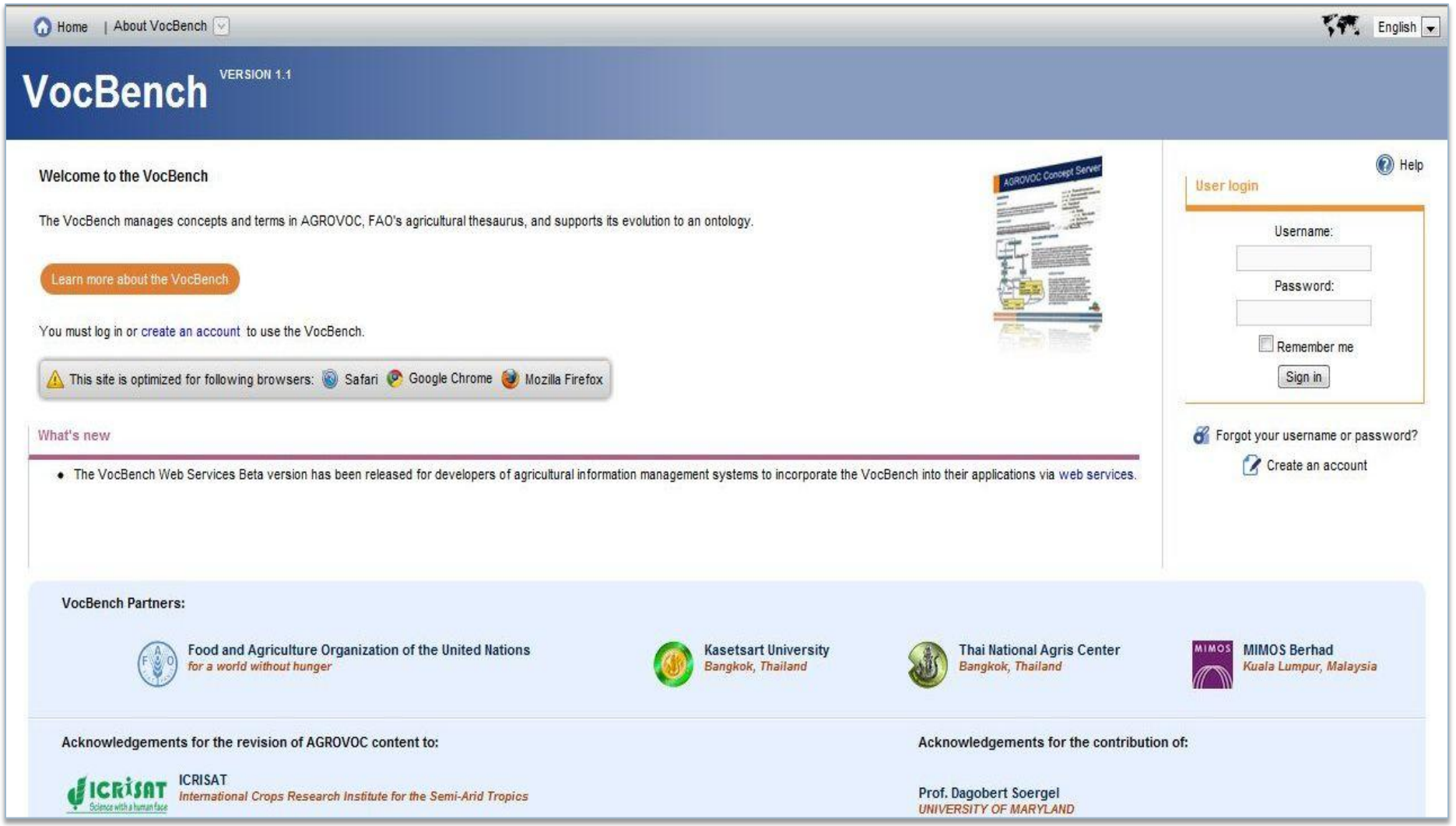
Il mais è una pianta erbacea annuale della famiglia delle Poaceae, tribù delle Maydeae. È uno dei più importanti cereali largamente co
temperate, in quest'ultimo caso a ciclo autunno primaverile. Il mais rappresenta la base alimentare tradizionale nelle popolazioni dell'A
dell'Europa e del Nordamerica.

Property	Value
dbpedia-owl:abstract	▪ Mais - in Österreich auch Kukuruz - (Zea mays) ist eine Pflanzenart aus der Familie der Sü einhäusige C4-Pflanze, nutzt also einen anderen Grundtypus der Photosynthese als beispie Weltwirtschaftlich bedeutend ist die kultivierte Unterart Zea mays subsp. mays, die als wi deuten darauf hin, dass sich diese Unterart vor allem von Zea mays subsp. parviglumis abl anderen Teosinte-Typen (eine Formengruppe innerhalb der Gattung Zea) zur heutigen For subsp. mexicana zum mexikanischen Hochlandmais. Es gibt ca. 5.000 verschiedene Maisso (direkt oder über Produkte der Maisstärke) und als Futter Herstellung von Biokraftstoffen und als Energiemais zu Ausgangsprodukt für Biokunststoffe, als Fermentatio von Ziermais. Mais enthält weniger für den Mensche ▪ Zea mays, comúnmente llamada maíz, choclo, millo Actualmente, es el cereal con mayor volumen de pr ▪ Maissi (Zea mays) on viljelykasvi, joka on alkujaan k kasvaa yleensä yli 2,5-metriseksi, mutta pituuteen kehittyneet kukinnot, joissa siemenet ovat tasaisiss teosintti-heinästä noin 8700 vuotta sitten Meksikos kasvien soluissa oleviin mineraalihiukkasiin, joiden pe tähkistä eikä teosintistä. Maissista on myöhemmin k kuuteen päätyyppiin, jotka ovat jauhomaissi, kivima muodoltaan muistuttavat ihmisen poskihampaita. So pienimuotoisesti viljellä sielläkin, missä kasvukausi o intiaanien viljelemä kasvi ja lienee tärkein elintarvike ▪ Il mais è una pianta erbacea annuale della famiglia tropicali sia in quelle temperate, in quest'ultimo cas dell'America latina e, localmente, in alcune regioni d animali domestici, sotto forma di granella, farine o a



VocBench

- VocBench is a Web-based, multilingual, vocabulary editing tool developed by FAO
- It transforms thesauri, authority lists and glossaries into SKOS/RDF concept schemes for use in a linked data environment
- VocBench is a tool that allows maintaining AGROVOC and to keep it growing
- To explore the VocBench functionalities, use the Sandbox. You can test editor functionalities by using the guest login


Home | About VocBench
English
VocBench
VERSION 1.1
Welcome to the VocBench
The VocBench manages concepts and terms in AGROVOC, FAO's agricultural thesaurus, and supports its evolution to an ontology.
Learn more about the VocBench
You must log in or create an account to use the VocBench.
This site is optimized for following browsers: Safari Google Chrome Mozilla Firefox
What's new
The VocBench Web Services Beta version has been released for developers of agricultural information management systems to incorporate the VocBench into their applications via web services.
AGROVOC Concept Server
Help
User login
Username:
Password:
Remember me
Sign in
Forgot your username or password?
Create an account
VocBench Partners:
Food and Agriculture Organization of the United Nations
for a world without hunger
Kasetsart University
Bangkok, Thailand
Thai National Agris Center
Bangkok, Thailand
MIMOS Berhad
Kuala Lumpur, Malaysia
Acknowledgements for the revision of AGROVOC content to:
ICRISAT
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Acknowledgements for the contribution of:
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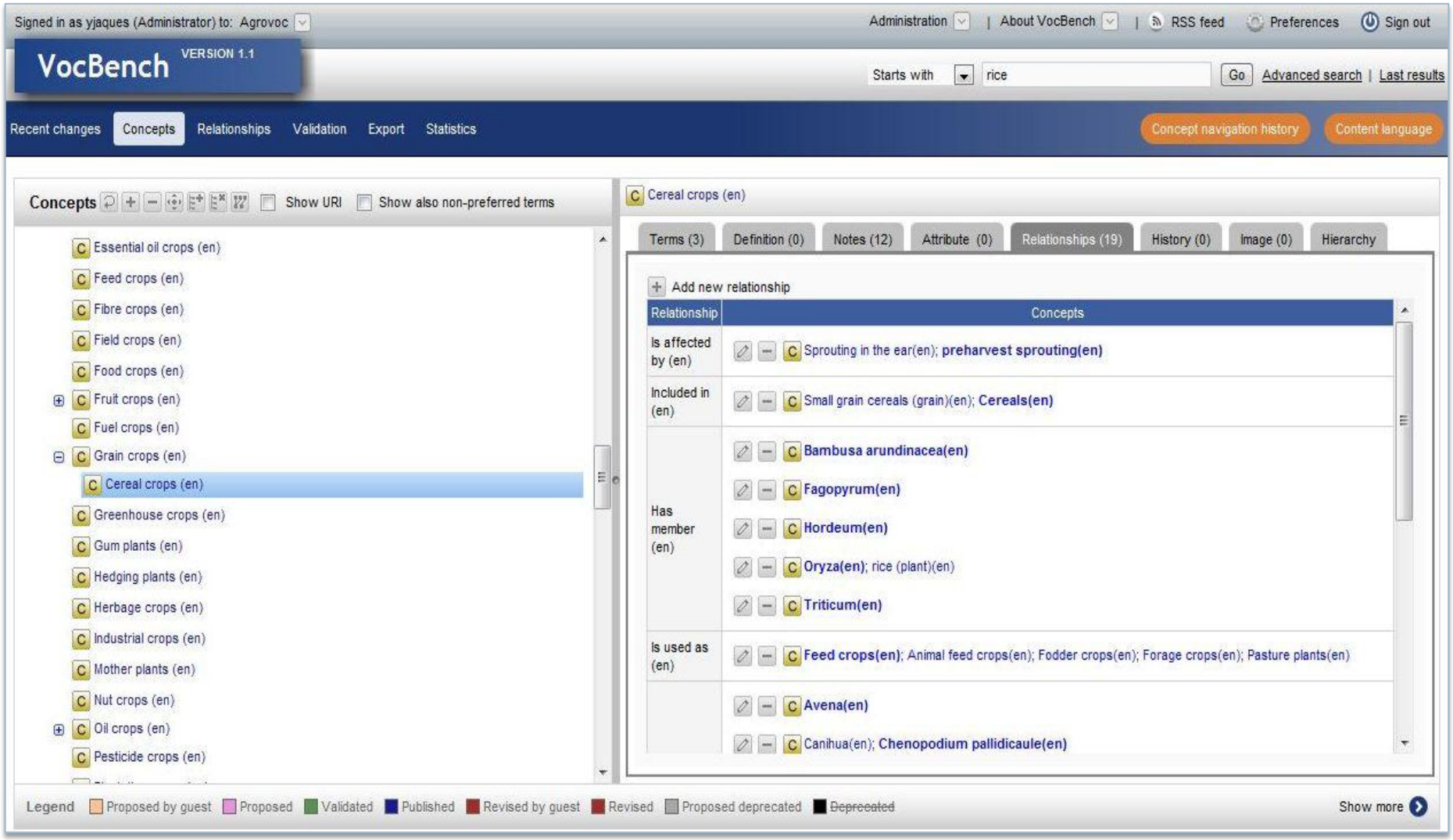
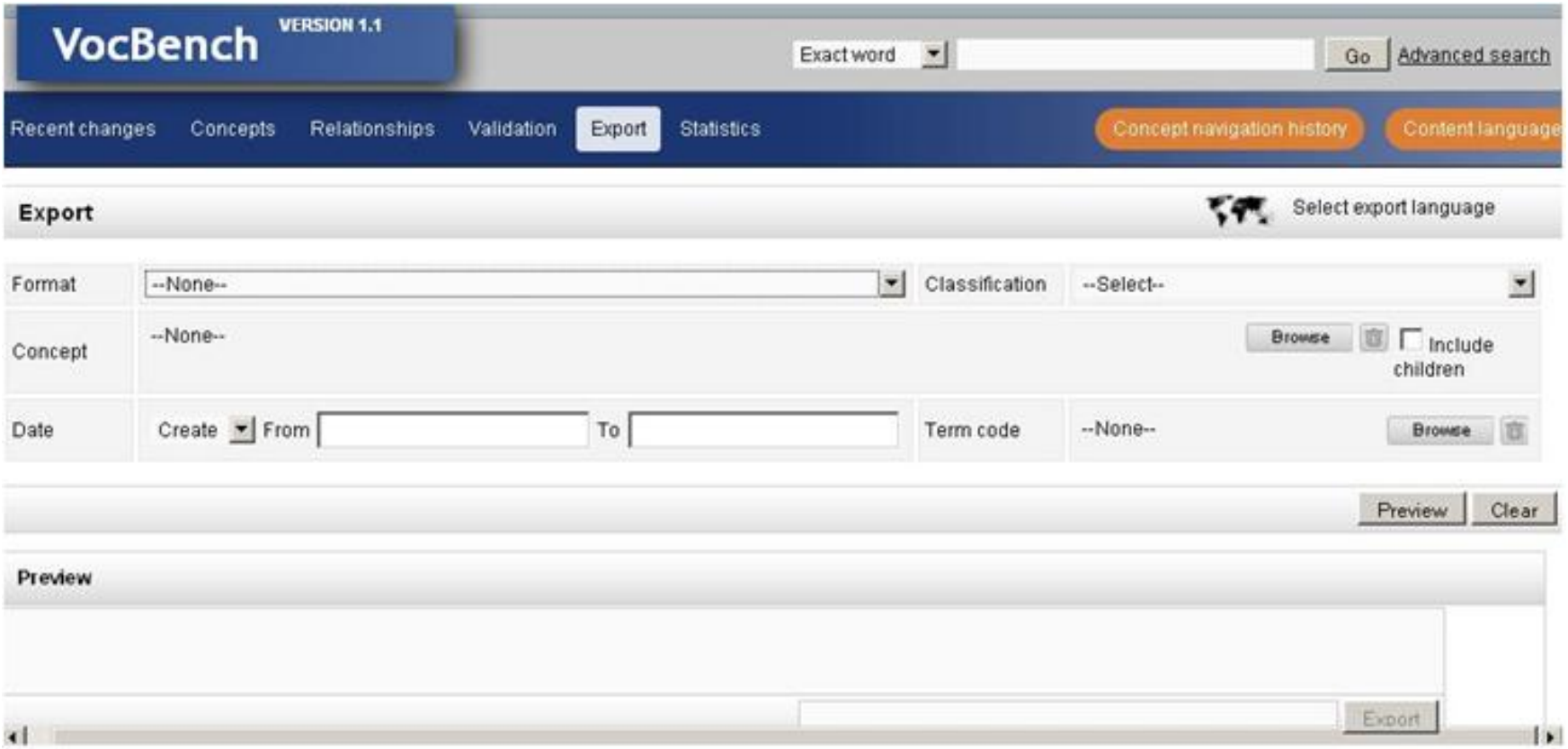
UNIVERSITY OF MARYLAND


Signed in as yjaques (Administrator) to: Agrovoc
Administration
About VocBench
RSS feed
Preferences
Sign out
VocBench
VERSION 1.1
Starts with
rice
Go
Advanced search
Last results
Recent changes
Concepts
Relationships
Validation
Export
Statistics
Concept navigation history
Content language
Concepts
Show URI
Show also non-preferred terms
Essential oil crops (en)
Feed crops (en)
Fibre crops (en)
Field crops (en)
Food crops (en)
Fruit crops (en)
Fuel crops (en)
Grain crops (en)
Cereal crops (en)
Greenhouse crops (en)
Gum plants (en)
Hedging plants (en)
Herbage crops (en)
Industrial crops (en)
Mother plants (en)
Nut crops (en)
Oil crops (en)
Pesticide crops (en)
Cereal crops (en)
Terms (3)
Definition (0)
Notes (12)
Attribute (0)
Relationships (19)
History (0)
Image (0)
Hierarchy
Add new relationship
Relationship
Concepts
Is affected by (en)
Sprouting in the ear(en); preharvest sprouting(en)
Included in (en)
Small grain cereals (grain)(en); Cereals(en)
Has member (en)
Bambusa arundinacea(en)
Fagopyrum(en)
Hordeum(en)
Oryza(en); rice (plant)(en)
Triticum(en)
Is used as (en)
Feed crops(en); Animal feed crops(en); Fodder crops(en); Forage crops(en); Pasture plants(en)
Avena(en)
Canihua(en); Chenopodium pallidicaule(en)
Legend
Proposed by guest
Proposed
Validated
Published
Revised by guest
Revised
Proposed deprecated
Deprecated
Show more


VocBench
VERSION 1.1
Exact word
Go
Advanced search
Recent changes
Concepts
Relationships
Validation
Export
Statistics
Concept navigation history
Content language
Export
Select export language
Format
--None--
Classification
--Select--
Concept
--None--
Browse
Include children
Date
Create
From
To
Term code
--None--
Browse
Preview
Clear
Preview
Export

References

- http://aims.fao.org/standards/agrovoc/about
- http://aims.fao.org/tools/vocbench-2
- http://aims.fao.org/aos/agrovoc/c_12332
- http://202.73.13.50:55481/vocbenchv1.3i/

AGROVOC Web-Services:

- http://agrovoc.mimos.my/ACSWWebservice/services/ACSWWebService
- http://agrovoc.mimos.my/ACSWWebserviceClient/sampleACSWWebServiceProxy/TestClient.jsp

Thank you very much for the attention!