

A unified Knowledge Graph based Approach to Exploring Scientific Text Corpora

Catherine Faron

UNIVERSITÉ
CÔTE D'AZUR 



Inria

séminaire HisI Num, Académie 5, 25/09/2024

Wheat Genomics Scientific Literature Knowledge Graph



Data to Knowledge in Agronomy and Biodiversity
2019-2024

ANR grant ANR-18-CE23-0017

<http://www.d2kab.org>

Researchers need help to make sense of scientific literature

NIH National Library of Medicine
National Center for Biotechnology Information

PublMed®

wheat genomics

Advanced Create alert Create RSS

Save Email Send to

Sort by: Best match

Page 1

15,620 results

3 articles found by citation matching

The genetic basis of wing spots in *Pieris canidia* butterflies.
Wee JLQ, et al. BMC Genomics. 2023. PMID: 37016295 [Free PMC article](#).

Quantitative RNA-Seq analysis in non-model species: assessing transcriptome assemblies as a scaffold and the utility of evolutionary divergent gene species.
Hornett EA, et al. BMC Genomics. 2012. PMID: 22853326 [Free PMC article](#).

Short read Illumina data for the de novo assembly of a non-model snail species transcriptome (*Radix balthica*, Basommatophora, Pulmonata), and a comparison of assembler performance.
Feldmeyer B, et al. BMC Genomics. 2011. PMID: 21679424 [Free PMC article](#).

Show all

Wheat genomics comes of age.
Uauy C.
Curr Opin Plant Biol. 2017 Apr;36:142-148. doi: 10.1016/j.pbi.2017.01.007. Epub 2017 Mar 24.
PMID: 28346895 [Free article](#). [Review](#).

Share

Advances in wheat genomics have lagged behind other major cereals (e.g., rice and maize) due to its

PublMed®

Log in

Advanced

Search

User Guide

Save Email Send to Display options

PublMed®

Advanced

Search

User Guide

Save Email Send to Display options

PublMed®

Advanced

Search

User Guide

Save Email Send to Display options

PublMed®

Advanced

Search

User Guide

Save Email Send to Display options

Tracking wheat leaf rust resistance genes in wheat.
James A Kolmer¹
Affiliations + expand
PMID: 15922652 [Free PMC article](#).

Abstract
Stripe rust resistance by a single dominant gene (Yr29) was identified in wheat (Triticum aestivum). Stripe rust caused by *Puccinia striiformis* f. sp. *tritici* (Triticum aestivum), wheat, and the results of a genetic analysis of the Yr29 gene in wheat. There was no cytological evidence of selection for virulence in wheat stripe rust, wheat stripe rust in different continents, and durable rust resistance genes available for use.

Complex relationship between DNA methylation and gene expression due to Lr28 in wheat-leaf rust pathosystem
Gautam Saripalli¹, Chanchal Sharma^{1,2}, Tinku Gautam¹, Kalpana Singh³, Neelu Jain⁴, Pramod Prasad⁵, J K Roy⁶, J B Sharma⁴, P K Sharma¹, K V Prabhu^{4,7}, H S Balyan^{1,3}, P K Gupta⁸
Affiliations + expand
PMID: 31873872 DOI: 10.1007/s11033-019-05236-1

Abstract
Differential DNA methylation due to Lr28 was examined in susceptible (S) wheat cv. HD2329 and its resistant (R) near isogenic line (NIL) (HD2329+Lr28) using two approaches: methylation sensitive amplified polymorphism (MSAP) and methylated DNA immunoprecipitation (MeDIP). S/R lines each had a large number of hypomethylated genes and relatively fewer hypermethylated genes at 96 hpi (hours after inoculation) relative to 0 hbi (hours before inoculation), suggesting activation of many genes during the passage of time (96 hpi), although identity of genes may differ in S and R lines. When R NIL was compared with S cultivar, there were many hypermethylated and fewer

FULL TEXT LINKS
SpringerLink
PDF FULL ARTICLE

ACTIONS
Cite
Collections

SHARE
Twitter Facebook LinkedIn

PAGE NAVIGATION
Title & authors
Abstract

> Mol Biol Rep. 2020 Feb;47(2):1339-1360. doi: 10.1007/s11033-019-05236-1. Epub 2019 Dec 23.

Complex relationship between DNA methylation and gene expression due to Lr28 in wheat-leaf rust pathosystem

Gautam Saripalli¹, Chanchal Sharma^{1 2}, Tinku Gautam¹, Kalpana Singh³, Neelu Jain⁴, Pramod Prasad⁵, J K Roy⁶, J B Sharma⁴, P K Sharma¹, K V Prabhu^{4 7}, H S Balyan^{1 3}, P K Gupta⁸

Affiliations + expand
PMID: 31873872 DOI: 10.1007/s11033-019-05236-1

Abstract

Differential DNA methylation in wheat leaf rust resistant (R) near isogenic line (NIL) (HD2329+Lr28) using two approaches: methylation sensitive amplified polymorphism (MSAP) and methylated DNA immunoprecipitation (MeDIP) (...). The results of the present study improved our understanding of the epigenetic control of leaf rust resistance in wheat.

When R NIL was compared with S cultivar, there were many hypermethylated and fewer hypomethylated genes in R NIL relative to S cultivar, suggesting that many genes that are active in S cultivar are silenced in R NIL, both at 0 hpi and at 96 hpi. Level of methylation was generally abundant

FULL TEXT LINKS



ACTIONS

“ Cite

📖 Collections

Gene

Differential DNA methylation due to Lr28 was examined in susceptible (S) wheat cv. HD2329 and its resistant (R) near isogenic line (NIL) (HD2329+Lr28) using two approaches: methylation sensitive amplified polymorphism (MSAP) and methylated DNA immunoprecipitation (MeDIP) (...). The results of the present study improved our understanding of the epigenetic control of leaf rust resistance in wheat.

Trait

Taxon

Similar articles

> Mol Biol Rep. 2020 Feb;47(2):1339-1360. doi: 10.1007/s11033-019-05236-1. Epub 2019 Dec 23.

Complex relationship between DNA methylation and gene expression due to Lr28 in wheat-leaf rust pathosystem

Gautam Saripalli¹, Chanchal Sharma^{1 2}, Tinku Gautam¹, Kalpana Singh³, Neelu Jain⁴, Pramod Prasad⁵, J K Roy⁶, J B Sharma⁴, P K Sharma¹, K V Prabhu^{4 7}, H S Balyan^{1 3}, P K Gupta⁸

Affiliations + expand
PMID: 31873872 DOI: 10.1007/s11033-019-05236-1

Abstract

Differential DNA methylation in resistant (R) near isogenic line (NIL) (HD2329+Lr28) using two approaches: methylation sensitive amplified polymorphism (MSAP) and methylated DNA immunoprecipitation (MeDIP) (...). The results of the present study improved our understanding of the epigenetic control of leaf rust resistance in wheat.

When R NIL was compared with S cultivar, there were many hypermethylated and fewer hypomethylated genes in R NIL relative to S cultivar, suggesting that many genes that are active in S cultivar are silenced in R NIL, both at 0 hpi and at 96 hpi. Level of methylation was generally abundant at

FULL TEXT LINKS



ACTIONS

Cite

Collections

Extracting & Linking Named Entities

Differential DNA methylation due to **Lr28** was examined in susceptible (S) wheat cv. **HD2329** and its resistant (R) near isogenic line (NIL) (**HD2329+Lr28**) using two approaches: methylation sensitive amplified polymorphism (MSAP) and methylated DNA immunoprecipitation (MeDIP) (...). The results of the present study improved our understanding of the epigenetic control of **leaf rust resistance** in **wheat**.

Gene

Trait

Taxon

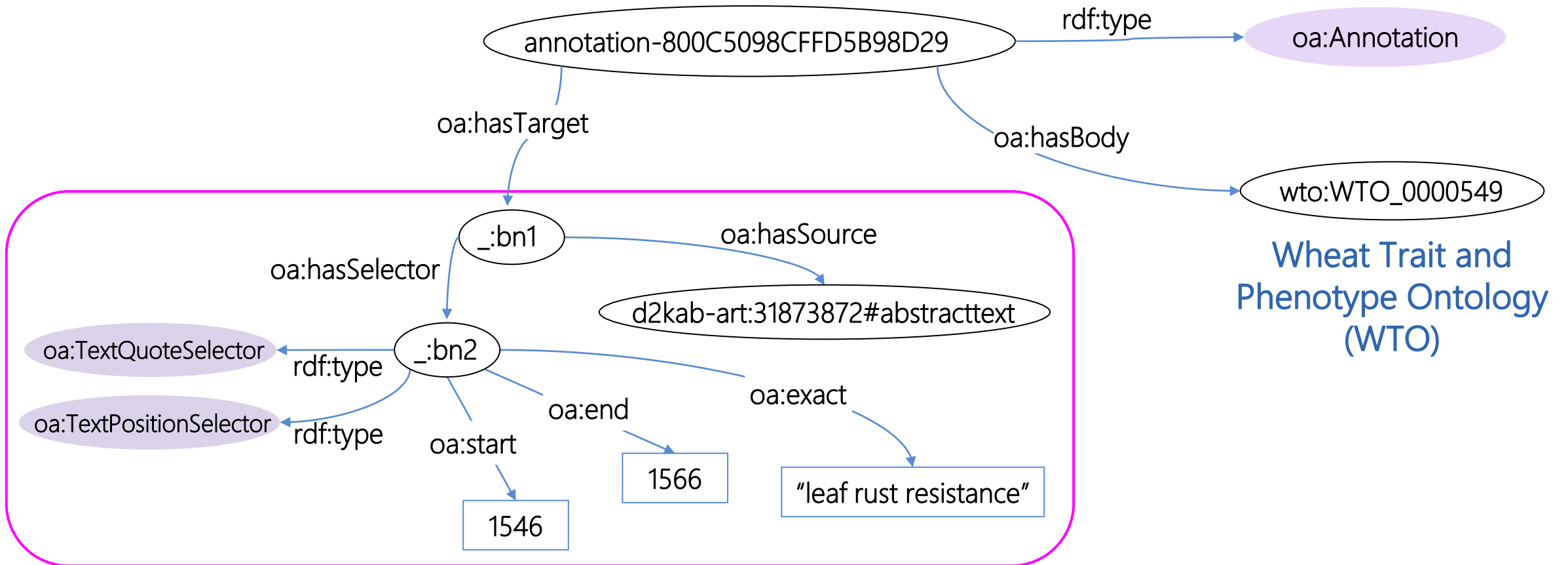
Wheat Trait and Phenotype Ontology (WTO)



Modeling mentions of terms as annotations

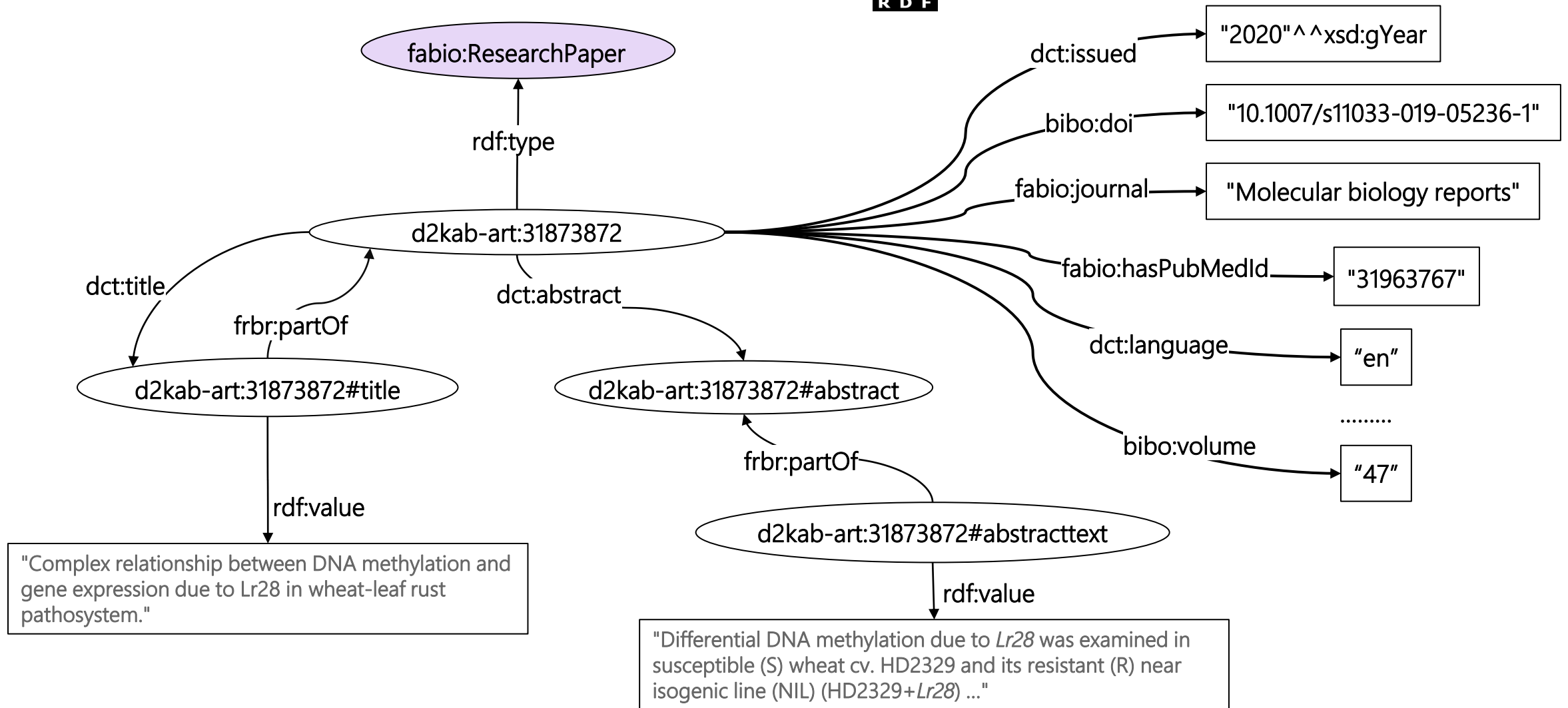


Web Annotations Ontology **W3C**



Wheat Trait and Phenotype Ontology (WTO)

Modeling articles metadata



WheatGenomicsSLKG statistics

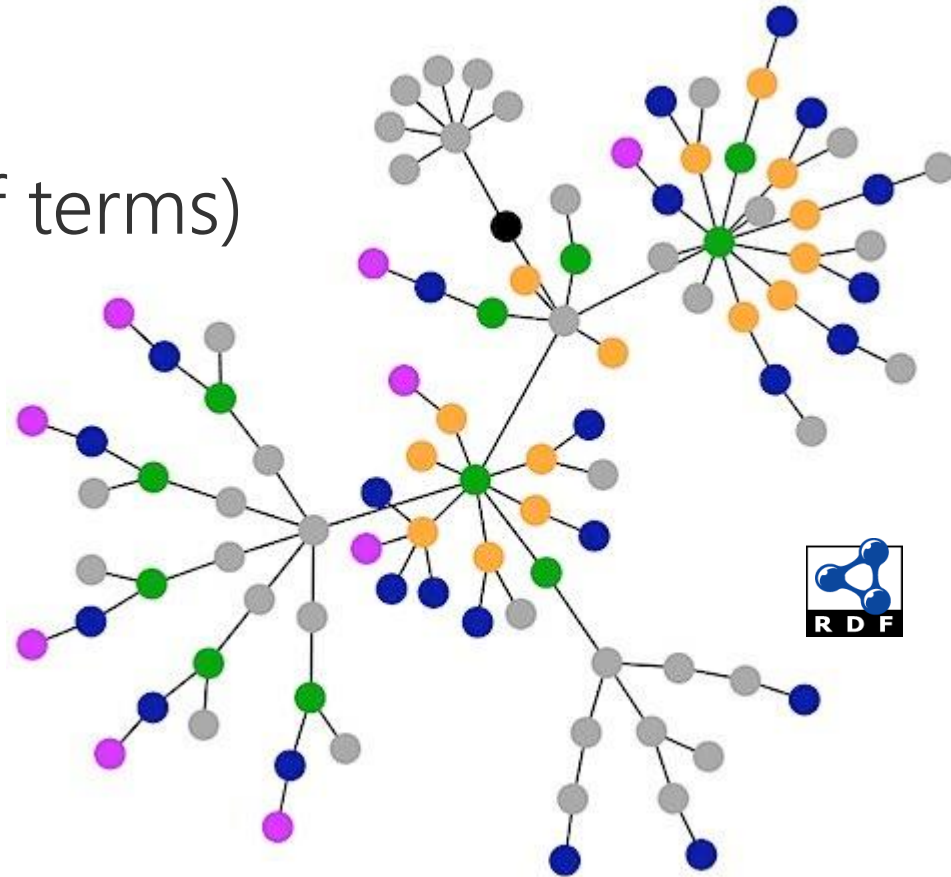
1,191,867 triples

8,496 scientific articles

88,880 annotations (mentions of terms)

4,319 unique entities:

- 2463 taxa
- 98 traits
- 77 varieties
- 1160 genes
- 521 genetic markers





Search articles by named entities

rust resistance ×Lr34 ×

Results for only the selected named entities

Development of multiplex PCR to detect slow rust resistance genes Lr34 and Lr46 in v

QTL for spot blotch resistance in bread wheat line Saar co-locate to the biotrophic dis
Theoretical and applied genetics. Theoretische und angewandte Genetik.

The Lr34 adult plant rust resistance gene provides seedling resistance in durum whea

Postulation of rust resistance genes in Nordic spring wheat genotypes and identificati
Bariana H, Lillemo M [...]. 2016. *Journal of applied genetics.*

Gene expression patterns in near isogenic lines for wheat rust resistance gene Lr34/yr

Results for the selected named entities or their sub-entities

resistance to Stem rust Lr34

Leaf rust resistance gene Lr34 associated with nonsuppression of stem rust resistance

resistance to Stripe rust Lr34

New slow-rusting leaf rust and stripe rust resistance genes Lr67 and Yr46 in wheat ar
[...]. 2011. *TAG. Theoretical and applied genetics. Theoretische und angewandte Ge*



Development of multiplex PCR to detect slow rust resistance genes Lr34 and Lr46 in wheat.

Kwiatek M, Nawracała J, Skowrońska R, Tomkowiak A. 2019. Development of multiplex PCR to detect slow rust resistance genes Lr34 and Lr46 in wheat.. *Journal of applied genetics.*

Language: eng

[Read the article](#)

Abstract

Leaf rust caused by *Puccinia triticina* belongs to one of the most dangerous fungal diseases of wheat (*Triticum aestivum* L.) and is the cause of large yield losses every year. Here we report a multiplex polymerase chain reaction (PCR) assay, which was developed for detection of two important wheat slow rust resistance genes Lr34 and Lr46, using two molecular markers: csLV34 and Xwmc44, respectively. The presence of genes was analyzed in one winter wheat variety TX89D6435 and five spring wheat varieties: Pavon F76, Parula 'S', Rayon 89, Kern, Mochis 88. Both Lr34 and Lr46 genes were identified in variety TX89D6435, gene Lr34 was also identified in Parula 'S' and Kern varieties, and gene L46 occurs in Pavon F76 and Mochis 88 variety. None of the resistance genes tested was detected in the Rayon 89 variety. The use of the multiplex PCR method allowed to shorten the analysis time, reduce costs of analyses, and reduce the workload.

Linked Data Explorer

Query name:

[Wimmics team](#) Inria, I3S, UCA, CNRS.

Initial Query

SPARQL Endpoint *

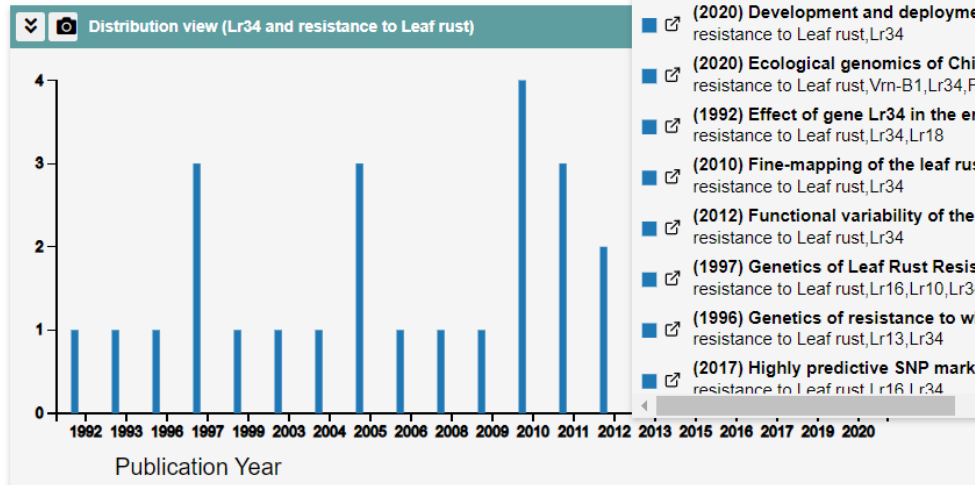
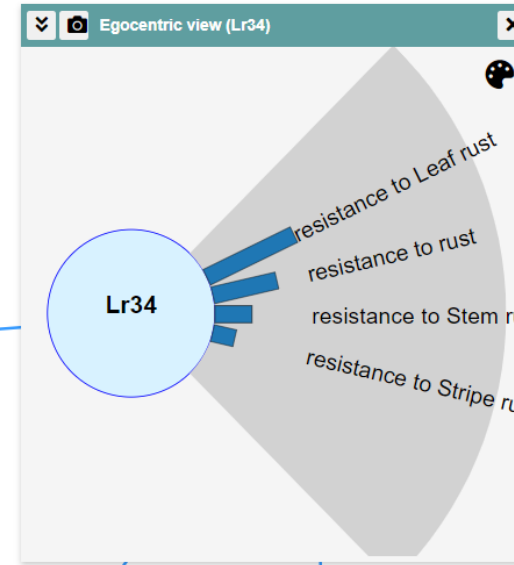
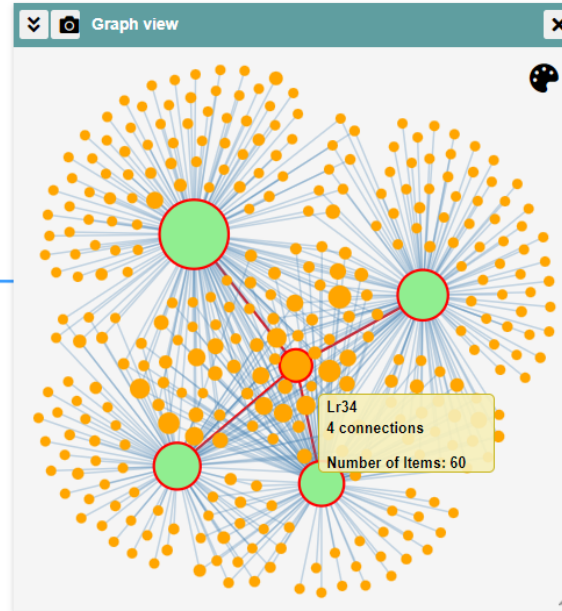
Query *

Concept 1

Use Stylesheet

History

- Initial Query
- Graph view
- Egocentric view (Lr34)
- Distribution view (Lr34 and resistance to Leaf rust)
- Listing view (Lr34 and resistance to Leaf rust)



Listing view (Lr34 and resistance to Leaf rust)

- [\(2011\) A multiple resistance locus on chromosome arm 3BS in wheat... resistance to Leaf rust, Sr2, Lr27, resistance to Stem rust, Lr34](#)
- [\(2020\) Development and deployment of KASP markers for multiple alleles... resistance to Leaf rust, Lr34](#)
- [\(2020\) Ecological genomics of Chinese wheat improvement: implicatio... resistance to Leaf rust, Vrn-B1, Lr34, Ppd-D1, Glu-B1](#)
- [\(1992\) Effect of gene Lr34 in the enhancement of resistance to leaf rust... resistance to Leaf rust, Lr34, Lr18](#)
- [\(2010\) Fine-mapping of the leaf rust Lr34 locus in Triticum aestivum \(L.\)... resistance to Leaf rust, Lr34](#)
- [\(2012\) Functional variability of the Lr34 durable resistance gene in tran... resistance to Leaf rust, Lr34](#)
- [\(1997\) Genetics of Leaf Rust Resistance in Canadian Spring Wheats AC... resistance to Leaf rust, Lr16, Lr10, Lr34, Lr12, Lr13, LrTb](#)
- [\(1996\) Genetics of resistance to wheat leaf rust. resistance to Leaf rust, Lr13, Lr34](#)
- [\(2017\) Highly predictive SNP markers for efficient selection of the whea... resistance to Leaf rust Lr16 Lr34](#)

WheatGenomicsSLKG



Dataset (RDF dump)	10.5281/zenodo.10410742
SPARQL endpoint	http://d2kab.i3s.unice.fr/sparql
Documentation	https://github.com/Wimmics/WheatGenomicsSLKG
URIs namespace	http://ns.inria.fr/d2kab/
Web interfaces	http://d2kab.i3s.unice.fr/wheatgenomics/search https://dataviz.i3s.unice.fr/mgexplorer/dashboard with SPARQL endpoint http://d2kab.i3s.unice.fr/sparql
Publications	<p>Yacoubi Ayadi N., Faron C., Michel F., Bossy R., Barbe A. Construction d'un graphe de connaissances à partir des annotations d'articles scientifiques et de leur contenu en sciences de la vie. <i>IC 2022 - PFIA 2022</i>. hal-03889968</p> <p>Yacoubi Ayadi N., Bernard S., Bossy R., Courtin M., Happi Happi B.G., Larmande P., Michel F., Nédellec C., Roussey C., Faron C. A unified approach to publish semantic annotations of agricultural documents as knowledge graphs. <i>Smart Agricultural Technology</i> , vol 8, 2024</p>

Semantic Indexing of a Scientific Archive in Agriculture

 **SSA 2**



Projet Lauréat

CollEx-Persée

<https://issa.cirad.fr/>

Slides from Franck Michel

Researchers need help to explore the Cirad open publication archive

Agritrop, the Cirad open archive

+120 000 bibliographical references including +42 000 in open access; +33 000 articles including +16 in open access

A manual indexation by specialized documentalists until the end of 2023

A reference thesaurus for indexing in Agritrop : Agrovoc (thematic and geographic descriptors)



Host plants associated with *Diatraea tabernella* Dyar (Lepidoptera: Crambidae) in sugarcane in Panama

Atencio Valdespino Randy, Goebel François-Régis, Murillo Vielka. 2018. Host plants associated with *Diatraea tabernella* Dyar (Lepidoptera: Crambidae) in sugarcane in Panama. *International Sugar Journal*, **120** (1438) : 786-791. <https://internationalsugarjournal.com/paper/host-plants-associated-with-diatraea-tabernella-dyar-lepidoptera-crambidae-in-sugarcane-in-panama/>

Article de revue ; Article de recherche

Version publiée - Anglais
Accès réservé aux agents Cirad
Utilisation soumise à autorisation de l'auteur ou du Cirad.
ISJ_Oct18_Goebel_Atencio.pdf
[Télécharger \(273kB\)](#) | [Demander une copie](#)

Résumé : Within the genus *Diatraea*, studies of alternate host plants were mainly conducted on *Diatraea saccharalis* (Fab.). Such information doesn't exist for *Diatraea tabernella* Dyar. Therefore, the objective of this study was to determine the alternative host plants of *D. tabernella* in sugarcane plantations in Panama. From January 2016 to February 2017, a general inventory of alternate host plants was conducted in the sugarcane field and then plants were sampled among the most frequent 9 species found (Poaceae (8) and Cyperaceae (1)) in four areas the sugarcane field (near water source (Z1), within field

(Z2), near mangrove (Z3) and field edge (Z4)). The species with the highest % borer infestation during the sugarcane growth period were *Sorghum halepense* (L.) Pers. (7.2%), *Echinochloa colonom* (L.) Link (6.4%) and *Eleusine indica* (L.) Gaertn. (5.8%). During the sugarcane harvest the species with the highest percentage of infested stems were *Eleusine indica* (L.) Gaertn. (21.6%), *Dactyloctenium aegyptium* (L.) Beauv. (17.1%) and *Cenchrus echinatus* (L.) (9.2%). On these host plants, species control measures may be applied to reduce stemborer populations.

Mots-clés Agrovoc : Canne à sucre, Ravageur des plantes, Lutte antiravageur, Désherbage, Croissance

Mots-clés géographiques Agrovoc : Panama

Mots-clés complémentaires : *Diatraea tabernella*

Mots-clés libres : HOST PLANTS, STALK BORERS, SUGARCANE, Integrated Pest Management, Weed management

Classification Agris : H10 - Ravageurs des plantes

H60 - Mauvaises herbes et désherbage

F62 - Physiologie végétale : croissance et développement

Auteurs et affiliations

- Atencio Valdespino Randy, CIRAD-PERSYST-UPR AIDA (FRA) - *auteur correspondant*
- Goebel François-Régis, CIRAD-PERSYST-UPR AIDA (FRA)
- Murillo Vielka, Universidad de Panama (PAN)

Source : Cirad-Agritrop (<https://agritrop.cirad.fr/591124/>)

Indexation manuelle



This interface developed by the [ISSA](#) project demonstrates the enriched visualization of [Agritrop](#) documents.

Agritrop

Open Repository
of
CIRAD publications

[Document Search](#)

Search documents

Agrovoc descriptors

Wikidata named entites

Enter text and select a suggestion

Search

climate change x

Results matching only the selected descriptors

1929 result(s).

≤ 1 2 3 4 5 ... 242 ≥

La transition agro-écologique des agricultures du Sud. Côte, François-Xavier (ed.), Perret, Sylvain (ed.), Poirier-Magona, Emmanuelle (ed.) [...]. 2018.



Climate, cattle rearing systems and African animal trypanosomosis risk in Burkina Faso. Akoudjin, Massouroudini, Belem, Adrien Marie Gaston, Bengaly, Zakaria [...]. 2012. *PLoS One*.



Perception paysanne des perturbations pluviométriques et stratégies d'adaptation dans les systèmes de culture à sorgho repiqué en zone soudano-sahélienne du Cameroun. Fokou Yemata, Oberline, Madi, Ali, Oumarou, Yakouba [...]. 2017. *Afrique Science*.



Agroforestry rubber networks and farmers groups in Phatthalung area in Southern Thailand. A potential for an innovation platform?. Chambon, Bénédicte, Michel, Isabelle, Penot, Eric [...]. 2022. *Forest and Society*.



Concept search

- Descripteurs ou Entités nommées
- Multi-langue, synonymes

Concept search

- Descripteurs ou Entités nommées
- Multi-langue, synonymes
- Hiérarchie (termes plus spécifiques)

AGROVOC Multilingual Thesaurus

Content language English Search

Alphabetical Hierarchy Groups

air-water exchanges
atmospheric circulation
atmospheric forcing
atmospheric formations
atmospheric optical phenomena
carbon sinks
climate
climate change
anthropogenic climate change
global warming
climate variability
cycling
darkness
deglaciation
ecological succession
ecosystem disturbance
El Niño
environmental degradation
environmental impact
fire causes
forest fragmentation
geological processes
greenhouse effect

phenomena > natural phenomena >
climate change

PREFERRED TERM

climate change

DEFINITION

As alterações climáticas são mudanças do clima que ocorrem a nível global. Segundo o "Painel Intergovernamental sobre Mudanças Climáticas" (IPCC, 2001) as alterações climáticas

BROADER CONCEPT

NARROWER CONCEPTS

anthropogenic climate change (en)
global warming (en)

RELATED CONCEPTS

climate change adaptation (en)
climate change impacts (en)



This interface developed by the [ISSA](#) project demonstrates the enriched visualization of [Agritrop](#) documents.

Agritrop

Open Repository
of
CIRAD publications

[Document Search](#)

Search documents

Agrovoc descriptors

Wikidata named entites

Enter text and select a suggestion

Search

climate change x

Results matching only the selected descriptors

1929 result(s).

≤ 1 2 3 4 5 ... 242 ≥

La transition agro-écologique des agricultures du Sud. Côte, François-Xavier (ed.), Perret, Sylvain (ed.), Poirier-Magona, Emmanuelle (ed.) [...]. 2018

Climate, ca
Bengaly, Z
Perception
sahélienne
Agroforest
Bénédicte,

Results matching the selected descriptors or any more specific descriptors

4 result(s).

≤ 1 ≥

[global warming](#)

The interactive effect of temperature and fertilizer types determines the dominant microbes in nitrous oxide emissions and the dicyandiamide efficacy in a vegetable soil. Di, Hongjie, Herrmann, Laetitia, Lesueur, Didier [...]. 2024. *Soil Ecology Letters*.



[global warming](#)

Lowering N2O emissions from soils using eucalypt biochar: the importance of redox reactions. Cowie, Annette, Donne, Scott, Husson, Olivier [...]. 2015. *Scientific Reports*.



[global warming](#)

Unravelling life cycle impacts of coffee: Why do results differ so much among studies?. Acosta Alba, Ivonne, Azapagic, A., Boissy, Joachim [...]. 2024. *Sustainable Production and Consumption*.



[global warming](#)

La dinámica de la expansión mundial de la quínoa. Bazile, Didier. 2015. *Tierra Adentro*.



Concept search

- Descripteurs ou Entités nommées
- Multi-langue, synonymes
- Hiérarchie (termes plus spécifiques)

AGROVOC Multilingual Thesaurus

Content language English Search

Alphabetical Hierarchy Groups

air-water exchanges
atmospheric circulation
atmospheric forcing
atmospheric formations
atmospheric optical phenomena
carbon sinks
climate
climate change
anthropogenic climate change
global warming
climate variability
cycling
darkness
deglaciation
ecological succession
ecosystem disturbance
El Niño
environmental degradation
environmental impact
fire causes
forest fragmentation
geological processes
greenhouse effect

phenomena > natural phenomena >
climate change

PREFERRED TERM

climate change

DEFINITION

As alterações climáticas são mudanças do clima que ocorrem a nível global. Segundo o "Painel Intergovernamental sobre Mudanças Climáticas" (IPCC, 2001) as alterações climáticas natural phenomena (en)

BROADER CONCEPT

NARROWER CONCEPTS

anthropogenic climate change (en)
global warming (en)

RELATED CONCEPTS

climate change adaptation (en)
climate change impacts (en)



This interface developed by the ISSA project demonstrates the enriched visualization of Agritrop documents.

Agritrop

Open Repository of CIRAD publications

[Document Search](#)

Search documents

Agrovoc descriptors

Wikidata named entites

Enter text and select a suggestion

Search

climate change x

Results matching only the selected descriptors

1929 result(s).

≤ 1 2 3 4 5 ... 242 ≥

La transition agro-écologique des agricultures du Sud. Côte, François-Xavier (ed.), Perret, Sylvain (ed.), Poirier-Magona, Emmanuelle (ed.) [...]. 2018

Climate, ca
Bengaly, Z
Perception sahélienne
Agroforest
Bénédicte,

Results matching the selected descriptors or any more specific descriptors

4 result(s).

≤ 1 ≥

globe
The i
in a
globe
Lowe
[...]
globe
Unra
[...]
globe
La di

Results matching descriptors related to those selected

51 result(s).

≤ 1 2 3 4 5 6 7 ≥

[climate proofing](#)

Special issue on 'Some preliminary results of the PROCAMED project (Promotion of innovations in the camel sector for a sustainable development in The Mediterranean basin)'. Faye, Bernard. 2015. *Emirates Journal of Food and Agriculture*.



[climate change adaptation](#)

Effects of vitamin E and vitamin C on hydrogenp Peroxide-induced hemolysis in moroccan dromedary camels (Camelus Dromedarius). Abouhafs, Rachid, Bargaa, Rita, Chakir, Youssef [...]. 2013. *Greener Journal of Medical Science*.



[climate change adaptation](#)

Projecting and valuing domestic water use at regional scale: A generic method applied to the Mediterranean at the 2060 horizon. Dumas, Patrice, Neverre, Noémie. 2015. *Water Resources and Economics*.



[climate change adaptation](#)

Genomic signatures of adaptation to Sahelian and Soudanian climates in sorghum landraces of Senegal. Cissé, Ndiaga, Faye, Jacques, Foncéka, Daniel [...]. 2019. *Ecology and Evolution*.



[climate change mitigation](#)

Institutional analysis of actors involved in the governance of innovative contracts for agri-environmental and climate schemes. Barghusen, Rena, Bredemeier, Birte, Dutilly, Céline [...]. 2023. *Global Environmental Change*.



Enriched visualisation of Agritrop records

- Charte graphique d'Agritrop
- Métadonnées
- Entités nommées du résumé
- Descripteurs thématiques et géographiques (documentalistes et calculés)
- Entités nommées géographiques



This interface developed by the ISSA project demonstrates the enriched visualization of Agritrop articles.

Agritrop

Open Repository of CIRAD publications

Oil palm cultivation in the Americas: review of the social, economic and environmental conditions of its expansion

Cifuentes-Espinosa Jaime Andrés, Feintrenie Laurene, Lesage Colombine. 2021. Oil palm cultivation in the Americas: review of the social, economic and environmental conditions of its expansion. *Cahiers Agricultures*.

<http://agritrop.cirad.fr/598930/>



Language: English

Licence: <https://creativecommons.org/licenses/by-nc/4.0/>

Download

Abstract

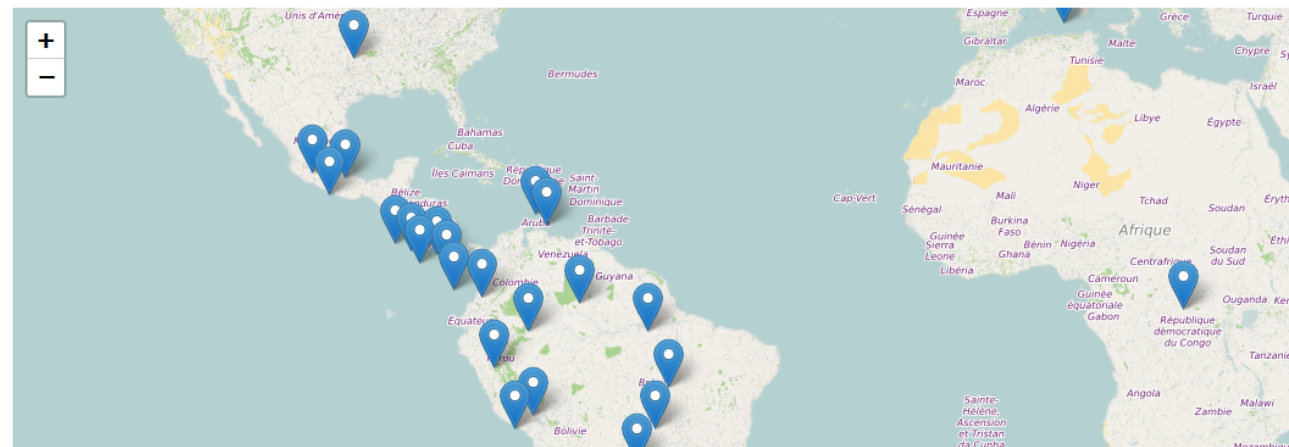
In the Americas, the palm oil sector has been gaining importance in the last 20 years. Although in 2018 the region only accounted for 7.1% of global palm oil production, it is one of the largest suitable areas for oil palm cultivation. We conducted a literature review on how the sector developed and how its development influenced private and public actors in their units. We grouped cases reported in the literature in three categories of arrangements between oil palm growers and palm oil extraction units. We grouped cases reported in the literature in three categories emerged in response to the call for better income in the value chain, and for sustainable production; they now represent almost 30% of production in the region. All the actors are pushing for partnerships with growers' organizations. National governments intend to regulate the production, and private companies are engaging in certification schemes. However, there are still many challenges. Thus, it appears to be on the way to being leaders of sustainability in the palm oil sector, challenges remain.

Hide named entities

Agrovoc descriptors

land use
palm oils oil palms deforestation land use agroecology Elaeis guineensis Caribbean Central America Latin America South America Brazil Colombia sustainable agriculture environmental impact degradation socioeconomic development

Geographic named entities extracted from the text



Geographical search

Le référentiel contient des termes géographiques

Agrovoc descriptors
 Wikidata named entites

Enter text and select a suggestion

West Africa × food_policies ×

Results matching the selected descriptors or any more specific descriptors

29 result(s).

- [Benin](#) [food_policies](#)
 Organisation alimentaire urbaine, l'approvisionnement de Cotonou en produits vivriers. Bricas, Nicolas, Cerdan, Claire, Muchnik, José. 1995. *Cahiers de la Recherche-Développement*.
- [Côte d'Ivoire](#) [Togo](#) [Burkina Faso](#) [food_policies](#)
 Quelles actions politiques pour renforcer l'accès des producteurs agricoles à des engrais chimiques à prix réduits au Burkina Faso. Rapport d'analyse de politique. . 2018.

Agrovoc descriptors
 Wikidata named entites

Enter text and select a suggestion

organic farming × Southeast Asia ×

Results matching the selected descriptors or any more specific descriptors

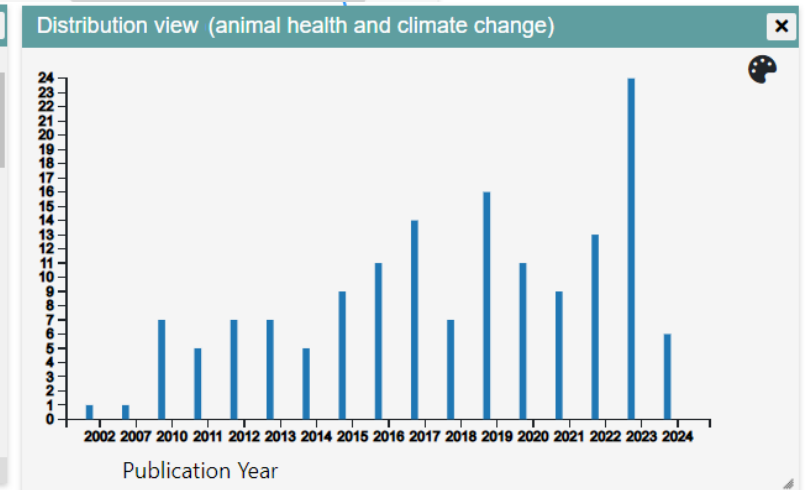
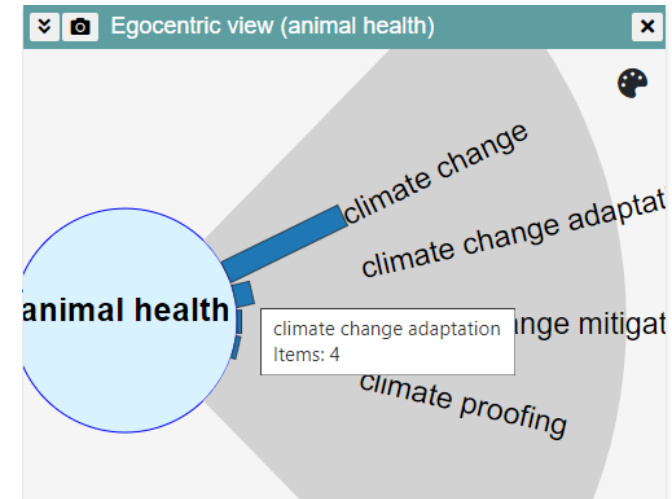
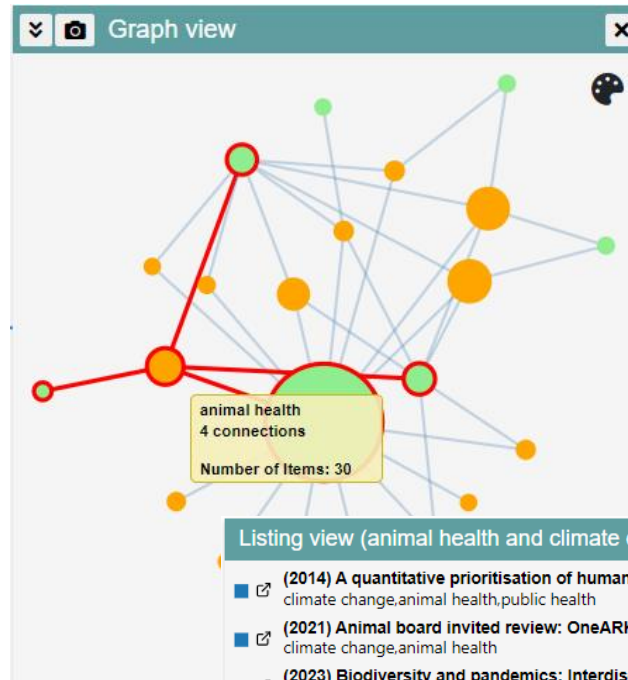
6 result(s).

- [organic agriculture](#) [Thailand](#)
 Small-scale farmers' assessment of constraints and benefits from getting involved in various organic certification schemes for the domestic market in Thailand. Faysse, Nicolas, Phiboon, Kassirin. 2019. *NIDA Development Journal*.
- [organic agriculture](#) [Indonesia](#) [Vietnam](#)
 En quoi l'agroforesterie peut-elle contribuer à la révolution doublement verte ?. Griffon, Michel, Mallet, Bernard. 1999. *Bois et Forêts des Tropiques*.
- [organic agriculture](#) [Vietnam](#)
 Les SPG dans l'agriculture bio : une réappropriation des communs. Lemeilleur, Sylvaine. 2020. *Nature et Progrès*.
- [organic agriculture](#) [Cambodia](#)
 Effect of short-term conservation agriculture on soil organic C and N in lowland rice agroecosystem in Cambodia. Boulakia, Stéphane, Fujii, Yoshiharu, Kimura, Sonoko D. B. [...]. 2018.
- [organic agriculture](#) [Cambodia](#)
 Can organic rice certification curb the pressure of the agrarian transition in Cambodia? A farming system approach. Castella, Jean-Christophe, Dayet, Alexia, Demenois, Julien [...]. 2024. *Agricultural Systems*.

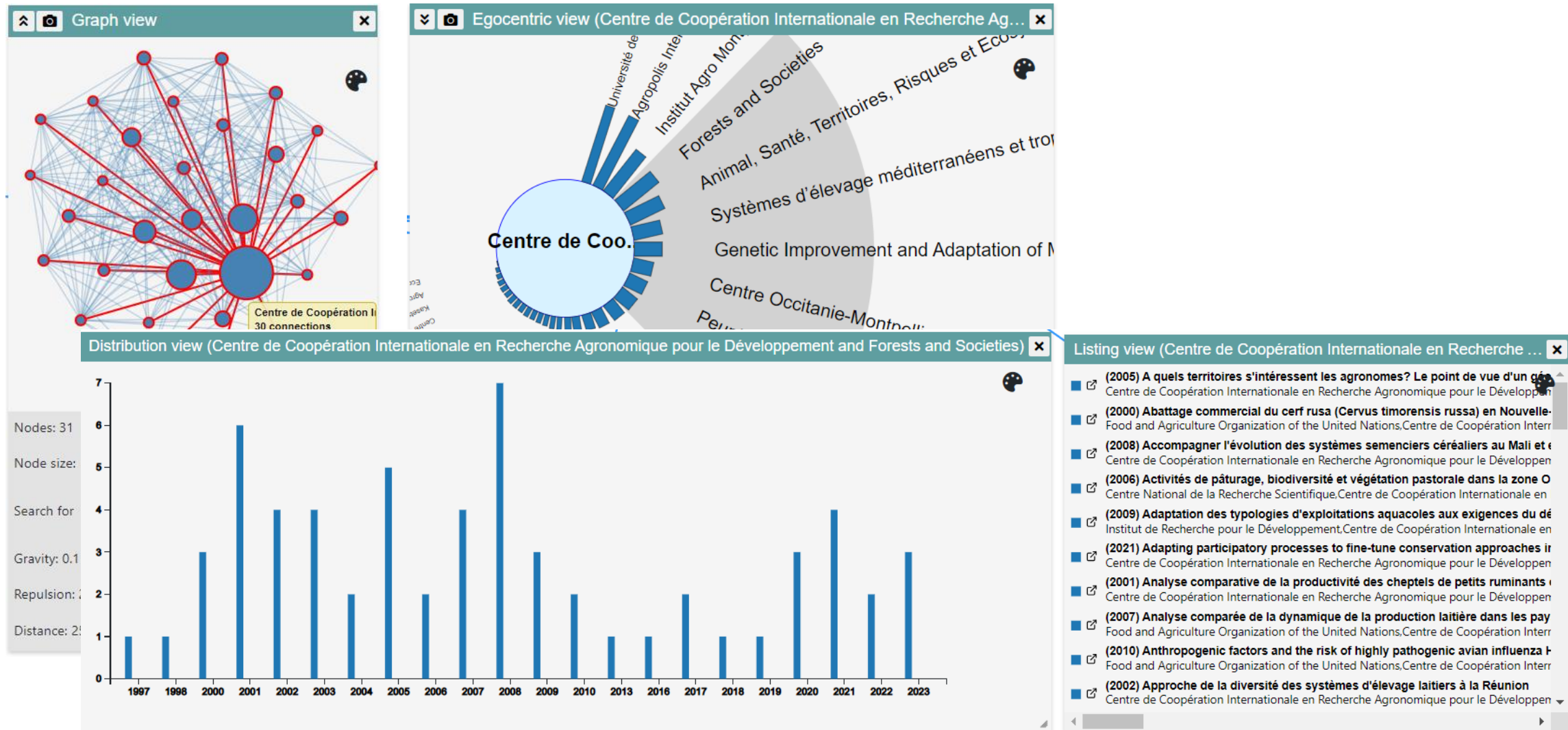
Archive exploration: articles on climate change and health ?

climate change
anthropogenic climate change
global warming

health
animal health
ecosystem health
forest health
human health
mental health
plant health
public health
rangeland health
reproductive health
seed health



Archive exploration: collaborations with other institutions



Archive exploration: temporal distribution of publications

Sustainable development goals (SDG) in OpenAlex

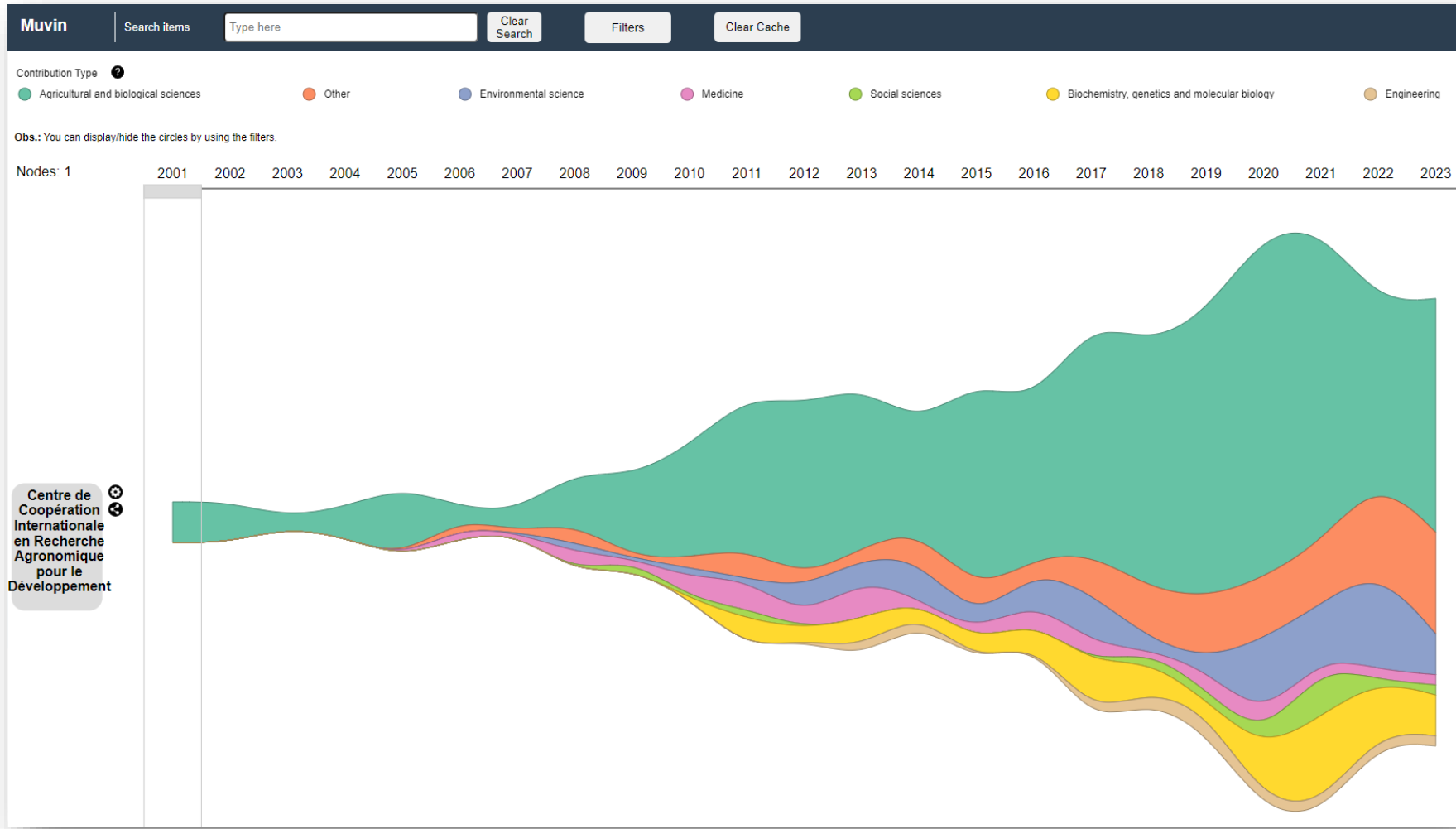
institutes



Archive exploration: temporal distribution of publications

Scientific field)
in OpenAlex

institutes



Semantic Indexing of a Scientific Archive in Agriculture



<http://issa.i3s.unice.fr/search/>

<https://dataviz.i3s.unice.fr/mgexplorer/dashboard> with SPARQL endpoint <https://data-issa.cirad.fr/sparql>

Toulet A., Michel F., Bobasheva A., Menin A., Dupré S. ISSA : un graphe de connaissances au service de la recherche bibliographique, EGC 2023

The background is a faded, classical-style illustration of Noah's Ark. On the left, Noah, an elderly man with a long white beard and a halo, stands in a green robe over a red tunic, gesturing towards the animals. A woman in a yellow dress stands beside him. The ark is filled with various animals, including a large grey elephant, a brown lion, a white swan, and a brown horse. The scene is set within a wooden structure with a ramp leading to the entrance.

Construction and Exploration of the Knowledge Graph Annotating the Zoomathia Text Corpus

HisI Num
Académie 5

UNIVERSITÉ 
CÔTE D'AZUR

Semantic annotation of Historia Naturalis of Pliny the Elder

Thesaurus TheZoo

The screenshot displays the Thesaurus TheZoo interface. On the left, a 'Concepts hierarchy' shows a tree structure of biological categories, with 'tiger' selected. The main panel shows details for the 'tiger' concept, including its label, collection, taxonomic path, and translations in various languages. Annotations with arrows point to these specific sections.

Concepts hierarchy

Concepts label

Concepts Collection

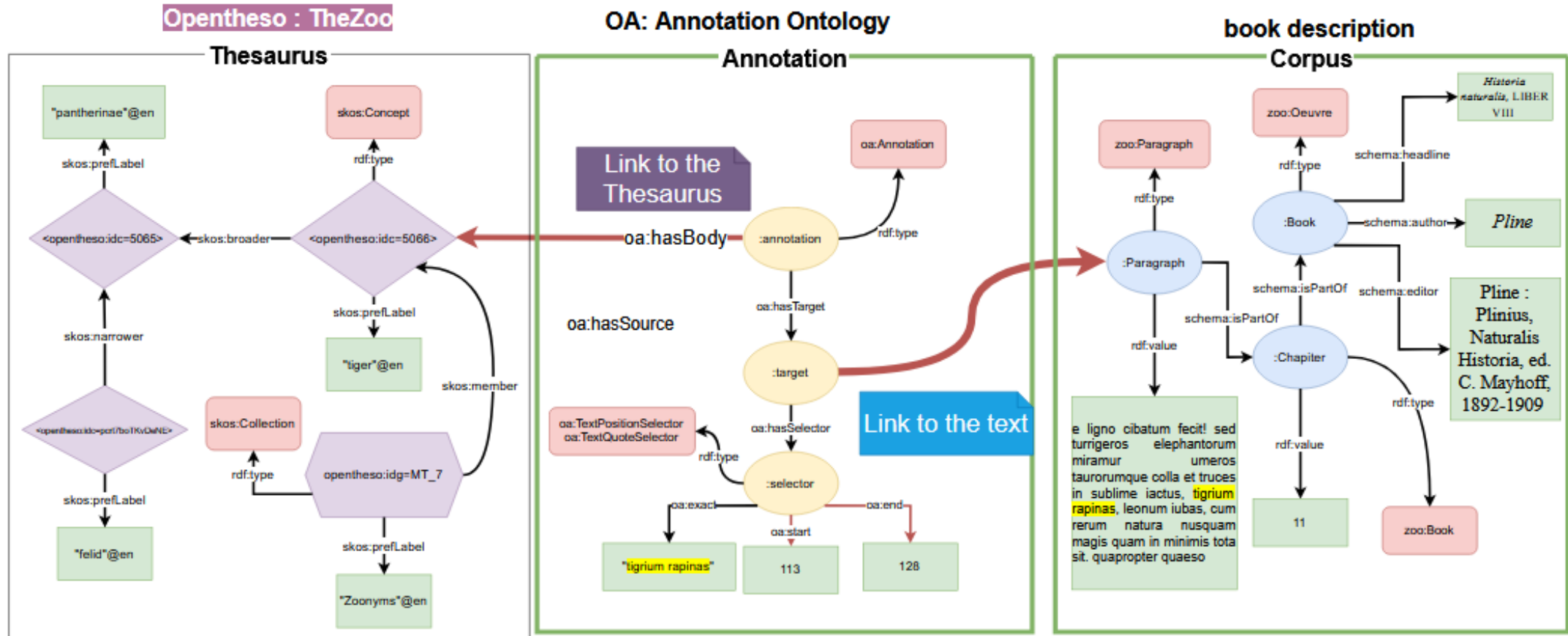
Label translations

Manual annotation of the text

The screenshot shows a Latin text passage with manual annotations. A red box labeled 'Paragraph' points to the entire text. Another red box labeled 'Annotation' points to a comment box containing the text 'tiger; ferocity' and a date '8 décembre 2016, 12:12'. The text in the image is:

[[4]] e ligno cibatum fecit; sed turrigeros elephantorum miramur
umeros; taurorumque colla et truces in sublime iactus, tigrum
rapinas, leonum iuba, cum rerum natura nusquam magis quam
in minimis tota sit, quapropter quaeso ne legentes, quoniam ex


Construction of the Zoomathia knowledge graph



Automatic annotation of the Zoomathia corpus

- Classifier
- Named entity recognition on DBpedia and Wikidata
 - DBpedia Spotlight
 - spaCy fishing (Entity-Fishing)

Exploration of the Zoomathia corpus



Home Explore the corpus **Explore a work** Competency questions

Author **Work**

Pliny the Elder Historia naturalis

Editor: ed. C. Mayhoff Date: 1892-1909 Export: [XML-TEI](#)

Table of content

- Book - LIBER VIII
 - Paragraph - 1
 - Paragraph - 2
 - Paragraph - 3
 - Paragraph - 4
 - Paragraph - 5
 - Paragraph - 6
 - Paragraph - 7
 - Paragraph - 8
 - Paragraph - 9
 - Paragraph - 10
 - Paragraph - 11
 - Paragraph - 12
 - Paragraph - 13
 - Paragraph - 14
 - Paragraph - 15
 - Paragraph - 16
 - Paragraph - 17

Book LIBER VIII

[1] Ad reliqua transeamus animalia et primum terrestria. Maximum est elephans proximum que humanis sensibus, quippe **intellectus illis sermonis patrii et imperiorum obedientia**, officiorum quae didicere memoria, amoris et gloriae voluptas, immo vero, quae etiam in homine rara, probitas, prudentia, aequitas, religio quoque siderum solis que ac lunae veneratio.

[2] Auctores sunt in Mauretaniae saltibus ad quendam amnem, cui nomen est Amilo, nitescente luna nova greges eorum descendere ibique se purificantes sollemniter aqua circumspergi atque ita salutato sidere in silvas reverti vitulorum fatigatos prae se ferentes.

15 concepts

WILD astral cult

comparison with human behaviour and qualities

comparison with human behaviour and qualities difference in favour of animal

comparison with human behaviour and qualities similarity

elephant language comprehension memory

moon cult pleasure relative size religion

sense of justice size sun cult

16 concepts

WILD astral cult elephant gregarious

habitat habitat forest intellectual authority

moon phase new moon purification ritual

religion ritual solidarity terrestrial habitat

Exploration of the Zoomathia corpus



Home

Explore the corpus

Explore a work

Competency questions

Define a custom filter

Note: This form can take multiple values for each search field. The default the result is union between values of the author and the work search field.

Filter on author(s):

Aelian x Pliny the Elder x

Filter on work(s):

Bruta animalia ratione uti x

Filter on concept(s):

BIRD x OR AND

Search

Results

Number of Work: 1

Table of content

▼ Oeuvre - Historia naturalis

▼ Book - LIBER VIII

Paragraph - 36

Paragraph - 127

Paragraph - 142

Paragraph - 223

▼ Book - LIBER IX

Paragraph - 37

Paragraph - 63

Paragraph - 186

> Book - LIBER X

> Book - LIBER XI

[36]

Megasthenes scribit in India serpentes in tantam magnitudinem adolescere, ut solidos hauriant cervos tauros que, Metrodorus circa Rhyndacum amnem in Ponto, supervolantes ut quamvis alte perniter que alites haustu raptas absorbeant.

[127]

Specus si non habuere, ramorum fruticum que congerie aedificant, inpenetrabiles imbris molli que fronde constratos. Primis diebus bis septenis tam gravi somno premuntur, ut ne vulneribus quidem excitari queant. tunc mirum in modum vetero pinguescunt. Illi sunt adipis medicaminibus apti contra que defluvium capilli tenaces. Ab his diebus residunt ac priorum pedum suctu vivunt. Fetus rigentes adprimendo pectori fovent non alio incubitu quam ad ova volucres.

Historia naturalis

Book LIBER VIII

17 concepts

BIRD India Megasthenes Metrodorus Place

carnivorous deer flying historian

historical character intellectual authority

locomotion nourishment philosopher

predation size snake

13 concepts

BIRD alopecia bear cold fat hibernation

house building human disease incubation

medical use of animal product nourishment

Exploration of the Zoomathia corpus



Home

Explore the corpus

Explore a work

Competency questions

Select a competency question

Which animals build a habitat?

filter row by keyword...

paragraph	name_animal	name_construction
Pliny/historia_naturalis/8/218	ferret	burrow
Pliny/historia_naturalis/8/218	rabbit	burrow
Pliny/historia_naturalis/8/218	hare	burrow
Pliny/historia_naturalis/11/14	bee	hive
Pliny/historia_naturalis/11/15	bee	hive
Pliny/historia_naturalis/11/16	bee	hive
Pliny/historia_naturalis/11/22	bee	hive
Pliny/historia_naturalis/11/22	worker bee	hive
Pliny/historia_naturalis/11/23	bee	hive
Pliny/historia_naturalis/11/24	bee	hive

Showing 1 to 10 of 92 results

Previous 1 2 3 ... 10 Next



Construction and Exploration of the Knowledge Graph Annotating the Zoomathia Text Corpus

Barbe A., Tounsi Dhouib M., Faron C., Corneli M., Zucker A. Construction d'un graphe de connaissance à partir des annotations manuelles de textes de zoologie antique. IC 2023 – PFIA 2023 [hal-04156996](https://hal.archives-ouvertes.fr/hal-04156996)

Conclusion: a unified (reusable) Knowledge Graph based approach

- Semantic annotation of a text corpus
- Construction of a Knowledge Graph
- Competency questions implemented by queries on the KG
 - Concept search
 - Visualisation of enriched texts
 - Graph exploration (MGExplorer)
 - Temporal analysis (MuvIn)

A Knowledge Graph based approach not limited to text annotation

- WeKG-MF: a Knowledge Graph of Observational Weather Data
- CoffeeWKG: a Weather Knowledge Graph for Coffee Regions in Colombia
- WheatObservationsKG: a Knowledge Graph of Crop Monitoring Data
- WoodKG: a Knowledge Graph of Wood and Charcoal Observations
- ...



Federation of complementary Knowledge Graphs:

Scientific Literature KG + Observation data KG

e.g. scientific literature on Wheat + crop monitoring data + weather data