

BiOR² : a database/software process dedicated to plant pests ranking in France

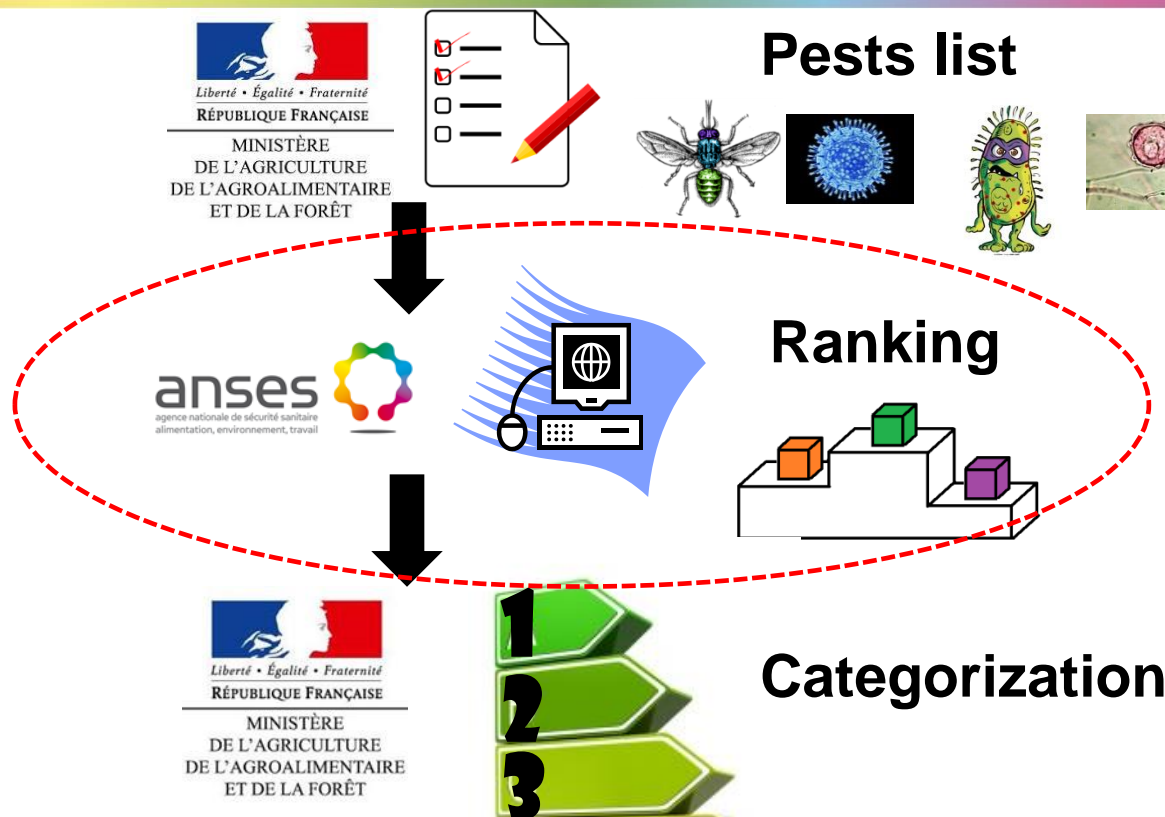
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Expertise and Biological Risks Unit

Plant Health Laboratory

French Agency for Food, Environmental and Occupational Health and Safety (ANSES)

Categorization scheme

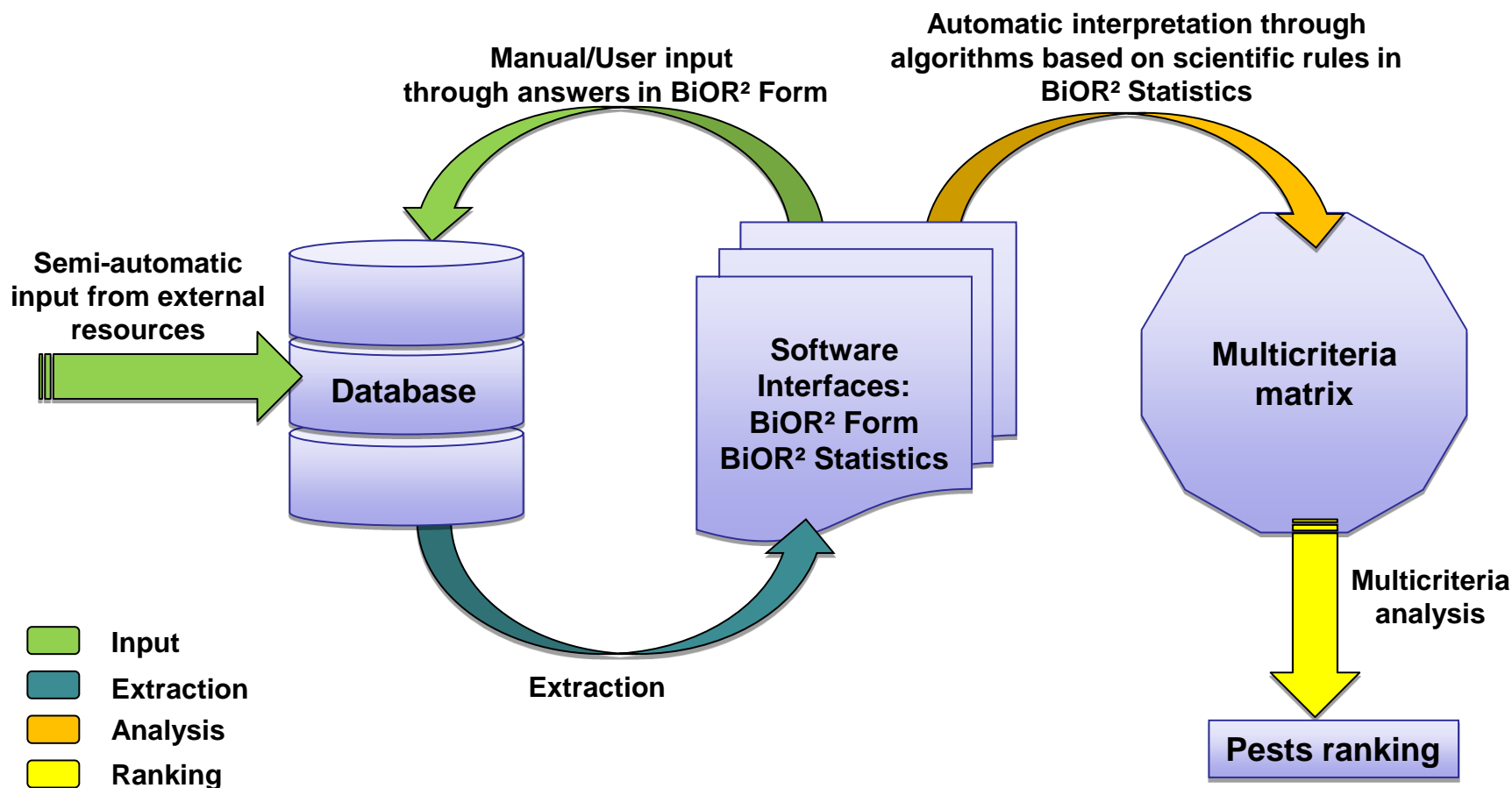


Risk Category	Resources allocation
First (1)	Administrative authority
Second (2)	Administrative authority and/or a regional collective program
Third (3)	Private initiative

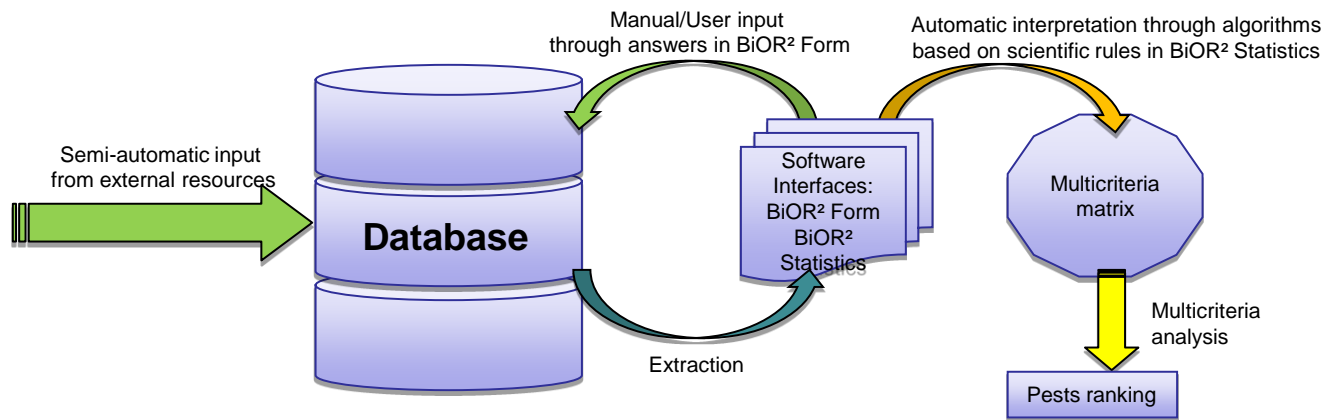
Public Resources
(prevention, monitoring
and control measures)



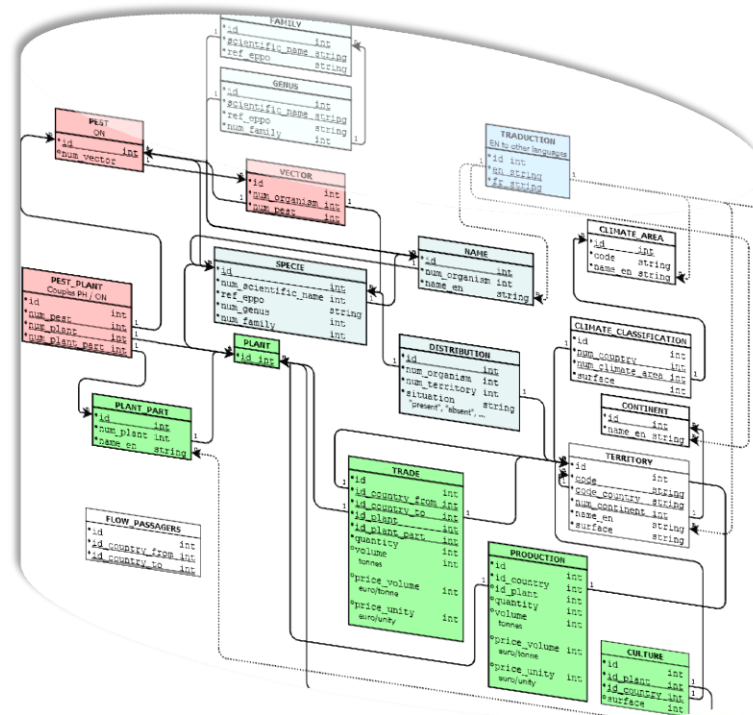
BiOR²: Biological Organisms data Retrieval and Ranking system



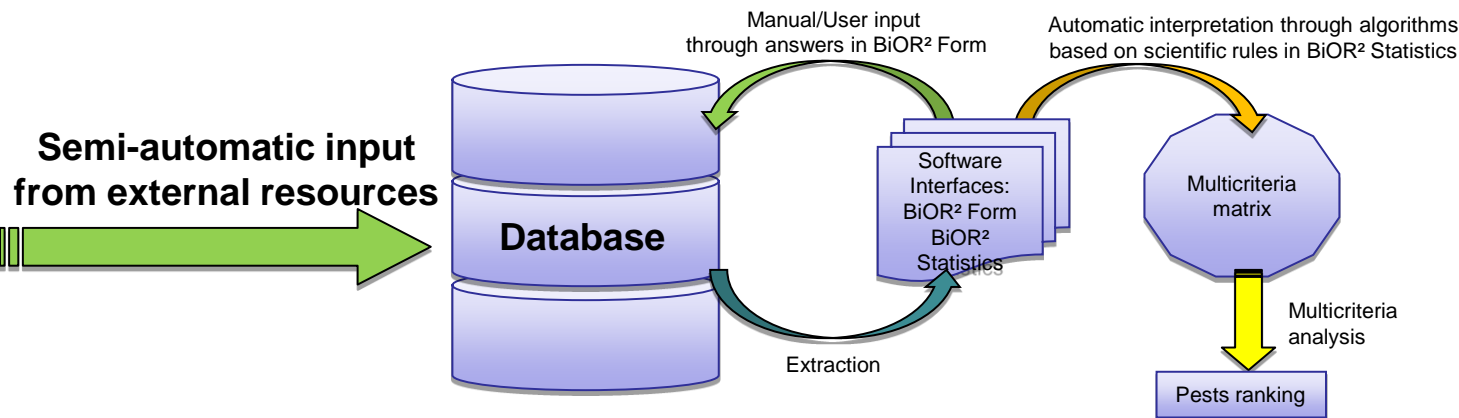
BiOR²: Database characteristics



- Standalone database PostgreSQL
- Multiplatform server
- Simultaneous access
- Data independence
- Sustainability



BiOR²: Database filling



Semi-automatic input

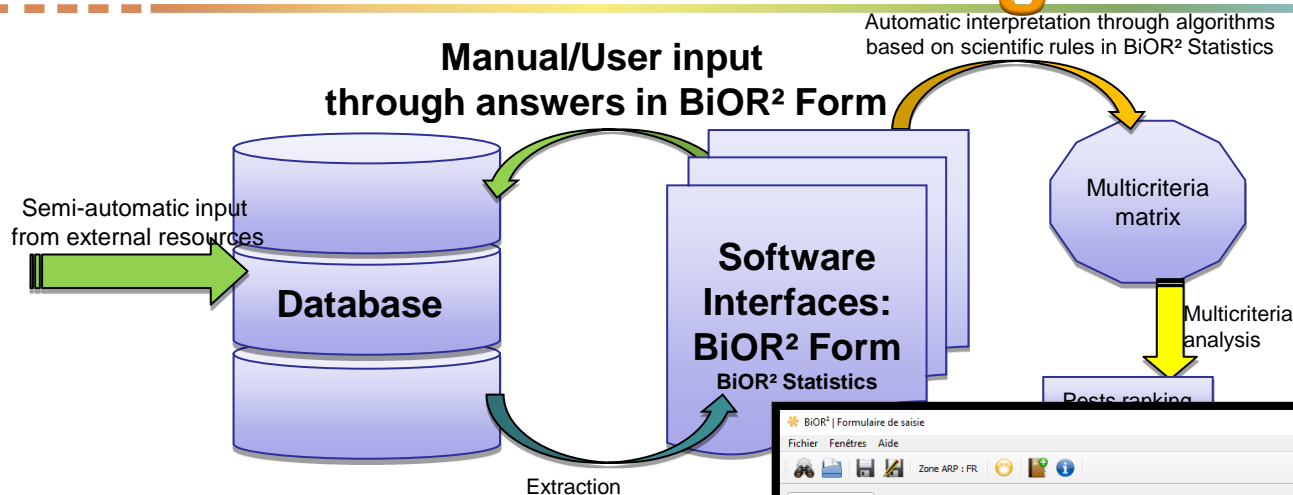
- Inclusion of other databases (eg PQR/EPPO)
- Mass download of data (eg Eurostat)

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      1  MUSHROOM SPAIN", "EXPORT", "Aug. 2014", "VALUE_IN_EUROS", "1628"
9)  "MUSHROOM SPAIN", "EXPORT", "Aug. 2014", "QUANTITY_IN_100KG", "1"
1989) "MUSHROOM SPAIN", "EXPORT", "Sep. 2014", "VALUE_IN_EUROS", "12272"
2989) "MUSHROOM SPAIN", "EXPORT", "Sep. 2014", "QUANTITY_IN_100KG", "2"
3989) "MUSHROOM SPAIN", "EXPORT", "Oct. 2014", "VALUE_IN_EUROS", "12034"
4989) "MUSHROOM SPAIN", "EXPORT", "Oct. 2014", "QUANTITY_IN_100KG", "1"
5989) "MUSHROOM SPAIN", "EXPORT", "Nov. 2014", "VALUE_IN_EUROS", "10477"
6989) "MUSHROOM SPAIN", "EXPORT", "Nov. 2014", "QUANTITY_IN_100KG", "1"
7989) "MUSHROOM SPAIN", "EXPORT", "Dec. 2014", "VALUE_IN_EUROS", "19324"
8989) "MUSHROOM SPAIN", "EXPORT", "Dec. 2014", "QUANTITY_IN_100KG", "1"
9989) "LIVE OUTDOOR PLANTS, INCL. THEIR ROOTS (EXCL. SUILES, TUBERS, TUBERO
1989) "LIVE OUTDOOR PLANTS, INCL. THEIR ROOTS (EXCL. SUILES, TUBERS, TUBERO
2989) "DRIED, DYED, BLEACHED, IMPREGATED OR OTHERWISE PREPARED CUT FLOWER
3989) "DRIED, DYED, BLEACHED, IMPREGATED OR OTHERWISE PREPARED CUT FLOWER
4989) "TULIPS, FRESH OR CHILLED", "EXPORT", "Oct. 2014", "VALUE_IN_EU
5989) "FOLIAGE, BRANCHES AND OTHER PARTS OF PLANTS, WITHOUT FLOWERS OR BUD
6989) "TOMATOES, FRESH OR CHILLED", "EXPORT", "Oct. 2014", "VALUE_IN_EU
7989) "TOMATOES, FRESH OR CHILLED", "EXPORT", "Oct. 2014", "QUANTITY_IN
8989) "SHALLOTS, FRESH OR CHILLED", "EXPORT", "Aug. 2014", "VALUE_IN_EU
9989) "SHALLOTS, FRESH OR CHILLED", "EXPORT", "Aug. 2014", "QUANTITY_IN
1989) "FRESH OR CHILLED CAULIFLOWERS AND HEADED BROCCOLI", "EXPORT", "Fe
2989) "FRESH OR CHILLED CAULIFLOWERS AND HEADED BROCCOLI", "EXPORT", "Fe
3989) "FRESH OR CHILLED CAULIFLOWERS AND HEADED BROCCOLI", "EXPORT", "Ju
4989) "FRESH OR CHILLED CAULIFLOWERS AND HEADED BROCCOLI", "EXPORT", "Ju
5989) "FRESH OR CHILLED MUSHROOMS OF THE GENUS *****AGARICUS***** "EXPO
6989) "FRESH OR CHILLED MUSHROOMS OF THE GENUS *****AGARICUS***** "EX
7989) "FRESH OR CHILLED MUSHROOMS OF THE GENUS *****AGARICUS***** "EX
8989) "FRESH OR CHILLED MUSHROOMS OF THE GENUS *****AGARICUS***** "EX
9989) "FRESH OR CHILLED MUSHROOMS OF THE GENUS *****AGARICUS***** "EX

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BiOR²: Database filling



Manual input

- Data on both host plants and pathogens
- Input help through specialized software interface: **BiOR² Form**

BiOR² | Formulaire de saisie

Fichier Fenêtres Aide

Zone ARP : FR

XYLEFA X

Biologie Dissémination Plantes hôtes Nuisibilité

Stratégie de reproduction

☒ Oui ☐ Non ☐ Pas d'information

- Séxuée ? ☐ Oui ☒ Non ☐ Pas d'information

- Asexuée ? ☐ Oui ☒ Non ☐ Pas d'information

Hôte(s) alterne(s) et autre(s) espèce(s) essentielle(s) :

☐ Oui ☒ Non ☐ Pas d'information

Ennemi(s) naturel(s) décrits

☐ Oui ☒ Non ☐ Pas d'information

Plasticité/Adaptabilité de l'organisme

☐ Oui ☒ Non ☐ Pas d'information

- Existence de biotypes capables de s'adapter à une gamme plus large d'habitats ou d'hôtes ? ☐ Oui ☒ Non ☐ Pas d'information

- Existence de biotypes capables de développer des souches résistantes aux produits phytosanitaires ? ☐ Oui ☒ Non ☐ Pas d'information

- Existence de biotypes capables de contourner la résistance de l'hôte ? ☐ Oui ☒ Non ☐ Pas d'information

Noms / Taxonomie

Code OEPP : XYLEFA

Nom préféré : Xylella fastidiosa

Autre(s) nom(s) scientifique(s) :

Citrus variegated chlorosis agent

Grapevine Pierce's disease agent

Peach phony agent

Peach virus 4

Prunus virus 3

Xylella fastidiosa subsp. fastidiosa

Xylella fastidiosa subsp. perniciosa

Nom(s) commun(s) :

[en] Anaheim disease

[en] California vine disease

[en] Dwarf disease of alfalfa

[en] Dwarf disease of lucerne

[en] Leaf scorch of almond

[en] Leaf scorch of maple

[en] Pierce's disease of grapevine

[en] Anaheim disease

[en] California vine disease

[en] Dwarf disease of alfalfa

[en] Dwarf disease of lucerne

[en] Leaf scald of oleander

[en] Leaf scald of plum

[en] Leaf scorch of almond

[en] Leaf scorch of elm

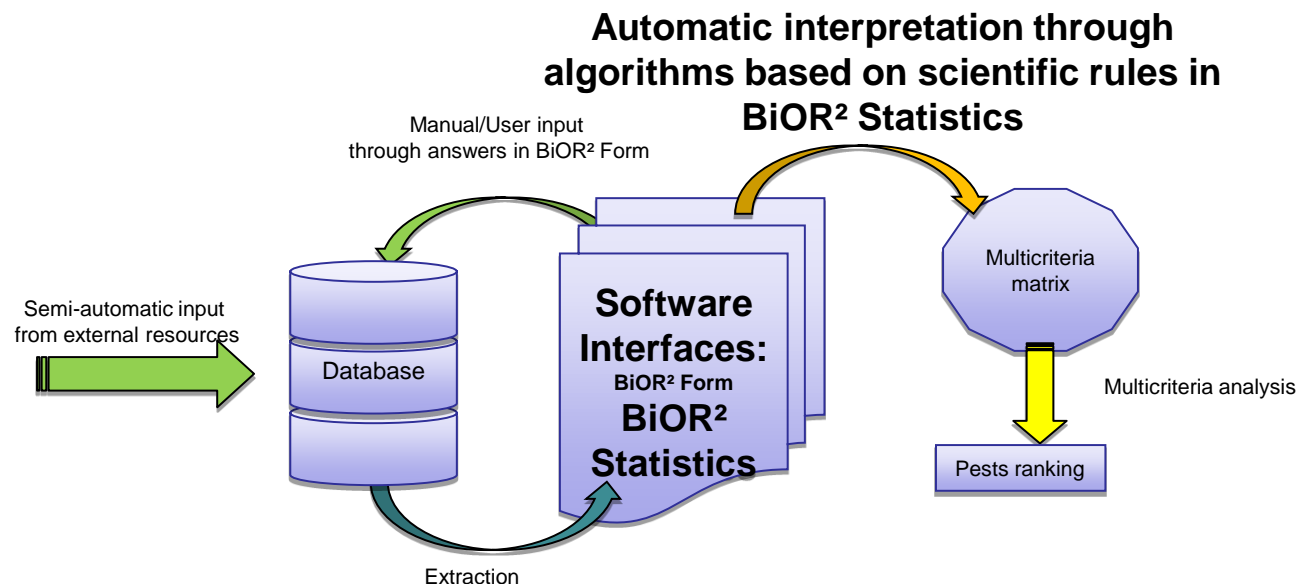
[en] Leaf scorch of maple

Nom	Code OEPP	Niveau
Bacteria	1BACTK	Règne
Proteobacteria	1PROBP	Phylum
Gammaproteobacteria	1GAMBC	Classe
Xanthomonadales	1XANTF	Ordre
Xanthomonadaceae	1XANTF	Famille
Xylella	1XYLEG	Genre
Xylella fastidiosa	XYLEFA	Espèce

Auteur	Titre	Date	hier joi
M et al.	fastidiosa from coffee plants in Costa Rica.	2008	Oui
http://www.ent.uga.edu	Statement of EFSA on host plants, entry and spread pathways and risk reduction options for Xylella fastidiosa Wells et al.	29/07/...	Oui
EFSA	Datasheet Xylella fastidiosa (Pierce's disease of grapevines)	2013	Oui
www.cabi.org	Xylella fastidiosa (Pierce's disease of grapevines)	28/07/...	Oui

Références bibliographiques

BiOR²: what about interpretation?



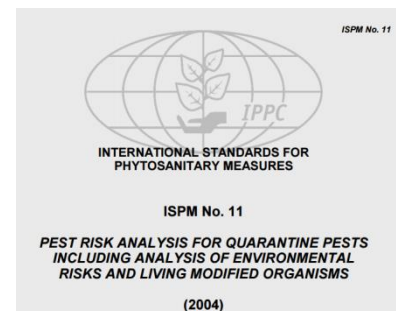
Interpretation according to criteria

Pest Risk Analysis (PRA)

European et Mediterranean Plant Protection Organization
Organisation Européenne et Méditerranéenne pour la Protection des Plantes

11-17053
PM 5/3 (5)

Guidelines on Pest Risk Analysis



BiOR²: from the data ...to 24 criteria

Entry

C1. Width of the spectrum of pests host plants

C2. Volume of movement along the pathway coming from regions where the pest is present

C3. Probability of the pest to enter PRA area undetected under current inspection procedures

C4. Regulatory vigilance level in the PRA area

C5. Probability of arrival of the pest to the PRA area through natural spread

C6. Probability of the pest to transfer from the pathway to a suitable host or habitat

Establishment

C7. Similarity of the climatic conditions between the PRA area and the current area of pest distribution

C8. Host plants coverage in the PRA area

C9. Host plants distribution in the PRA area

C10. Environment management/farming practices favorable for the establishment of the pest in the PRA area

C11. Establishment of local population

C12. Adaptability/plasticity of the pest

C13. Establishment of the pest in different climatic conditions

Spread

C14. Spread of the pest in the PRA area by natural means

C15. Spread of the pest in the PRA area by human assistance

C16. Production value of host plants in the PRA area

C17. Export value of host plants in the PRA area

C18. Regulatory recommendations in the other regional organizations of plant protection

C19. Negative effect of the pest on crop yield and/or quality of cultivated plants without any control measures within its current area of distribution

C20. Phytosanitary measures that could impact the negative effect of the pest

C21. Probability of the pest to attack protected plant species

C22. Host plants playing a role in ecosystem services among the pest plant hosts

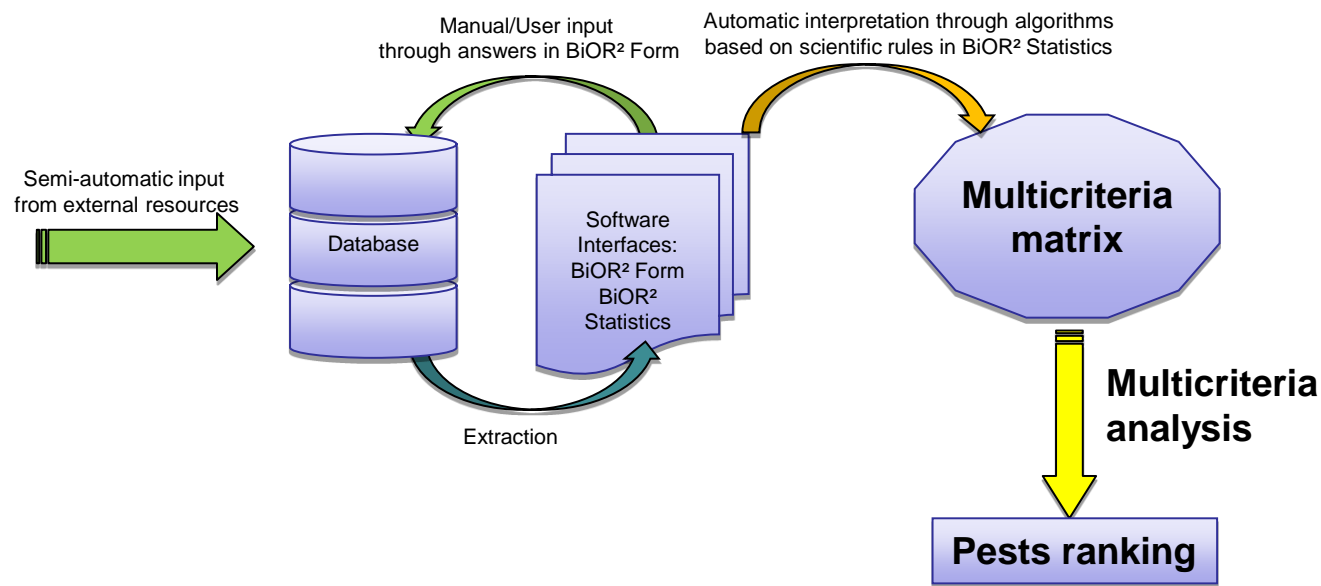
C23. Other potential environmental impacts of the pest

C24. Existence of studies relating the pest impact on human health

Economic impact

Environmental impact

BiOR²: Multicriteria matrix analysis



Visual PROMETHEE

BiOR²: Application fields

French Overseas Departments
110 pests

Metropolitan France
278 pests

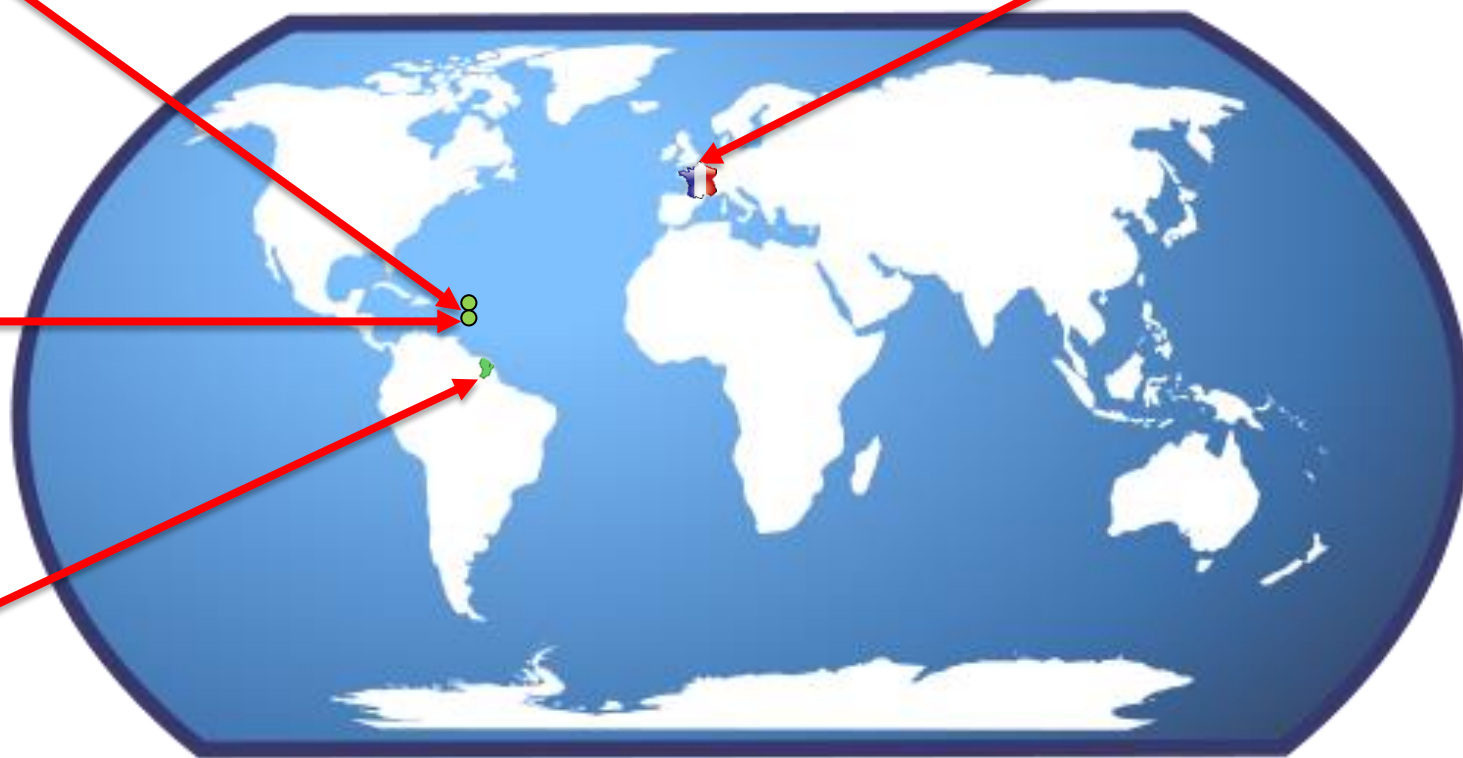
Guadeloupe



Martinique



French Guiana





Objective



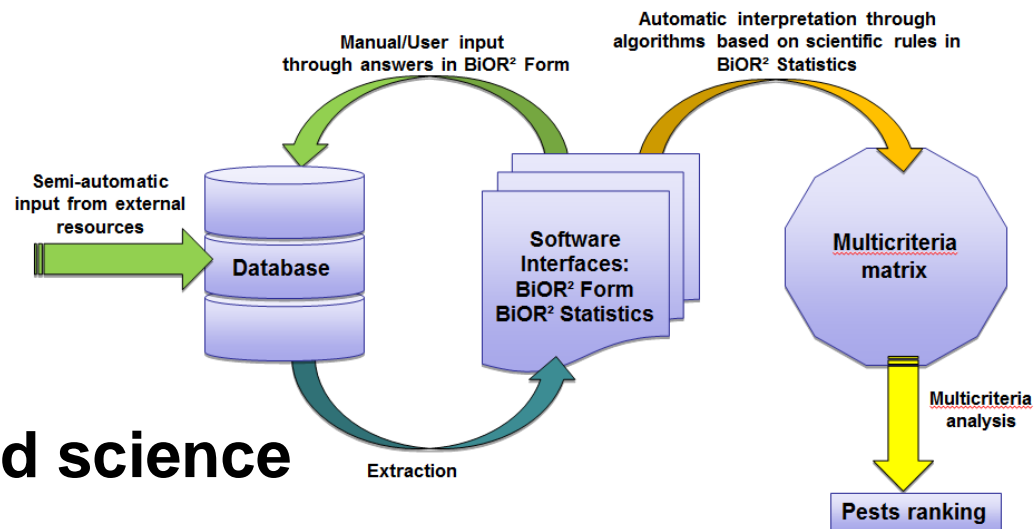
Generic



Based on sound science



Highly adaptable to meet new questions



Thank you

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