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## 

## NER

**Prompt**

You are an information extraction system. You respond to each message with a json-formatted summary of named entities in the message. Each named entity appears as one entry in a json-formatted list. Each entity must have two properties, its type and its name. Only include entity names that appear in the text. The entity types are,

* Plant pest
* Insect vector
* Host plant.
* Disease
* Geographic location

The names must be precise.

The message is : “PWD occurs when the host plant is infected with pinewood nematodes “

**Answer**

[

{

"type": "Disease",

"name": "PWD"

},

{

"type": "Plant pest",

"name": "pinewood nematodes"

}

]

**Generated prompt**

You are an information extraction system. For each message, generate a JSON-formatted summary of the named entities identified in the text. Each entity must be represented as an object in a JSON-formatted list with the following properties:

* **type**: The category of the entity.
* **name**: The exact name of the entity as it appears in the text.

**Entity Types:**

1. **Plant pest**: Include parasitic organisms, such as nematodes, fungi, or bacteria, that harm plants.
2. **Insect vector**: Include insects that transmit diseases or pathogens to plants.
3. **Host plant**: Include the specific plant species or types that are susceptible to the pest or disease.
4. **Disease**: Include specific plant diseases mentioned in the text.
5. **Geographic location**: Include specific names of places, regions, or countries.

**Guidelines:**

* **Precision**: Always extract the most specific name available in the text. Avoid generic terms like "host plant" unless no specific name is provided.
* **Text-based extraction**: Only include entity names that explicitly appear in the text.
* **Context awareness**: If the text uses abbreviations, extract them as they are and classify them based on the context provided.
* The message is : “Bursaphelenchus xylophilus, is a notorious parasitic nematode of pine trees that causes pine wilt disease (PWD), leading to extensive mortality of different pine trees around the world and considerable economic losses”

**Answer**

[

{

"type": "Plant pest",

"name": "Bursaphelenchus xylophilus"

},

{

"type": "Disease",

"name": "pine wilt disease"

},

{

"type": "Disease",

"name": "PWD"

},

{

"type": "Host plant",

"name": "pine trees"

},

{

"type": "Geographic location",

"name": "the world"

}

]

message : "The bacterium 'Xylella Fastidiosa' was detected in nine more places in the Porto Metropolitan Area, mainly in citrus, and the demarcated area was extended, revealed this Monday the Confederation of Farmers of Portugal (CAP). "As a result of the confirmation of the presence of the bacterium 'Xylella Fastidiosa' in nine new locations, in the municipalities of Vila Nova de Gaia, Santa Maria da Feira, Porto and Espinho"

Sure, here is the JSON-formatted summary of the named entities identified in the text:

[

{

"type": "Plant pest",

"name": "Xylella Fastidiosa"

},

{

"type": "Host plant",

"name": "citrus"

},

{

"type": "Geographic location",

"name": "Porto Metropolitan Area"

},

{

"type": "Geographic location",

"name": "Vila Nova de Gaia"

},

{

"type": "Geographic location",

"name": "Santa Maria da Feira"

},

{

"type": "Geographic location",

"name": "Porto"

},

{

"type": "Geographic location",

"name": "Espinho"

}

]

## Binary relationship Located in

## - Causes

## - Have been found on.

**Generated instruction**

You are an information extraction system that extracts entities from messages as before. You also extract oriented relationships between entities. The list of relationships to be extracted by you is :

- Located in

- Causes

- Have been found on.

The types of entities that are arguments of the relationships are fixed by me. The argument type of each relationship is in brackets. The first argument is before the relationship. The second argument is after the relationship.

- [pest] Located in [geographical location]

- [pest] Causes [disease]

- [pest] Have been found on [host plant].

Understood. I will extract named entities and oriented relationships between them as specified. Here is the JSON-formatted summary of the named entities and relationships identified in the text:

**Message:**

The bacterium 'Xylella Fastidiosa' was detected in nine more places in the Porto Metropolitan Area, mainly in citrus, and the demarcated area was extended, revealed this Monday the Confederation of Farmers of Portugal (CAP). "As a result of the confirmation of the presence of the bacterium 'Xylella Fastidiosa' in nine new locations, in the municipalities of Vila Nova de Gaia, Santa Maria da Feira, Porto and Espinho."

**JSON-formatted Summary:**

{

"entities": [

{

"type": "Plant pest",

"name": "Xylella Fastidiosa"

},

{

"type": "Host plant",

"name": "citrus"

},

{

"type": "Geographic location",

"name": "Porto Metropolitan Area"

},

{

"type": "Geographic location",

"name": "Vila Nova de Gaia"

},

{

"type": "Geographic location",

"name": "Santa Maria da Feira"

},

{

"type": "Geographic location",

"name": "Porto"

},

{

"type": "Geographic location",

"name": "Espinho"

}

],

"relationships": [

{

"type": "Located in",

"arguments": [

{

"type": "Plant pest",

"name": "Xylella Fastidiosa"

},

{

"type": "Geographic location",

"name": "Porto Metropolitan Area"

}

]

},

{

"type": "Have been found on",

"arguments": [

{

"type": "Plant pest",

"name": "Xylella Fastidiosa"

},

{

"type": "Host plant",

"name": "citrus"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Plant pest",

"name": "Xylella Fastidiosa"

},

{

"type": "Geographic location",

"name": "Vila Nova de Gaia"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Plant pest",

"name": "Xylella Fastidiosa"

},

{

"type": "Geographic location",

"name": "Santa Maria da Feira"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Plant pest",

"name": "Xylella Fastidiosa"

},

{

"type": "Geographic location",

"name": "Porto"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Plant pest",

"name": "Xylella Fastidiosa"

},

{

"type": "Geographic location",

"name": "Espinho"

}

]

}

]

}

The establishment of laboratory isolates of the pinewood nematode Bursaphelenchus xylophilus, the causal agent of the pine wilt disease, has been crucial to research on this important forest pathogen. Obtaining and Maintaining Cultures of Pinewood Nematodes Bursaphelenchus xylophilus from Wild Dauers PMID: 35819595 DOI: 10.1007/978-1-0716-2517-0\_1 Obtaining and Maintaining Cultures of Pinewood Nematodes Bursaphelenchus xylophilus from Wild Dauers Abstract The establishment of laboratory isolates of the pinewood nematode Bursaphelenchus xylophilus, the causal agent of the pine wilt disease, has been crucial to research on this important forest pathogen. Here we describe a simple, low-cost, and easy way to obtain samples of wild populations of B. xylophilus by culturing dauers extracted directly from the insect vector.

Sure, here is the JSON-formatted summary of the named entities and relationships identified in the text:

### Message:

The establishment of laboratory isolates of the pinewood nematode Bursaphelenchus xylophilus, the causal agent of the pine wilt disease, has been crucial to research on this important forest pathogen. Obtaining and Maintaining Cultures of Pinewood Nematodes Bursaphelenchus xylophilus from Wild Dauers PMID: 35819595 DOI: 10.1007/978-1-0716-2517-0\_1 Obtaining and Maintaining Cultures of Pinewood Nematodes Bursaphelenchus xylophilus from Wild Dauers Abstract The establishment of laboratory isolates of the pinewood nematode Bursaphelenchus xylophilus, the causal agent of the pine wilt disease, has been crucial to research on this important forest pathogen. Here we describe a simple, low-cost, and easy way to obtain samples of wild populations of B. xylophilus by culturing dauers extracted directly from the insect vector.

### JSON-formatted Summary:

{

"entities": [

{

"type": "Plant pest",

"name": "Bursaphelenchus xylophilus"

},

{

"type": "Disease",

"name": "pine wilt disease"

}

],

"relationships": [

{

"type": "Causes",

"arguments": [

{

"type": "Plant pest",

"name": "Bursaphelenchus xylophilus"

},

{

"type": "Disease",

"name": "pine wilt disease"

}

]

}

]

}

Epidemiological Role of Dictyophara europaea (Hemiptera: Dictyopharidae) in the Transmission of ‘Candidatus Phytoplasma solani’ Bois noir, an economically important disease of grapevine yellows that causes significant economic losses in wine production, is associated with ‘Candidatus Phytoplasma solani’ and transmitted to grapevines by cixiids Hyalesthes obsoletus and Reptalus panzeri.

Polyphagous planthopper Dictyophara europaea, commonly found in natural habitats, harbors phytoplasmas from distinct groups and is an alternative vector in the open epidemiological cycles of the Flavescence dorée phytoplasma in grapevine in European vineyards. This study addresses the role of D. europaea in the transmission cycle(s) of ‘Ca. P. solani’ among wild habitats, natural reservoir plants, and the vineyard agroecosystem using MLSA and transmission trials with naturally infected adults to grapevine and Catharanthus roseus. "

{

"entities": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Disease",

"name": "Candidatus Phytoplasma solani"

},

{

"type": "Disease",

"name": "Bois noir"

},

{

"type": "Disease",

"name": "grapevine yellows"

},

{

"type": "Insect vector",

"name": "Hyalesthes obsoletus"

},

{

"type": "Insect vector",

"name": "Reptalus panzeri"

},

{

"type": "Host plant",

"name": "grapevines"

},

{

"type": "Geographic location",

"name": "European vineyards"

},

{

"type": "Host plant",

"name": "Catharanthus roseus"

}

],

"relationships": [

{

"type": "Causes",

"arguments": [

{

"type": "Disease",

"name": "Candidatus Phytoplasma solani"

},

{

"type": "Disease",

"name": "Bois noir"

}

]

},

{

"type": "Causes",

"arguments": [

{

"type": "Disease",

"name": "Candidatus Phytoplasma solani"

},

{

"type": "Disease",

"name": "grapevine yellows"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Geographic location",

"name": "natural habitats"

}

]

},

{

"type": "Have been found on",

"arguments": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Host plant",

"name": "grapevines"

}

]

},

{

"type": "Have been found on",

"arguments": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Host plant",

"name": "Catharanthus roseus"

}

]

}

]

}

The type of the first argument of the Causes relationship is incorrect

You're right, the type of the first argument of the "Causes" relationship should be "Plant pest" instead of "Disease." Here is the corrected JSON-formatted summary:

### JSON-formatted Summary:

{

"entities": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Plant pest",

"name": "Candidatus Phytoplasma solani"

},

{

"type": "Disease",

"name": "Bois noir"

},

{

"type": "Disease",

"name": "grapevine yellows"

},

{

"type": "Insect vector",

"name": "Hyalesthes obsoletus"

},

{

"type": "Insect vector",

"name": "Reptalus panzeri"

},

{

"type": "Host plant",

"name": "grapevines"

},

{

"type": "Geographic location",

"name": "European vineyards"

},

{

"type": "Host plant",

"name": "Catharanthus roseus"

}

],

"relationships": [

{

"type": "Causes",

"arguments": [

{

"type": "Plant pest",

"name": "Candidatus Phytoplasma solani"

},

{

"type": "Disease",

"name": "Bois noir"

}

]

},

{

"type": "Causes",

"arguments": [

{

"type": "Plant pest",

"name": "Candidatus Phytoplasma solani"

},

{

"type": "Disease",

"name": "grapevine yellows"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Geographic location",

"name": "natural habitats"

}

]

},

{

"type": "Have been found on",

"arguments": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Host plant",

"name": "grapevines"

}

]

},

{

"type": "Have been found on",

"arguments": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Host plant",

"name": "Catharanthus roseus"

}

]

}

]

}

message: "The establishment of laboratory isolates of the pinewood nematode Bursaphelenchus xylophilus, the causal agent of the pine wilt disease, has been crucial to research on this important forest pathogen. Obtaining and Maintaining Cultures of Pinewood Nematodes Bursaphelenchus xylophilus from Wild Dauers PMID: 35819595 DOI: 10.1007/978-1-0716-2517-0\_1 Obtaining and Maintaining Cultures of Pinewood Nematodes Bursaphelenchus xylophilus from Wild Dauers Abstract The establishment of laboratory isolates of the pinewood nematode Bursaphelenchus xylophilus, the causal agent of the pine wilt disease, has been crucial to research on this important forest pathogen. Here we describe a simple, low-cost, and easy way to obtain samples of wild populations of B. xylophilus by culturing dauers extracted directly from the insect vector."

{

"entities": [

{

"type": "Plant pest",

"name": "Bursaphelenchus xylophilus"

},

{

"type": "Disease",

"name": "pine wilt disease"

}

],

"relationships": [

{

"type": "Causes",

"arguments": [

{

"type": "Plant pest",

"name": "Bursaphelenchus xylophilus"

},

{

"type": "Disease",

"name": "pine wilt disease"

}

]

}

]

}

Message : « Epidemiological Role of Dictyophara europaea (Hemiptera: Dictyopharidae) in the Transmission of ‘Candidatus Phytoplasma solani’ Bois noir, an economically important disease of grapevine yellows that causes significant economic losses in wine production, is associated with ‘Candidatus Phytoplasma solani’ and transmitted to grapevines by cixiids Hyalesthes obsoletus and Reptalus panzeri.

Polyphagous planthopper Dictyophara europaea, commonly found in natural habitats, harbors phytoplasmas from distinct groups and is an alternative vector in the open epidemiological cycles of the Flavescence dorée phytoplasma in grapevine in European vineyards. This study addresses the role of D. europaea in the transmission cycle(s) of ‘Ca. P. solani’ among wild habitats, natural reservoir plants, and the vineyard agroecosystem using MLSA and transmission trials with naturally infected adults to grapevine and Catharanthus roseus. "

{

"entities": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Plant pest",

"name": "Candidatus Phytoplasma solani"

},

{

"type": "Disease",

"name": "Bois noir"

},

{

"type": "Disease",

"name": "grapevine yellows"

},

{

"type": "Insect vector",

"name": "Hyalesthes obsoletus"

},

{

"type": "Insect vector",

"name": "Reptalus panzeri"

},

{

"type": "Host plant",

"name": "grapevines"

},

{

"type": "Geographic location",

"name": "natural habitats"

},

{

"type": "Geographic location",

"name": "European vineyards"

},

{

"type": "Host plant",

"name": "Catharanthus roseus"

}

],

"relationships": [

{

"type": "Causes",

"arguments": [

{

"type": "Plant pest",

"name": "Candidatus Phytoplasma solani"

},

{

"type": "Disease",

"name": "Bois noir"

}

]

},

{

"type": "Causes",

"arguments": [

{

"type": "Plant pest",

"name": "Candidatus Phytoplasma solani"

},

{

"type": "Disease",

"name": "grapevine yellows"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Geographic location",

"name": "natural habitats"

}

]

},

{

"type": "Have been found on",

"arguments": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Host plant",

"name": "grapevines"

}

]

},

{

"type": "Have been found on",

"arguments": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Host plant",

"name": "Catharanthus roseus"

}

]

}

]

}

revise geographical location type

1. **Geographic location**: Include specific names of places, regions, or countries.

{

"entities": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Plant pest",

"name": "Candidatus Phytoplasma solani"

},

{

"type": "Disease",

"name": "Bois noir"

},

{

"type": "Disease",

"name": "grapevine yellows"

},

{

"type": "Insect vector",

"name": "Hyalesthes obsoletus"

},

{

"type": "Insect vector",

"name": "Reptalus panzeri"

},

{

"type": "Host plant",

"name": "grapevines"

},

{

"type": "Geographic location",

"name": "European vineyards"

},

{

"type": "Host plant",

"name": "Catharanthus roseus"

}

],

"relationships": [

{

"type": "Causes",

"arguments": [

{

"type": "Plant pest",

"name": "Candidatus Phytoplasma solani"

},

{

"type": "Disease",

"name": "Bois noir"

}

]

},

{

"type": "Causes",

"arguments": [

{

"type": "Plant pest",

"name": "Candidatus Phytoplasma solani"

},

{

"type": "Disease",

"name": "grapevine yellows"

}

]

},

{

"type": "Have been found on",

"arguments": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Host plant",

"name": "grapevines"

}

]

},

{

"type": "Have been found on",

"arguments": [

{

"type": "Insect vector",

"name": "Dictyophara europaea"

},

{

"type": "Host plant",

"name": "Catharanthus roseus"

}

]

}

]

}

In Balclutha calamagrostis and Balclutha punctata, the bacterium Nasuia has not been detected. In the bacteriomes of both species of Balclutha examined, only bacteria Sulcia occur, whereas Sodalis-like symbionts (phylum Proteobacteria, class Gammaproteobacteria) are localized in the fat body cells, in close vicinity of the bacteriomes. To our knowledge, this is the first report of the co-existence in Deltocephalinae leafhoppers of the ancient symbiont Sulcia and the more recently acquired Sodalis-like bacterium.

Sure, here is the JSON-formatted summary of the named entities and relationships identified in the text:

### JSON-formatted Summary:

{

"entities": [

{

"type": "Insect vector",

"name": "Balclutha calamagrostis"

},

{

"type": "Insect vector",

"name": "Balclutha punctata"

},

{

"type": "Plant pest",

"name": "Nasuia"

},

{

"type": "Plant pest",

"name": "Sulcia"

},

{

"type": "Plant pest",

"name": "Sodalis-like symbionts"

},

{

"type": "Geographic location",

"name": "Deltocephalinae leafhoppers"

}

],

"relationships": [

{

"type": "Have been found on",

"arguments": [

{

"type": "Plant pest",

"name": "Sulcia"

},

{

"type": "Insect vector",

"name": "Balclutha calamagrostis"

}

]

},

{

"type": "Have been found on",

"arguments": [

{

"type": "Plant pest",

"name": "Sulcia"

},

{

"type": "Insect vector",

"name": "Balclutha punctata"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Plant pest",

"name": "Sodalis-like symbionts"

},

{

"type": "Geographic location",

"name": "Deltocephalinae leafhoppers"

}

]

}

]

}

correct Deltocephalinae leafhoppers

{

"entities": [

{

"type": "Insect vector",

"name": "Balclutha calamagrostis"

},

{

"type": "Insect vector",

"name": "Balclutha punctata"

},

{

"type": "Plant pest",

"name": "Nasuia"

},

{

"type": "Plant pest",

"name": "Sulcia"

},

{

"type": "Plant pest",

"name": "Sodalis-like symbionts"

},

{

"type": "Insect vector",

"name": "Deltocephalinae leafhoppers"

}

],

"relationships": [

{

"type": "Have been found on",

"arguments": [

{

"type": "Plant pest",

"name": "Sulcia"

},

{

"type": "Insect vector",

"name": "Balclutha calamagrostis"

}

]

},

{

"type": "Have been found on",

"arguments": [

{

"type": "Plant pest",

"name": "Sulcia"

},

{

"type": "Insect vector",

"name": "Balclutha punctata"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Plant pest",

"name": "Sodalis-like symbionts"

},

{

"type": "Insect vector",

"name": "Deltocephalinae leafhoppers"

}

]

}

]

}

correct Located in

you must absolutely respect the type of the relationship arguments. This is very important. If you do not know, ask

1. **Located in**: Describes the geographical location where a plant pest is found.
   * [pest] Located in [geographical location]
2. {
3. "entities": [
4. {
5. "type": "Insect vector",
6. "name": "Balclutha calamagrostis"
7. },
8. {
9. "type": "Insect vector",
10. "name": "Balclutha punctata"
11. },
12. {
13. "type": "Plant pest",
14. "name": "Nasuia"
15. },
16. {
17. "type": "Plant pest",
18. "name": "Sulcia"
19. },
20. {
21. "type": "Plant pest",
22. "name": "Sodalis-like symbionts"
23. },
24. {
25. "type": "Insect vector",
26. "name": "Deltocephalinae leafhoppers"
27. }
28. ],
29. "relationships": [
30. {
31. "type": "Have been found on",
32. "arguments": [
33. {
34. "type": "Plant pest",
35. "name": "Sulcia"
36. },
37. {
38. "type": "Insect vector",
39. "name": "Balclutha calamagrostis"
40. }
41. ]
42. },
43. {
44. "type": "Have been found on",
45. "arguments": [
46. {
47. "type": "Plant pest",
48. "name": "Sulcia"
49. },
50. {
51. "type": "Insect vector",
52. "name": "Balclutha punctata"
53. }
54. ]
55. },
56. {
57. "type": "Have been found on",
58. "arguments": [
59. {
60. "type": "Plant pest",
61. "name": "Sodalis-like symbionts"
62. },
63. {
64. "type": "Insect vector",
65. "name": "Deltocephalinae leafhoppers"
66. }
67. ]
68. }
69. ]
70. }

# Golden flavescence in the vineyards, the first case in the Burgraviato

The yellow lights continue to spread. The Bassa Atesina is particularly affected: in Salorno almost all the controlled areas have symptomatic vines; in one vineyard the percentage of diseased plants has even reached 19 percent - the whole vineyard must be eradicated from 20 percent. And, for the first time, a case of flavescence dorée was also detected in the Burgraviato.

“The spread of flavescence dorée is a serious concern. We will only be able to overcome the challenges associated with this situation by relying on research and adequate advice ”, states the provincial councilor for agriculture Arnold Schuler.  
Since mid-August, on behalf of the Consorzio Vini Alto Adige, a team of specially trained employees has been visiting vineyards throughout South Tyrol and, in particular, the Chardonnay and Pinot Grigio vineyards and the plants of all the varieties harvested. planted two and three years ago, to mark symptomatic vines with a yellow-black tape. "This year we are concentrating equally on all the cultivation areas of South Tyrol, so as to ascertain the spread and plan the necessary interventions", explains Hansjörg Hafner, head of the Viticulture sector at the Consultancy Center for fruit growing in the 'South Tyrol. Throughout the province, the Phytosanitary Service and the Consultancy Center for Fruit Growing in South Tyrol collect specimens of leaves to be sent to the Laimburg Research Center for laboratory analysis. To the naked eye, in fact, the Flavescence dorée, scientific name of the flavescence dorée, is indistinguishable from the black wood disease. “This year, in the laboratory, we are mainly examining leaf samples from areas and vineyards that, in the past, have never been hit or only lightly hit. This also contributes to monitoring dissemination. The suspicion of flavescence dorée was confirmed in more than 15 percent of the samples examined in the laboratory ”, underlines Raffael Peer, project manager at the Consultancy Center for Fruit Growing in South Tyrol.

{

"entities": [

{

"type": "Disease",

"name": "flavescence dorée"

},

{

"type": "Geographic location",

"name": "Burgraviato"

},

{

"type": "Geographic location",

"name": "Bassa Atesina"

},

{

"type": "Geographic location",

"name": "Salorno"

},

{

"type": "Geographic location",

"name": "South Tyrol"

},

{

"type": "Host plant",

"name": "Chardonnay"

},

{

"type": "Host plant",

"name": "Pinot Grigio"

},

{

"type": "Geographic location",

"name": "Laimburg Research Center"

},

{

"type": "Disease",

"name": "black wood disease"

}

],

"relationships": [

{

"type": "Located in",

"arguments": [

{

"type": "Disease",

"name": "flavescence dorée"

},

{

"type": "Geographic location",

"name": "Burgraviato"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Disease",

"name": "flavescence dorée"

},

{

"type": "Geographic location",

"name": "Bassa Atesina"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Disease",

"name": "flavescence dorée"

},

{

"type": "Geographic location",

"name": "Salorno"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Disease",

"name": "flavescence dorée"

},

{

"type": "Geographic location",

"name": "South Tyrol"

}

]

},

{

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"arguments": [

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"name": "flavescence dorée"

},

{

"type": "Host plant",

"name": "Chardonnay"

}

]

},

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"arguments": [

{

"type": "Disease",

"name": "flavescence dorée"

},

{

"type": "Host plant",

"name": "Pinot Grigio"

}

]

}

]

}

**Flavescence dorée** is a non-curable disease of the **grapevine** spread all over the world. In the white varieties the leaves take on a yellowish color, while in the red varieties the color changes to reddish. The leaves then roll down from the edge and take on a triangular shape. The sprout remains green and does not turn into wood, the berries die. The first suspected case in **South Tyrol** was registered in 2016; since then the number of infestations has been steadily increasing and the disease of the vines is spreading from south to north. The pathogen of flavescence dorée is the cell-wall-free bacterium **Flavescence dorèe-Phytoplasma (FDp).** The main vector is the American vine leafhopper, a variety of vine cicada introduced in Europe about seventy years ago that spends its entire life cycle on the vine, transmitting the disease from branch to branch and from vineyard to vineyard, thus causing the occurrence of real epidemic outbreaks.

{

"entities": [

{

"type": "Disease",

"name": "Flavescence dorée"

},

{

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},

{

"type": "Geographic location",

"name": "South Tyrol"

},

{

"type": "Plant pest",

"name": "Flavescence dorée-Phytoplasma (FDp)"

},

{

"type": "Insect vector",

"name": "American vine leafhopper"

},

{

"type": "Geographic location",

"name": "Europe"

}

],

"relationships": [

{

"type": "Causes",

"arguments": [

{

"type": "Plant pest",

"name": "Flavescence dorée-Phytoplasma (FDp)"

},

{

"type": "Disease",

"name": "Flavescence dorée"

}

]

},

{

"type": "Located in",

"arguments": [

{

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{

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"name": "South Tyrol"

}

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"type": "Located in",

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},

{

"type": "Geographic location",

"name": "Europe"

}

]

},

{

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"arguments": [

{

"type": "Disease",

"name": "Flavescence dorée"

},

{

"type": "Host plant",

"name": "grapevine"

}

]

}

]

}

## Additional relationships : Affects, Is vected by

I have slightly modified the instructions about the relationships to extract. The new instructions are :

1. Located in: Describes the geographical location where a plant pest is found.

o Format: [pest] Located in [geographical location]

2. Causes: Indicates that a plant pest is responsible for causing a particular disease.

o Format: [pest] Causes [disease]

3. Affects: Indicates that a disease affects a plant.

o Format: [disease] Affects [host plant]

4. Has been found on: Describes instances where a plant pest has been detected on a specific host plant.

o Format: [pest] Have been found on [host plant]

5. Is vected by: Describes instances where a plant pest is transmitted or carried by a specific insect vector. o Format: [pest] Is vected by [insect vector]

Thank you for the clarification. Here is the JSON-formatted summary of the named entities and relationships identified in the text, following the new instructions:

{

"entities": [

{

"type": "Disease",

"name": "Flavescence dorée"

},

{

"type": "Host plant",

"name": "grapevine"

},

{

"type": "Geographic location",

"name": "South Tyrol"

},

{

"type": "Plant pest",

"name": "Flavescence dorée-Phytoplasma (FDp)"

},

{

"type": "Insect vector",

"name": "American vine leafhopper"

},

{

"type": "Geographic location",

"name": "Europe"

}

],

"relationships": [

{

"type": "Causes",

"arguments": [

{

"type": "Plant pest",

"name": "Flavescence dorée-Phytoplasma (FDp)"

},

{

"type": "Disease",

"name": "Flavescence dorée"

}

]

},

{

"type": "Affects",

"arguments": [

{

"type": "Disease",

"name": "Flavescence dorée"

},

{

"type": "Host plant",

"name": "grapevine"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Plant pest",

"name": "Flavescence dorée-Phytoplasma (FDp)"

},

{

"type": "Geographic location",

"name": "South Tyrol"

}

]

},

{

"type": "Located in",

"arguments": [

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"type": "Plant pest",

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},

{

"type": "Geographic location",

"name": "Europe"

}

]

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"type": "Has been found on",

"arguments": [

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"name": "Flavescence dorée-Phytoplasma (FDp)"

},

{

"type": "Host plant",

"name": "grapevine"

}

]

},

{

"type": "Is vectored by",

"arguments": [

{

"type": "Plant pest",

"name": "Flavescence dorée-Phytoplasma (FDp)"

},

{

"type": "Insect vector",

"name": "American vine leafhopper"

}

]

}

]

}

For apple proliferation, psyllids seem to be responsible for the transmission of the disease, even though leafhoppers also have been reported as possible vectors. Hegab and El-Zohairy (1986) described the ability of a spittlebug, Philaenus spumarius (L.) (Homoptera: Cercopidae) and a leafhopper, Artianus interstitialis (Germar) (Homoptera: Cicadellidae), in transmitting apple proliferation from infected celery to apple seedlings and from infected to healthy celery. Another leafhopper, Fieberiella florii Stål (Homoptera: Cicadellidae), has been implicated in unconfirmed reports as a vector of AP in Germany (Krczal et al. 1988).

{

"entities": [

{

"type": "Disease",

"name": "apple proliferation"

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{

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"name": "psyllids"

},

{

"type": "Insect vector",

"name": "leafhoppers"

},

{

"type": "Insect vector",

"name": "Philaenus spumarius"

},

{

"type": "Insect vector",

"name": "Artianus interstitialis"

},

{

"type": "Insect vector",

"name": "Fieberiella florii"

},

{

"type": "Host plant",

"name": "celery"

},

{

"type": "Host plant",

"name": "apple seedlings"

},

{

"type": "Geographic location",

"name": "Germany"

}

],

"relationships": [

{

"type": "Is vectored by",

"arguments": [

{

"type": "Disease",

"name": "apple proliferation"

},

{

"type": "Insect vector",

"name": "psyllids"

}

]

},

{

"type": "Is vectored by",

"arguments": [

{

"type": "Disease",

"name": "apple proliferation"

},

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"type": "Insect vector",

"name": "leafhoppers"

}

]

},

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"name": "apple proliferation"

},

{

"type": "Insect vector",

"name": "Philaenus spumarius"

}

]

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"arguments": [

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},

{

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"name": "Artianus interstitialis"

}

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"type": "Is vectored by",

"arguments": [

{

"type": "Disease",

"name": "apple proliferation"

},

{

"type": "Insect vector",

"name": "Fieberiella florii"

}

]

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"arguments": [

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"name": "apple proliferation"

},

{

"type": "Host plant",

"name": "celery"

}

]

},

{

"type": "Affects",

"arguments": [

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"type": "Disease",

"name": "apple proliferation"

},

{

"type": "Host plant",

"name": "apple seedlings"

}

]

},

{

"type": "Located in",

"arguments": [

{

"type": "Insect vector",

"name": "Fieberiella florii"

},

{

"type": "Geographic location",

"name": "Germany"

}

]

}

]

}

## Modality

One more instruction: the relationship must be extracted with a modality that indicates if the relationship is described in the text as either "certain", "unsure", "negated". The modality value of the relationship will be in json style.

{

"entities": [

{

"type": "Disease",

"name": "apple proliferation"

},

{

"type": "Insect vector",

"name": "psyllids"

},

{

"type": "Insect vector",

"name": "leafhoppers"

},

{

"type": "Insect vector",

"name": "Philaenus spumarius"

},

{

"type": "Insect vector",

"name": "Artianus interstitialis"

},

{

"type": "Insect vector",

"name": "Fieberiella florii"

},

{

"type": "Host plant",

"name": "celery"

},

{

"type": "Host plant",

"name": "apple seedlings"

},

{

"type": "Geographic location",

"name": "Germany"

}

],

"relationships": [

{

"type": "Is vectored by",

"arguments": [

{

"type": "Disease",

"name": "apple proliferation"

},

{

"type": "Insect vector",

"name": "psyllids"

}

],

"modality": "certain"

},

{

"type": "Is vectored by",

"arguments": [

{

"type": "Disease",

"name": "apple proliferation"

},

{

"type": "Insect vector",

"name": "leafhoppers"

}

],

"modality": "unsure"

},

{

"type": "Is vectored by",

"arguments": [

{

"type": "Disease",

"name": "apple proliferation"

},

{

"type": "Insect vector",

"name": "Philaenus spumarius"

}

],

"modality": "certain"

},

{

"type": "Is vectored by",

"arguments": [

{

"type": "Disease",

"name": "apple proliferation"

},

{

"type": "Insect vector",

"name": "Artianus interstitialis"

}

],

"modality": "certain"

},

{

"type": "Is vectored by",

"arguments": [

{

"type": "Disease",

"name": "apple proliferation"

},

{

"type": "Insect vector",

"name": "Fieberiella florii"

}

],

"modality": "unsure"

},

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"type": "Affects",

"arguments": [

{

"type": "Disease",

"name": "apple proliferation"

},

{

"type": "Host plant",

"name": "celery"

}

],

"modality": "certain"

},

{

"type": "Affects",

"arguments": [

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"type": "Disease",

"name": "apple proliferation"

},

{

"type": "Host plant",

"name": "apple seedlings"

}

],

"modality": "certain"

},

{

"type": "Located in",

"arguments": [

{

"type": "Insect vector",

"name": "Fieberiella florii"

},

{

"type": "Geographic location",

"name": "Germany"

}

],

"modality": "certain"

}

]

}

# Researchers use science of light to reduce pesticides used to protect crops from pests and diseases

Experts from two Midlands universities are launching a new project to develop a photonic ‘nose’ to monitor crops for pests and plant diseases.

Aston University has partnered with Harper Adams University to research and develop technology that uses light to monitor crop health.

According to the Food and Agriculture Organization of the United Nations, up to 40 percent of global crop production is lost to pests every year. Every year, plant diseases cost the global economy more than $220 billion and invasive insects at least $70 billion.

The research in the Midlands will use strawberries to test the new technology. The fruit is worth £350 million to the UK economy, but it is vulnerable to potato aphid, which has the potential to wipe out an annual crop.

Crops are currently treated with pesticides, but the environmental burden is increasing pressure to find alternatives.

One method is to use Integrated Pest Management (IPM) to create an early warning system. It monitors plants for insect and disease formation rather than spraying plants with chemicals, but so far it has proven unreliable and expensive.

The new project uses recent advances in photonics technology that can analyze low levels of volatile organic compounds (VOCs) emitted by plants, which is an indicator of their health. This is coupled with machine learning hardware, making it practical to use artificial intelligence in commercial environments. Professor David Webb of the Aston Institute of Photonic Technologies (AIPT) says that “better monitoring technologies for invertebrate pests and plant diseases will significantly help reduce crop losses.”

“However, most electronic noses use electrochemical sensors, which suffer from sensitivity issues, sensor bias/aging effects, and a lack of specificity.”

“We plan to address this by building on the rapidly evolving technology of photonics — the science of light — while collaborating with scientists in other disciplines.”

The 12-month project will receive £200,000 from the Biotechnology and Biological Sciences Research Council (BBSRC) and the Natural Environment Research Council. The grant is the maximum amount of their molecules given to the landscape project, funding interdisciplinary solutions to ‘real’ challenges.

dr. Joe Roberts of Harper Adams University says that “with the expected increase in the world’s population, there will be increasing pressure on the agricultural sector to achieve higher crop yields.”

“Reducing crop losses within existing production systems will improve food security without increasing resource use.”

“We plan to establish an interdisciplinary community of agricultural science, optical sensing and machine learning experts to develop new plant health monitoring platforms that improve agricultural production through localized monitoring of pests and diseases. to detect hotspots.”

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{

"type": "Host plant",

"name": "strawberries"

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{

"type": "Geographic location",

"name": "Midlands"

},

{

"type": "Geographic location",

"name": "UK"

},

{

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"name": "Aston University"

},

{

"type": "Organization",

"name": "Harper Adams University"

},

{

"type": "Organization",

"name": "Food and Agriculture Organization of the United Nations"

},

{

"type": "Organization",

"name": "Biotechnology and Biological Sciences Research Council (BBSRC)"

},

{

"type": "Organization",

"name": "Natural Environment Research Council"

},

{

"type": "Person",

"name": "Professor David Webb"

},

{

"type": "Person",

"name": "Dr. Joe Roberts"

},

{

"type": "Organization",

"name": "Aston Institute of Photonic Technologies (AIPT)"

}

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"type": "Insect vector",

"name": "potato aphid"

},

{

"type": "Geographic location",

"name": "UK"

}

],

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{

"type": "Located in",

"arguments": [

{

"type": "Organization",

"name": "Aston University"

},

{

"type": "Geographic location",

"name": "Midlands"

}

],

"modality": "certain"

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{

"type": "Located in",

"arguments": [

{

"type": "Organization",

"name": "Harper Adams University"

},

{

"type": "Geographic location",

"name": "Midlands"

}

],

"modality": "certain"

}

]

}

*A décomposé les mentions de lieux. A ajouté des types organization et person sans instruction.*

# Xylella, the use of biosensors allows to find the bacterium before it acts - Dissapore

A group of researchers is using electronic biosensors to find the Xylella bacterium before its effects are visible.

The use of electronic **biosensors** could help detect a single **Xylella** bacterium quickly, even earlier that it acts and that its effects actually become visible, in such a way as to allow much more effective contrast interventions: this, in a nutshell, is the objective of the research of the Institute for the Sustainable Protection of Plants (Cnr-Ipsp) and the Institute of Photonics and Nanotechnology (Cnr-Ifn) of the National Research Council, in collaboration with the Departments of Chemistry, Pharmacy-Drug Sciences and Physics of the University of Bari, with the contribution of Agritest.

As the scientists themselves explain, in fact, the ultrasensitive detection of Xylella has so far made use of molecular detection tests that point to the DNA of the bacterium itself as a target: the use of this type of analysis, however, necessarily involves the use of laboratory equipment and infrastructure together with analysis times of at least three hours. "The innovative electronic platform proposed by the team of researchers from Bari would instead allow the detection of a single bacterium in just 30 minutes directly in the field" explains **Luisa Torsi,** full professor of analytical chemistry at the University of Bari and vice president of the Scientific Council of the Cnr, which coordinated the research.

In other words, identifying the bacterium early and then implementing the appropriate containment measures seems to represent a concrete method for slowing down its progress. “We need rapid and reliable tools to diagnose and intervene early trying to stop the disease, for which no cures capable of healing infected plants have so far been found”.” explained in this regard **Donato Boscia,** head of the Bari office of the Institute for the Sustainable Protection of Plants (Cnr-Ipsp). At the same time, we remind you that 22 million euros were allocated this summer for the replanting of olive trees in the infected area.

{

"entities": [

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"type": "Plant pest",

"name": "Xylella"

},

{

"type": "Organization",

"name": "Institute for the Sustainable Protection of Plants (Cnr-Ipsp)"

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"name": "Institute of Photonics and Nanotechnology (Cnr-Ifn)"

},

{

"type": "Organization",

"name": "National Research Council"

},

{

"type": "Organization",

"name": "University of Bari"

},

{

"type": "Organization",

"name": "Agritest"

},

{

"type": "Person",

"name": "Luisa Torsi"

},

{

"type": "Person",

"name": "Donato Boscia"

},

{

"type": "Host plant",

"name": "olive trees"

}

],

"relationships": [

{

"type": "Causes",

"arguments": [

{

"type": "Plant pest",

"name": "Xylella"

},

{

"type": "Disease",

"name": "disease"

}

],

"modality": "certain"

},

{

"type": "Affects",

"arguments": [

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}

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},

{

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"name": "Institute for the Sustainable Protection of Plants (Cnr-Ipsp)"

},

{

"type": "Geographic location",

"name": "Bari"

}

],

"modality": "certain"

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{

"type": "Located in",

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{

"type": "Geographic location",

"name": "Bari"

}

],

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},

{

"type": "Located in",

"arguments": [

{

"type": "Organization",

"name": "University of Bari"

},

{

"type": "Geographic location",

"name": "Bari"

}

],

"modality": "certain"

}

]

}

Il manque des entités qui sont des arguments de relation.

The arguments of the relationships must be entities. Please correct.

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"name": "Xylella"

},

{

"type": "Organization",

"name": "Institute for the Sustainable Protection of Plants (Cnr-Ipsp)"

},

{

"type": "Organization",

"name": "Institute of Photonics and Nanotechnology (Cnr-Ifn)"

},

{

"type": "Organization",

"name": "National Research Council"

},

{

"type": "Organization",

"name": "University of Bari"

},

{

"type": "Organization",

"name": "Agritest"

},

{

"type": "Person",

"name": "Luisa Torsi"

},

{

"type": "Person",

"name": "Donato Boscia"

},

{

"type": "Host plant",

"name": "olive trees"

},

{

"type": "Geographic location",

"name": "Bari"

}

],

"relationships": [

{

"type": "Causes",

"arguments": [

{

"type": "Plant pest",

"name": "Xylella"

},

{

"type": "Disease",

"name": "disease"

}

],

"modality": "certain"

},

{

"type": "Affects",

"arguments": [

{

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{

"type": "Host plant",

"name": "olive trees"

}

],

"modality": "certain"

},

{

"type": "Located in",

"arguments": [

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## Mistral experiment

### Instructions:

1. **Entity Types**:
   * **Plant pest**: Include parasitic organisms, such as nematodes, fungi, or bacteria, that harm plants.
   * **Insect vector**: Include insects that transmit diseases or pathogens to plants.
   * **Host plant**: Include the specific plant species or types that are susceptible to the pest or disease.
   * **Disease**: Include specific plant diseases mentioned in the text.
   * **Geographic location**: Include specific names of places, regions, or countries.
2. **Relationship Types**:
   * **Located in**: Describes the geographical location where a plant pest is found.
     + Format: [pest] Located in [geographical location]
   * **Causes**: Indicates that a plant pest is responsible for causing a particular disease.
     + Format: [pest] Causes [disease]
   * **Affects**: Indicates that a disease affects a plant.
     + Format: [disease] Affects [host plant]
   * **Has been found on**: Describes instances where a plant pest has been detected on a specific host plant.
     + Format: [pest] Have been found on [host plant]
   * **Is vectored by**: Describes instances where a plant pest is transmitted or carried by a specific insect vector.
     + Format: [pest] Is vectored by [insect vector]
3. **Modality**:
   * The relationship must be extracted with a modality that indicates if the relationship is described in the text as either "certain," "unsure," or "negated."
   * The modality value of the relationship will be in JSON style.

all entity names must be specific. This is important. Please correct.

Pas fait, a perdu l’entité Disease, mais conservé les relations avec Disease !

## Citation

**Mistral**

1. **References**:
   * Include the citation (reference) for each relationship when it is available in the text.
   * If no reference is provided, the field can be omitted.
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Nul. ChatGPT bien meilleur.

# An odorant binding protein mediates Bactrocera dorsalis olfactory sensitivity to host plant volatiles and male attractant compounds

Odorant-binding proteins (OBPs) are believed to play critical roles in host-seeking behavior. However, little attention was paid to its different func…

Odorant-binding proteins (OBPs) are believed to play critical roles in host-seeking behavior. However, little attention was paid to its different functions in male and female. The antenna-specific OBP gene from Bactrocera dorsalis, BdorOBP13, was cloned and its expression profile was examined. The results showed that BdorOBP13 was exclusively expressed in male and female adults, which exhibited a high transcript level in antennae. After injection of BdorOBP13 dsRNA, its transcript level in males and females decreased significantly. Electrophysiological responses of RNAi-injected flies to, methyl eugenol (male attractant) and γ-octalactone (female attractant) decreased significantly. However, no significant changes in the electrophysiological response were observed in RNAi-injected flies to benzothiazole, (+),dipentene, and ethyl tiglate. The behavioral bioassay showed that males treated with RNAi significantly reduced their preference to methyl eugenol, while RNAi-injected females showed a significantly lower preference to γ-octalactone, suggesting that BdorOBP13 may have different functions between males and females: it may be involved in the detection of methyl eugenol in males but is involved in the detection of γ-octalactone in females. These findings improve our understanding of insect OBPs and their roles in insect chemosensation, which may provide us with new molecular targets in the management of B. dorsalis.

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}

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}

N’importe quoi, comme ChatGPT.

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