Prioritization of pests of higher phytosanitary risk in Brazil

Structured criteria to inform institutional decision-making

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Multicriteria prioritization based on stakeholders’ nominations strengthens and drives both regulatory and research plant health actions and decision-making.
Objectives:

1) Identify priority/emerging threats to be managed by regulatory and research efforts at national level;

1) Provide guidance to the prioritization of requests for registration of products or pest control technologies;

Method:

Participatory identification of alternatives

Analytic Hierarchy Process (AHP)
Preliminary list:

653 pests with “risk perception” listed based on:

i) indications of sectorial chambers and private sector stakeholders;

ii) list of regulated pests (20);

iii) scientific research priorities (Embrapa);

iv) pests affecting crops without sufficient phytosanitary support (“Minor Crops”).
Hierarchy: 5 dimensions and 19 criteria

1) Pest biology
2) Pest control
3) Direct impacts
4) Indirect impacts
5) Pest regulation

Final list:

83 pests sorted in three risk categories (Very High, High and Medium)

Risk categories defined by k-means clustering.
Risk category

**VERY HIGH**

- *Amaranthus palmeri* (weed)
- *Bactrocera carambolae* (insect)
- *Bemisia tabaci* (insect)
- *Botrytis cinerea* (fungus)
- *Candidatus Liberibacter asiaticus* (bacteria)
- *Ceratitis capitata* (insect)
- *Helicoverpa armigera* (insect)
- *Ralstonia solanacearum* raça 2 (bacteria)
- *Schizotetranychus hindustanicus* (insect)
- *Spodoptera frugiperda* (insect)
- *Tetranychus urticae* (insect)
- *Xanthomonas campestris pv. viticola* (bacteria)
- *Xanthomonas citri* (bacteria)
Outcomes:

1) Provides a very good result to reevaluate the list of regulated pests (adding or removing);

1) Can show the necessity of redimension the efforts applied to some regulated pests;
Thank You

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