International Seed Federation
Seed is Life

ISF's Regulated Pest List Database

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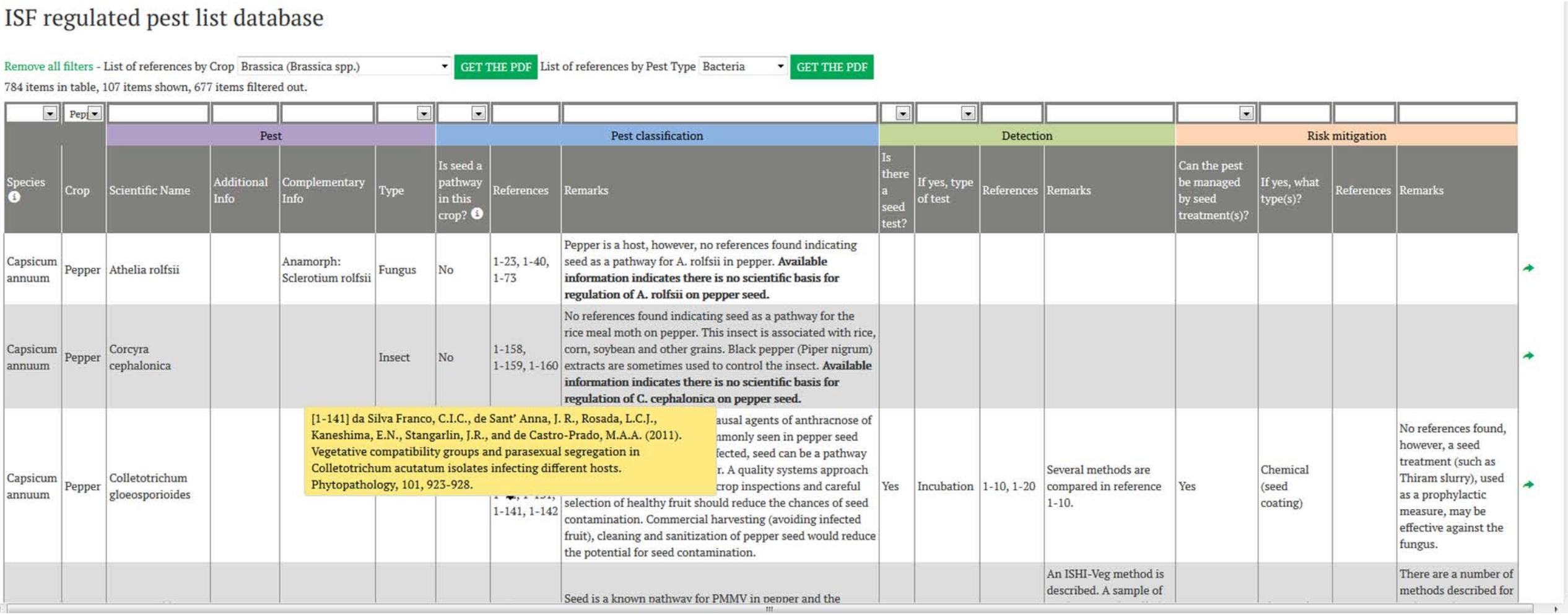
ISF's Regulated Pest List Initiative

The Regulated Pest List Initiative

Facilitate the harmonization of phytosanitary requirements for seed

- by developing a database of information on regulated pests of internationally traded seed species, based on
  - a scientific assessment of whether they are a pest risk
  - the experience of the seed industry in managing this risk

The Regulated Pest List Database



ISF regulated pest list database

Remove all filters - List of references by Crop Brassica (Brassica spp.) GET THE PDF List of references by Pest Type Bacteria GET THE PDF

784 items in table, 107 items shown, 677 items filtered out.

		Pest				Pest classification			Detection				Risk mitigation			
Species	Crop	Scientific Name	Additional Info	Complementary Info	Type	Is seed a pathway in this crop?	References	Remarks	Is there a seed test?	If yes, type of test	References	Remarks	Can the pest be managed by seed treatment(s)?	If yes, what type(s)?	References	Remarks
Capsicum annuum	Pepper	Athelia rolfsii		Anamorph: Sclerotium rolfsii	Fungus	No	1-23, 1-40, 1-73	Pepper is a host, however, no references found indicating seed as a pathway for A. rolfsii in pepper. **Available information indicates there is no scientific basis for regulation of A. rolfsii on pepper seed.**								
Capsicum annuum	Pepper	Corcyra cephalonica			Insect	No	1-158, 1-159, 1-160	No references found indicating seed as a pathway for the rice meal moth on pepper. This insect is associated with rice, corn, soybean and other grains. Black pepper (Piper nigrum) extracts are sometimes used to control the insect. **Available information indicates there is no scientific basis for regulation of C. cephalonica on pepper seed.**								
Capsicum annuum	Pepper	Colletotrichum gloeosporioides					1-141, 1-142	ausal agents of anthracnose of mmonly seen in pepper seed fected, seed can be a pathway r. A quality systems approach crop inspections and careful selection of healthy fruit should reduce the chances of seed contamination. Commercial harvesting (avoiding infected fruit), cleaning and sanitization of pepper seed would reduce the potential for seed contamination.	Yes	Incubation	1-10, 1-20	Several methods are compared in reference 1-10.	Yes	Chemical (seed coating)		No references found, however, a seed treatment (such as Thiram slurry), used as a prophylactic measure, may be effective against the fungus.
								Seed is a known pathway for PMMV in pepper and the				An ISHI-Veg method is described. A sample of				There are a number of methods described for

[1-141] da Silva Franco, C.I.C., de Sant' Anna, J. R., Rosada, L.C.J., Kaneshima, E.N., Stangarlin, J.R., and de Castro-Prado, M.A.A. (2011). Vegetative compatibility groups and parasexual segregation in Colletotrichum acutatum isolates infecting different hosts. Phytopathology, 101, 923-928.

https://pestlist.worldseed.org/public/pestlist.jsp

Regulated Pests

ISPM 19 - Guidelines on lists of regulated pests

- Currently regulated pests for which phytosanitary measures may be taken
- Information associated with the listing includes the pest's scientific name and the pest category
- Specific lists of regulated pests by commodity
- Updating the lists

- From national database of phytosanitary regulations maintained by some NPPOs, and
- Lists of regulated pests for major seed species traded internationally taken from company seed import requirement databases
- Updated every 2 years

When is seed a pest risk?

ISF Regulated Pest List Database

Seed is a pathway, i.e. the means that allows the entry or spread of a pest

Seeds as pathways (ISPM 38)

Category 1a:	seed-transmitted pests carried by the seed internally or externally and directly infest the host plant growing from the seed
Category 1b:	non-seed-transmitted pests carried by the seed internally or externally and are transferred to the environment (e.g. water, soil) and then infest a host plant under natural conditions
Category 1c:	pests carried by the seed, internally or externally, that do not transfer to a host plant under natural conditions
Category 2:	contaminating pests present in a seed lot (including seeds of plants as pests)

Is seed a pathway?

- No, if seed is not the pathway for entry or spread
  - The pest may occur on the crop and may cause disease but no evidence that seed is a pathway
- Yes, if seed is a pathway for entry or spread
  - These are seed borne or seed transmitted pests that might be considered for regulation, if considered to be a potential quarantine pest in the PRA
- Not a host, when the crop in question is not a host
- Yes, but crop is not a host, if seed is the pathway but the crop in question is not a host
  - Contaminant associated with the seed but the organism does not infect the host
- Pathway not proven, when pathway is not verified or not proven, if the evidence is doubtful or if there is conflicting evidence
  - Transmission of pests has been observed or confirmed to occur under natural conditions or under experimental conditions (e.g. in a laboratory or a growth chamber), and there is no evidence that it can also occur under natural conditions.

References: the science behind the assessment

- “Positive” reference: Literature that can be accessed and evaluated on its merits
  - Information clear in supporting or refuting whether seed is a pathway
- “Negative” reference: Sources of information that does not list the host-pathogen combination in question
  - When search does not uncover any positive references: “No information has been found ....”
- Information found on the internet or in disease datasheets, compendiums, etc.
  - Used as a “lead” into the literature
- Original articles traced and obtained
  - Evaluated for the data presented, scientific rigour and interpretation
- "Old school" searching
  - Find the most recent scientific publication and use the reference list to lead back into the literature

References: how much information is enough?

Seed Species	Regulated pests (no.)	References cited (no.)
Bean	97	413
Brassica	118	380
Carrot	92	259
Cucumber	90	205
Lettuce	64	156
Melon	69	178
Onion	94	183
Pepper	107	256
Spinach	38	105
Squash & pumpkin	54	208
Tomato	178	579
Watermelon	58	212

Standard quality management practices

Scientific assessment overlaid with hands-on experience gained during seed production and from applying quality management systems

Seed on arrival following basic cleaning off-shore

Shriveled and small seed removed

Doubles, discoloured & inert material cleaned

Seed checked again for light seed & inert material

Seed uniform in shape and size; with a developed embryo, good seed coat

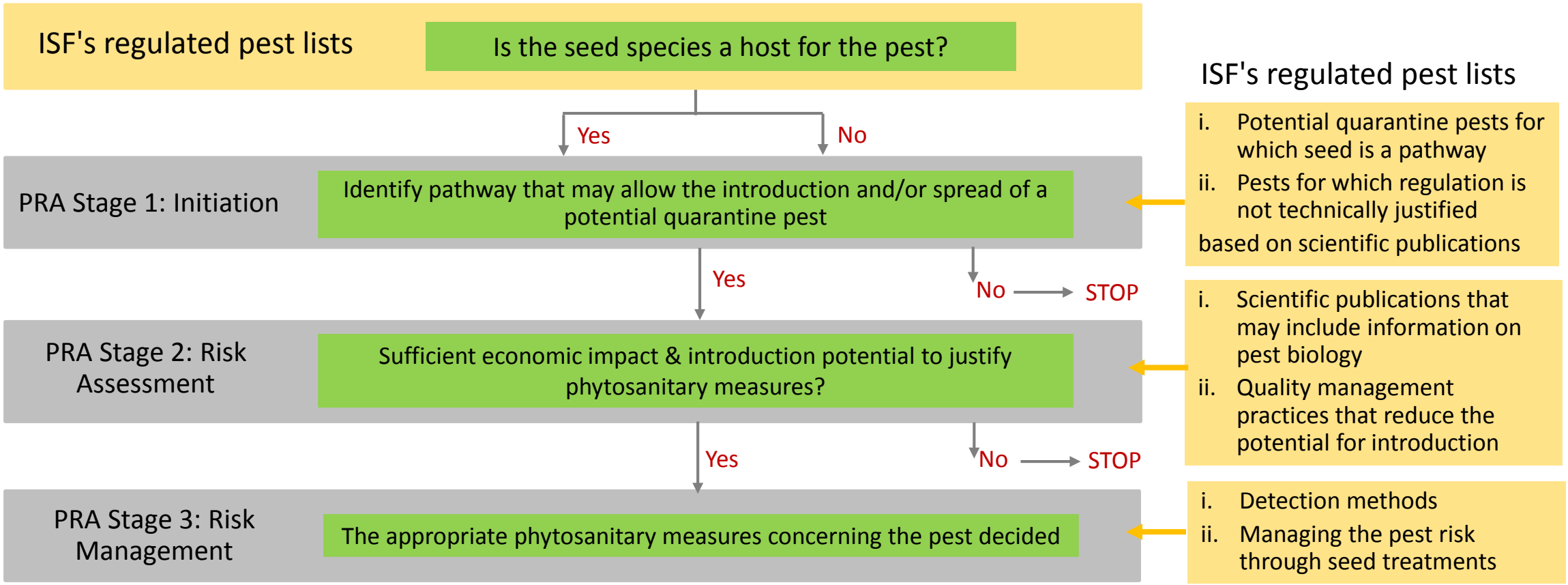
Detection methods and risk mitigation options

- Only for regulated pests classified as
  - 'yes, seed is a pathway'
  - 'pathway not proven' and
  - 'yes, seed is a pathway but crop is not a host'
- No information for regulated pests classified as
  - 'no' and 'not a host'

What the database says about regulated pests

Seed Species	Regulated pests (no.)	References cited (no.)	Is seed a pathway? (no.)			
			Yes	Pathway not proven	No	Not a host
Bean	97	413	23	14	41	19
Brassica	118	380	11	12	52	43
Carrot	92	259	4	7	43	38
Cucumber	90	205	4	8	50	28
Lettuce	64	156	3	10	36	15
Melon	69	178	6	14	33	16
Onion	94	183	7	12	43	32
Pepper	107	256	9	19	45	34
Spinach	38	105	8	3	13	13
Squash & pumpkin	54	208	5	8	29	12
Tomato	178	579	14	35	89	40
Watermelon	58	212	4	7	31	16
		Average (%)	9	14	48	29

ISF's regulated pest lists and PRAs



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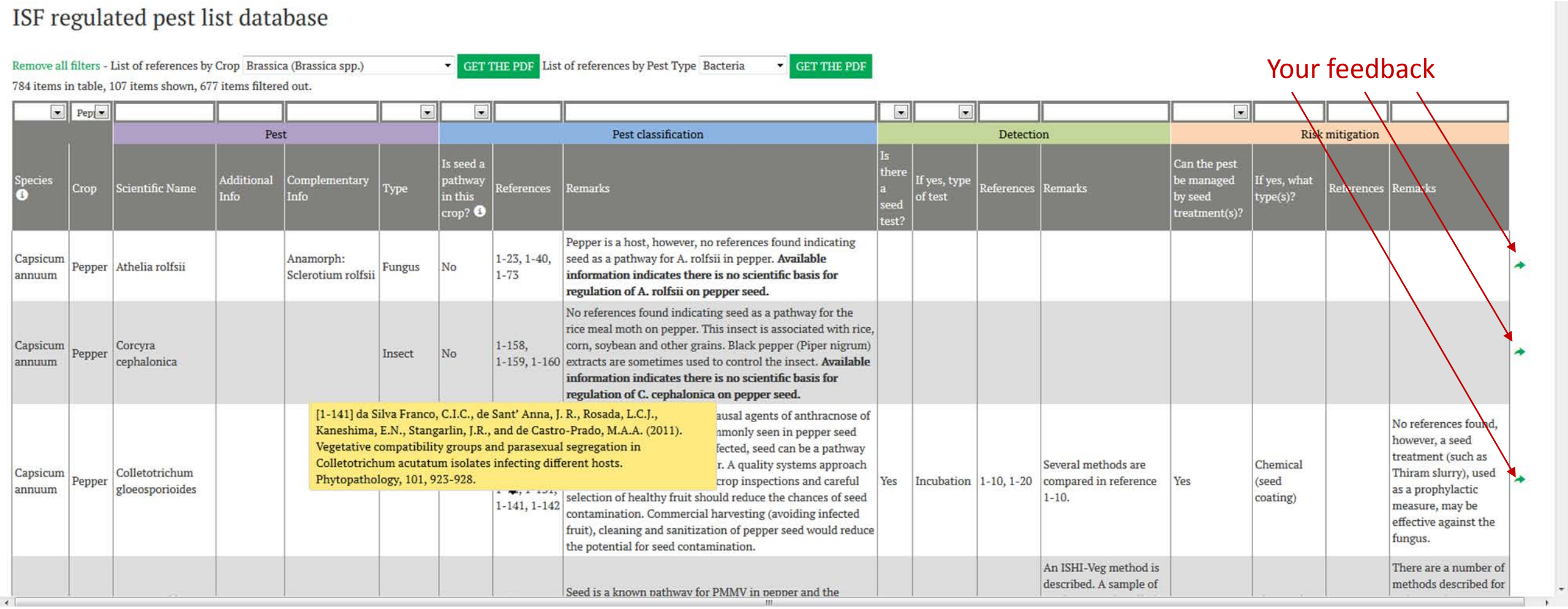

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Your feedback

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Seed is Life

ISF's Regulated Pest List Database
Its potential benefits

- Quick reference for companies to see what is available in terms of risk mitigation (seed tests and seed treatments)
- Cost savings directly to companies with fewer seed tests for Phyto ADs
- A tool that allows the industry to respond to new reports regarding seed as a pathway
- Establish the credibility of the seed industry as a stakeholder
- Eliminate irrelevant Phyto ADs
- Promote science based national regulations
- Work together with NPPOs in mutual trust and confidence to manage phytosanitary risks better

How ISF supports phytosanitary/regulatory policy and facilitates safe global seed movement

Recognising the sovereign right of countries to utilise phytosanitary regulations on the international movement of seed

- actively finding mechanisms that ensure the safe movement of seeds in international trade in order to protect agriculture, human health and the environment
- promoting science-based national regulations
- working with other stakeholders (academic community, NPPOs) in mutual trust and confidence to manage phytosanitary risks better
- establishing the credibility of the seed industry as a key stakeholder