

Assessment of the RNQP status

The blackleg disease on seed potatoes



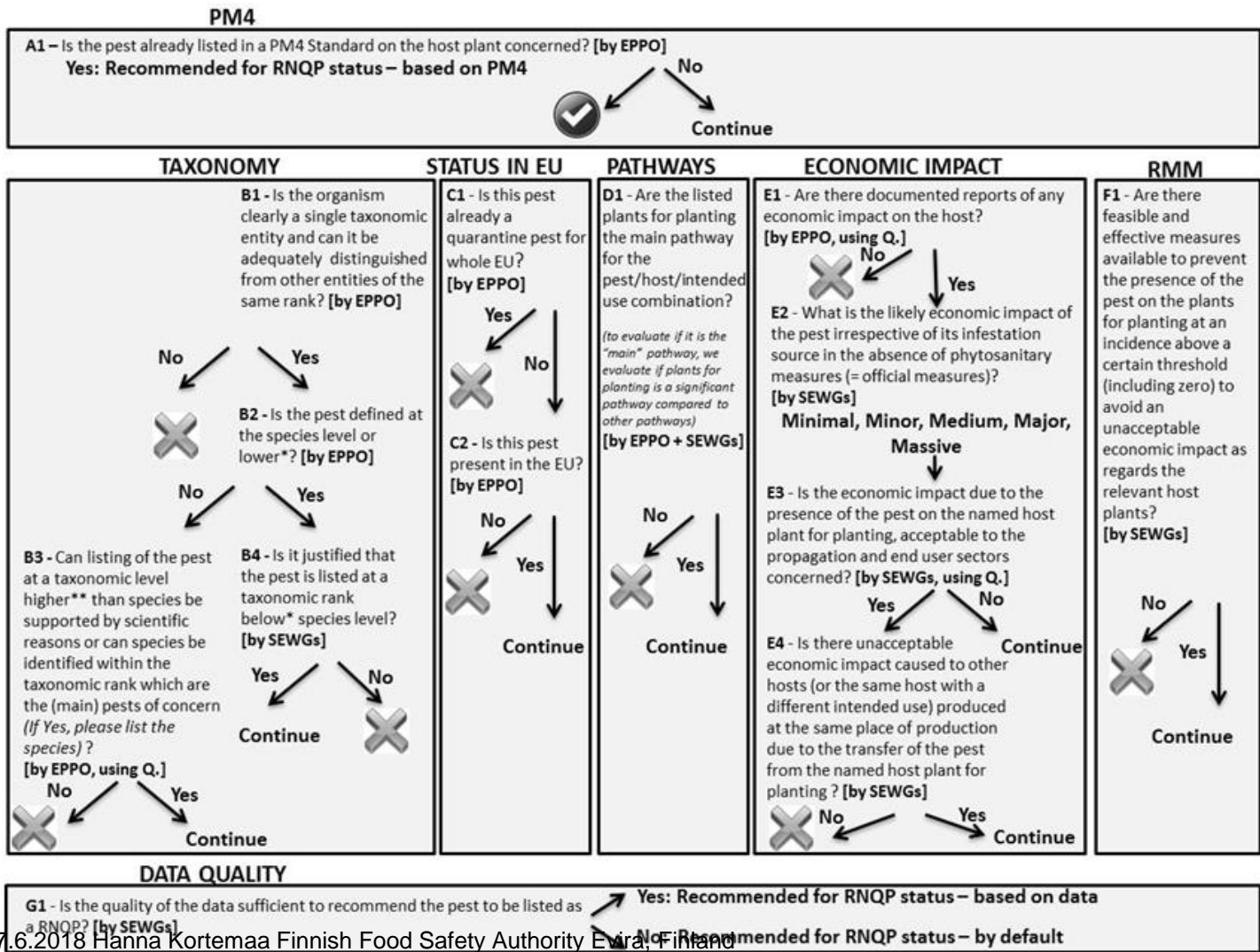
Regulated Non-Quarantine Pests

- Plants for planting
 - Prevent an unacceptable economic impact
 - Pests present in the area (no quarantine organisms)
 - Risk management measures
-
- European Union (EU) -> EPPO project
 - Aim to add RNQPs to the Plant Health Law
 - Pests listed in the EU Marketing Directives on reproductive material and some additional pest

Method of assessment

- Horizontal Expert Working Group developed the methodology
- EPPO send questionnaire to EU Plant Health organizations and EU stakeholders associations
- Sector Expert Working Groups evaluated pests
 - Initiation stage (naming candidates)
 - Categorisation (meet criteria or not)
 - Final assessment (recommendation of a list of RNQPs)

Flowchart of the RNQP assessment methodology



Blackleg



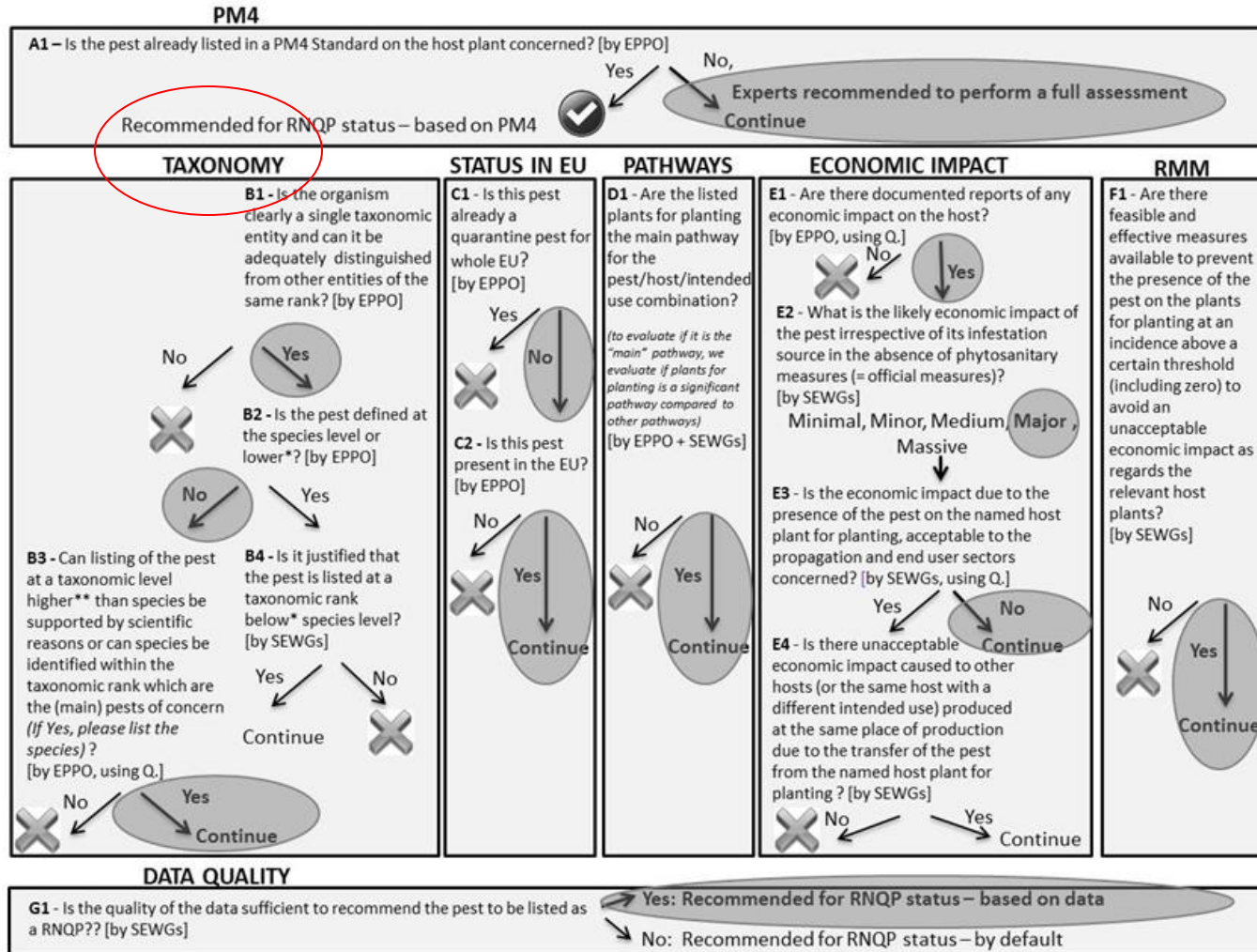
Bacterial species complex

- Blackleg symptoms
- Wet rot symptoms
- Species identification still in progress
- Cause similar damage
- Identification at genus level

Taxonomy

- Old name *Erwinia*
- *Pectobacterium atrosepticum*
- *Pectobacterium carotovorum* subsp. *carotovorum*
- *Pectobacterium carotovorum* subsp. *brasiliense*
- *Pectobacterium parmentiere* (= *P. wasabiae*)
- *Dickeya dianthicola*
- *Dickeya solani*
- *Dickeya chrysanthemi*
- *Dickeya dadantii*
- *Dickeya zeae*

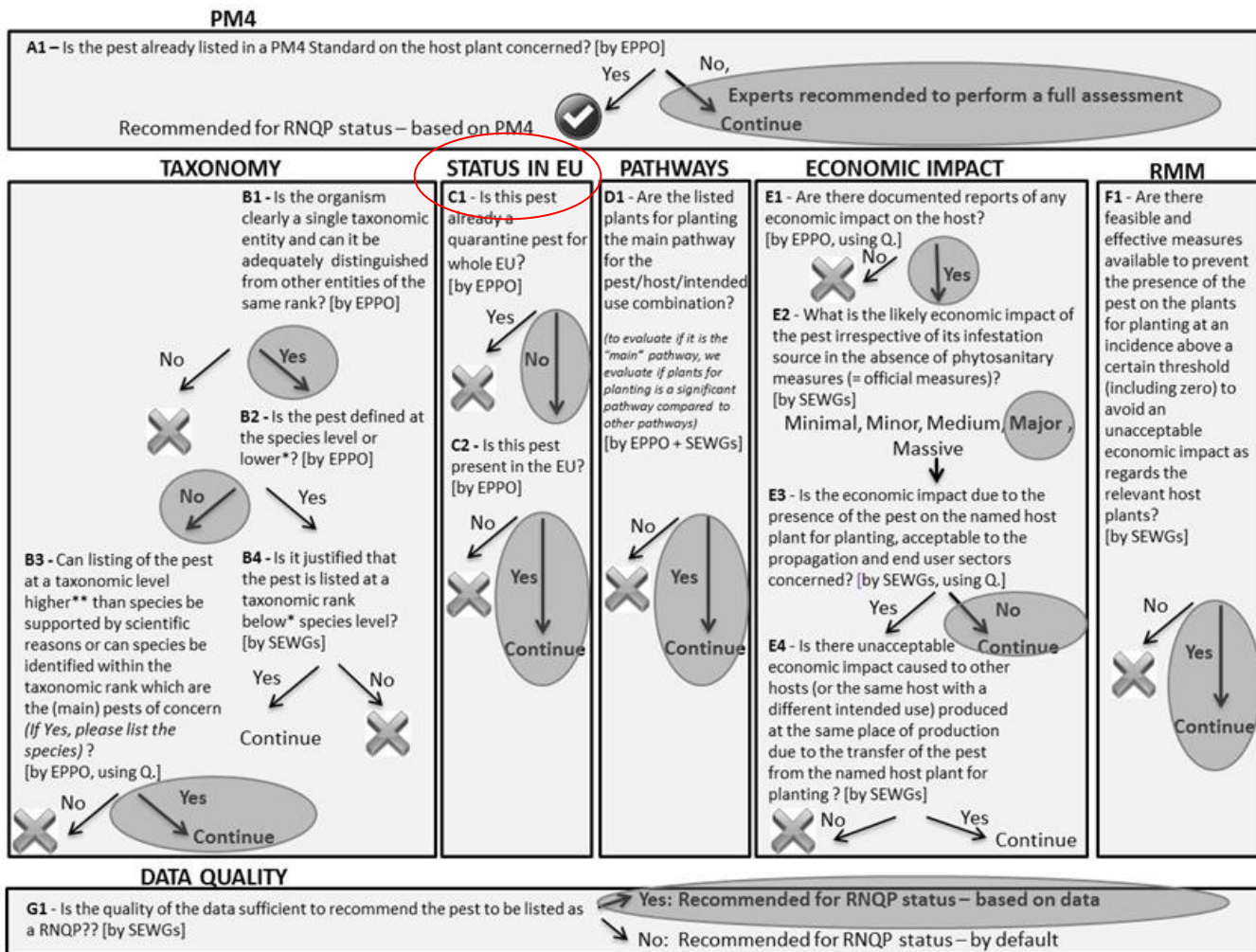
Flowchart of the methodology Blackleg disease on seed potatoes



Status in EU

- Not a quarantine organism
- *Pectobacterium* spp. and *Dickeya* spp. reported to be present in many EU countries

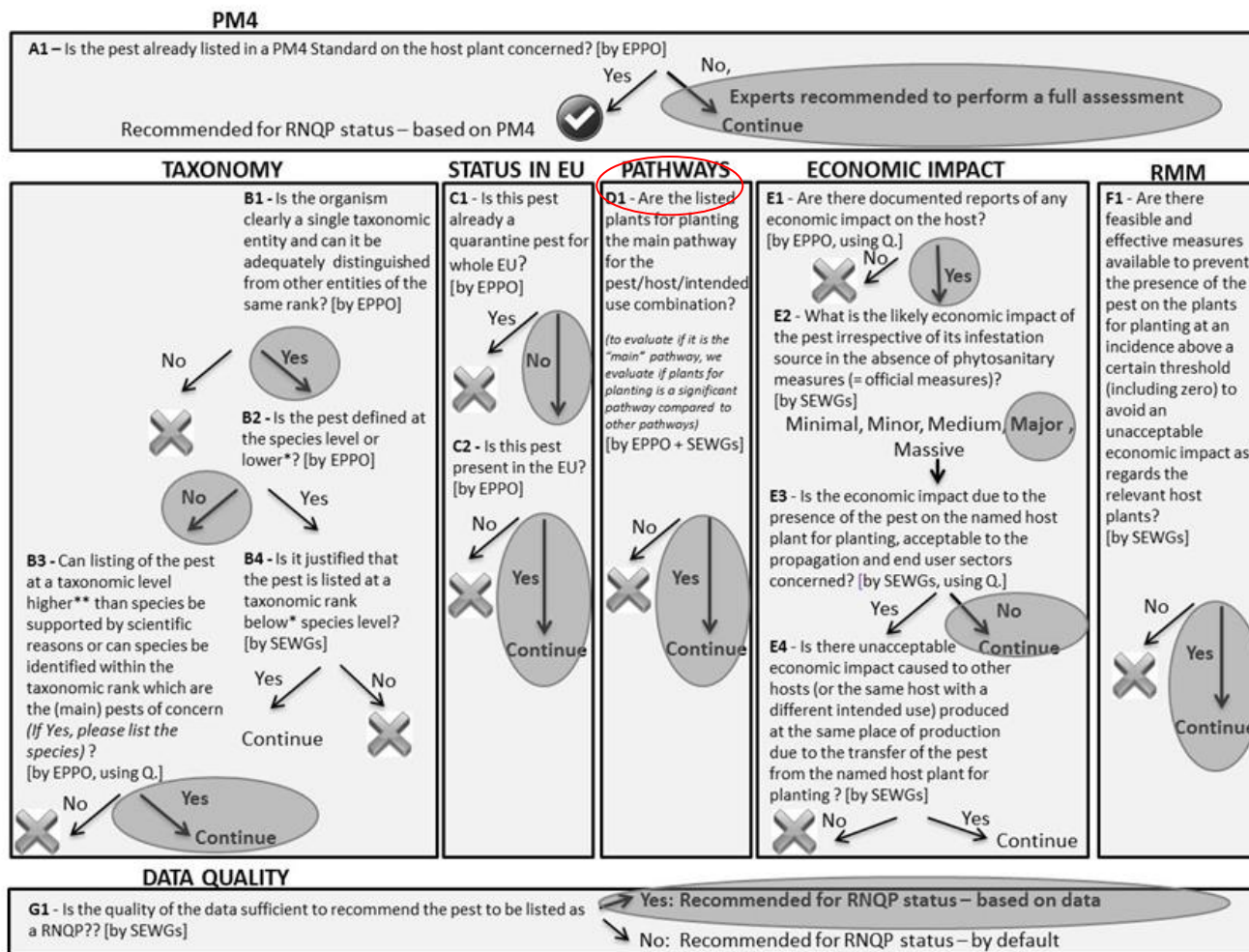
Flowchart of the methodology Blackleg disease on seed potatoes



Pathways

- Spread of *Dickeya* spp. and *Pectobacterium* spp. in seed potato fields takes place mainly via specific plants for planting (= latently infected seed tubers) rather than natural spread (soil, river water, other hosts etc.)

Flowchart of the methodology Blackleg disease on seed potatoes

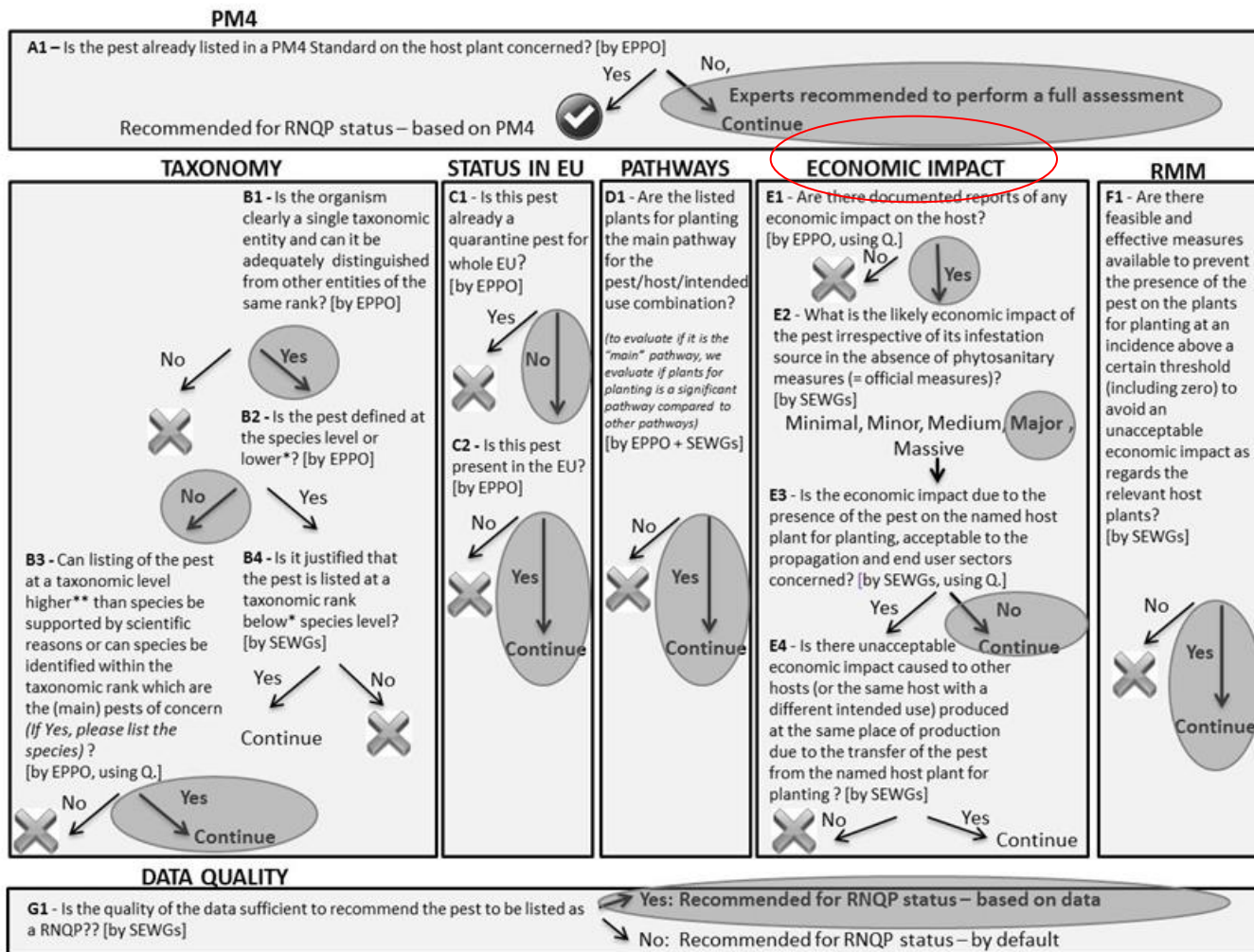


7.6.2018 Hanna Kortemaa Finnish Food Safety Authority Evira, Finland

Economic impact

- A lot of data of high disease incidences
- Yield reductions: Israel 30 %, Finland 50 %
- Downgrading or rejections during seed potato certification: the Netherlands losses 30 M € annually
- Sector Expert Working Group concluded that economic impact was 'Major'

Flowchart of the methodology Blackleg disease on seed potatoes



Risk management measures

Examples:

- Pest free areas, pest free production sites
- Isolation distance, buffer zone
- Inspection of the facilities, fields, consignments, lots
- Seed or crop treatment (chemical, physical, biological)
- Soil or growing media requirements
- Cultural practices
- Sampling and testing
- Resistance

EU Blackleg tolerances

(Commission Implementing Directive 2013/63/EU and 2014/21/EU)

- Pre-basic seed potato; derived from mother tubers free from *Pectobacterium* spp. and *Dickeya* spp. and plants shall be free from symptoms of blackleg
- Basic seed potatoes; on official inspection of the growing plants, the number affected by blackleg shall not exceed 1.0 %
- Certified seed potatoes; blackleg shall not exceed 4.0 %

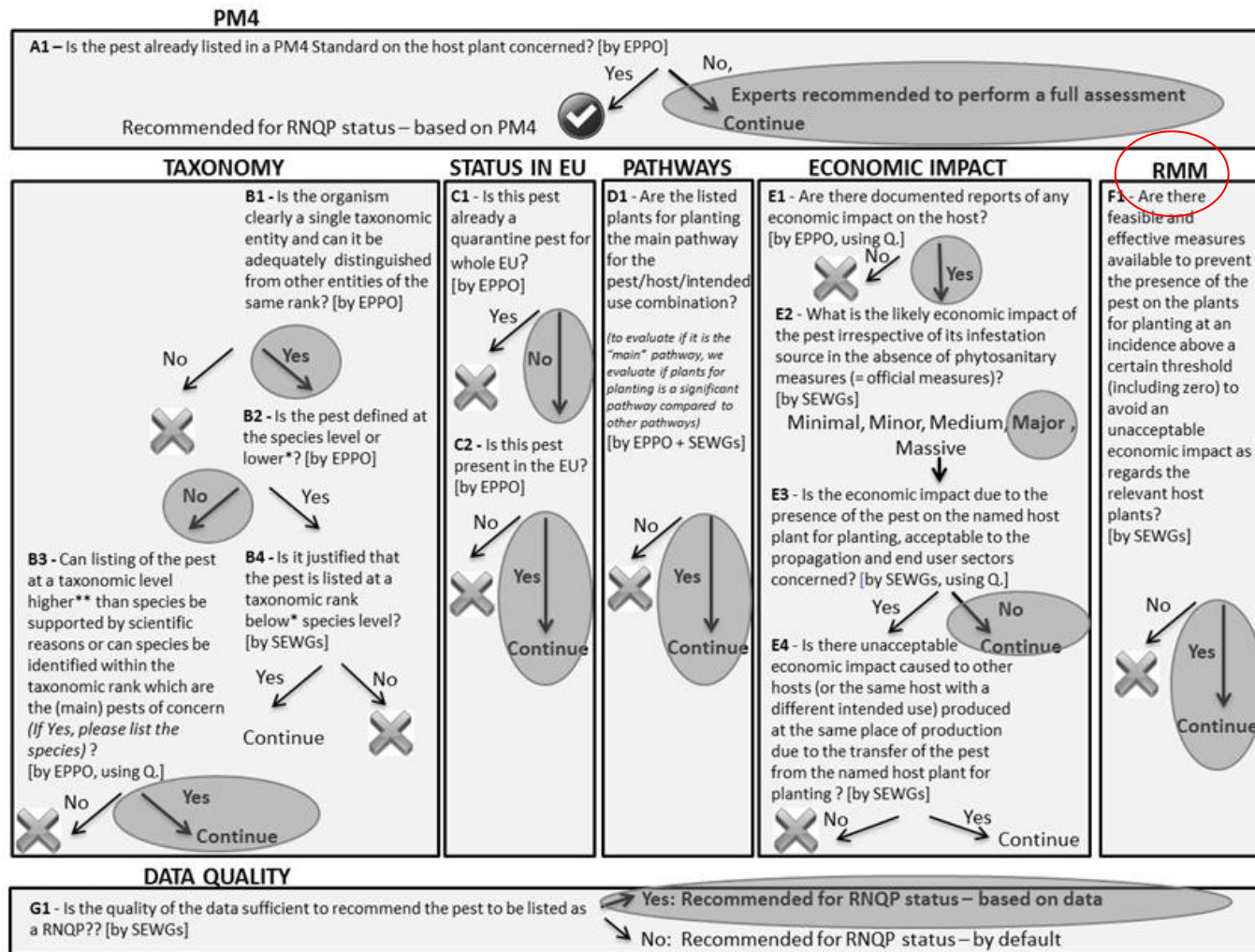
UNECE Seed Potato Standard Blackleg tolerances

UNECE Standard S-1 Seed Potatoes 2016 Edition:

Minimum conditions to be satisfied by the crop.
The proportion of growing plants affected by
blackleg shall not exceed:

Production of Pre-basic category seed, 0%
Production of Basic I class, 0.5% and Basic II 1%
Production of Certified I class seed 1.5% and
Certified II class 2%

Flowchart of the methodology Blackleg disease on seed potatoes



Data quality

- Recommendation to list *Pectobacterium* spp. and *Dickeya* spp. as RNQPs based on data
- Continue using thresholds of EU marketing directive of seed potato

Pests recommended for the RNQP Status

- **Blackleg** -> *Pectobacterium* and *Dickeya*;
- **Common scab** -> *Streptomyces* (listing at the genus level is appropriate, provided that the measures continue to be based on a tolerance for visual symptoms);
- **Black scurf** -> *Thanatephorus cucumeris*;
- **Powdery scab** -> *Spongospora subterranea* (based on visual inspection of tubers);
- **Silver scurf** -> *Helminthosporium solani* (but there is a question about the availability of effective risk management measures);
- **Dry rots** -> *Alternaria*, *Fusarium*, *Boeremia (Phoma)*, *Phytophthora infestans*, *Sclerotinia sclerotiorum*, *Sclerotinia minor*, *Helicobasidium brebissonii (Rhizoctonia crocorum)*;
- **Wet rots** -> *Athelia rolfsii (Sclerotium rolfsi)*, *Geotrichum candidum*, *Phytophthora erythroseptica*, *Phytophthora infestans*, *Pythium*, *Pectobacterium*, *Dickeya* ;
- **Viruses** -> *targeted viruses listed individually*:
 - *Potato leaf roll virus, Potato virus A, Potato virus M, Potato virus S, Potato virus X, Potato virus Y, Tomato spotted wilt virus*;
 - *Potato virus V, Potato mop-top virus, Alfalfa mosaic virus, Cucumber mosaic virus, Tobacco rattle virus, Tobacco mosaic virus, Potato aucuba mosaic virus, Tomato mosaic virus, Tomato black ring virus, Tobacco necrosis virus* (only for nuclear stock);
- **Potato stolbur mycoplasma** -> '*Candidatus Phytoplasma solani*';
- *Ditylenchus destructor*;

44 pest/host combinations evaluated for the seed potato sector

Additional pests evaluated:

- **Potato spindle tuber viroid** -> Recommended for the RNQP status - if the QP Status is changed. The SEWG is not competent to advise on whether the quarantine status of this organism should be changed, and is not recommending any such change.
- '**Candidatus Liberibacter solanacearum**' -> Recommended for the RNQP status - If haplotypes A and B are regulated as quarantine pests, the RNQP Status should then be restricted to European haplotypes C, D and E.

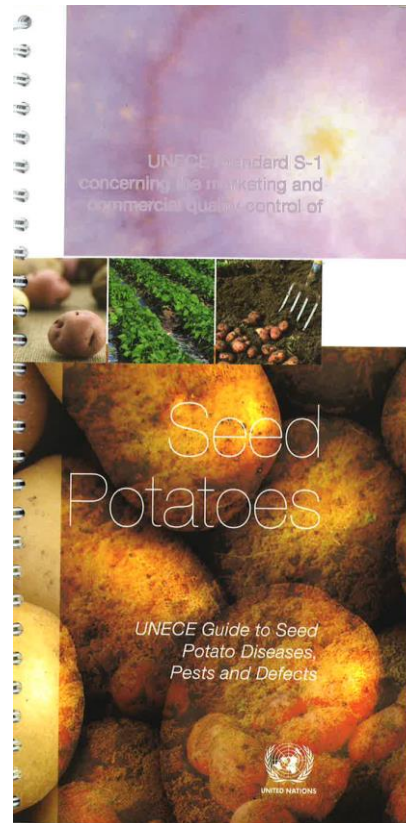
Pests disqualified:

- **Viruses & Viruses** (*mosaic symptoms and leaf roll virus together*)-> targeted viruses listed individually;
- **Helicoverpa armigera** (Seed potatoes not considered to be a significant pathway);

Revised RMM and/or thresholds proposed for:

- **Tomato spotted wilt virus** (zero tolerance based on symptom for all categories, except for nuclear stock where zero tolerance by testing or derived from mother plants tested);
- '**Candidatus Phytoplasma solani**' (Zero tolerance of symptoms in the growing crop);
- **Ditylenchus destructor** (Zero tolerance, on the basis of visual inspection of the tubers);
- **Potato spindle tuber viroid** (Zero tolerance for all categories);
- '**Candidatus Liberibacter solanacearum**' (Zero tolerance, based on symptoms, or inspection and testing);

UNECE Guide to Seed Potato Diseases, Pests and Defects





Thank You