

**APS Emerging Pathogens and Diseases Committee
Criteria for Pathogen Rating Exercises**

SCORE ONLY THE NUMBERED CRITERIA CATEGORIES

(USE INDIVIDUAL CRITERIA IN CONSIDERING THE SCORE)

Low =1 Medium =2 High =3 Not enough info = 0

(i.e. highest score represents a quality of a high threat pathogen)

1) Pathogen establishment in the U.S. is possible. Factors to Consider:

- a) Infection units (spores, mycelium, sclerotia, etc.) remain **viable** for a long period of time under natural conditions. (Low= less than one day, Med= less than 30 days, High = persists)
- b) There is a **natural** (wind, vectors, water, etc.) or **mechanical** (equipment, such as harvesters, sprayers, misters, airplanes crop dusters, etc.) **means of dissemination** within and among growing areas.
- c) The pathogen has a high infection efficiency. Low = Infection and establishment occurs under a narrow range of conditions; High= Infection and establishment occurs under a wide range of conditions).
- d) The pathogen has a high **reproductive potential** in the field
- e) The pathogen has numerous **alternative hosts**. (Increased risk with asymptomatic **hosts**).
- f) U.S. **germplasm** is particularly **susceptible** to the pathogen. (Low =low percentage of susceptible germplasm; High =Most or all germplasm susceptible).
- g) The pathogen's U.S. **germplasm** is densely and widely **distributed**. (Low= locally isolated; High= large acreage of monoculture)
- h) No effective or economical **control(s)** of the pathogen is **available**.
- i) Pathogen can survive intercrop periods over a wide range of conditions.

2) A pathway for entry exists. Factors to Consider:

- a) Material or commodities that can be infested/infected with the pathogen **arrive** at U.S. borders /ports **with frequency**. (Low=yearly or less; High= daily)
- b) Material or commodities that can be infested/infected with the pathogen can be **co-mingled** with non-contaminated commodity(-ies), during storage, transport, and /or processing.
- c) Material or commodities that can be infested/infected with the pathogen **arrives** at U.S. borders **in volume**, making (sampling/testing/detection) inspection difficult.
- d) Material or commodities that can be infested/infected with the pathogen is **distributed** to several locations.
- e) **No** method for rapid, reliable, and sensitive **detection** is available on entry.
- f) The pathogen can be **disseminated** by inanimate objects.

3) The risk of an intentional introduction of a pathogen is dependent upon these factors:

- a) The pathogen or its inoculum, or vector is Low =difficult; High= easy to **obtain**.
- b) The pathogen or its inoculum, or vector is Low =difficult; High= easy to **grow**.

- c) The pathogen or its inoculum, or vector is **Low =difficult; High= easy** to **handle**.
- d) The pathogen or its inoculum, or vector is **Low =difficult; High= easy** to **transport**.
- e) The pathogen or its inoculum, or vector is **Low=difficult; High= easy** to **deliver**.

4) The pathogen has significant social or psychological shock value. Factors to Consider:

- a) Pathogen presence can **create uncertainty** or affect markets, whether plants or animals.
- b) The pathogen produces a **toxin** or byproduct, actual or perceived, that **contaminates** or accumulates in **food/feed**.
- c) The pathogen can be **genetically altered** to threaten food/feed security.
- d) The pathogen can **affect natural resources, native plants** or ornamentals, and/or urban landscapes.

5) Pathogen establishment in the U.S. would have direct or trade-related economic effects on U.S. farmers, ranchers, or other agricultural producers. Factors to Consider:

- a) The **commodity** (-ies) affected has a **high yearly value of production**; (**Low= less than \$500M Med= \$1B High = \$5B or more**)
- b) Pathogen presence would adversely **affect the market** (raw, processed food/feed, animals).
- c) Pathogen establishment in the U.S. would **affect the economic well-being** of U.S. producers and/or consumers.
- d) Pathogen presence would **raise unit costs of production** (via yield losses and/or input cost increases) to lessen U.S. comparative advantage in the market. (**Low= less than 1% Med= 5% High = 10% or more**)
- e) The presence of the pathogen in the U.S. would **close off export markets** due to other countries' phytosanitary regulations.

6) Public costs of monitoring for, eradicating, or managing the pathogen in the U.S. Factors to Consider:

- a) The **probability of early detection** is low.
- b) The **time frame** for effective eradication is **long**. (**Low = days, Med= one crop cycle, High =more than one crop cycle or years**)
- c) The **costs** of the pathogen's **eradication** would be **high**. (**APHIS input needed**)
- d) The **costs of monitoring/detecting** the pathogen within U.S. borders would be **high**. (**APHIS input needed**)
- e) The **costs of managing** the pathogen population would be **high**. (Dollars/production unit /year)
- f) There is **insufficient knowledge** for producers **to** cost-effectively or successfully **manage** the pathogen.
- g) Producers and other affected parties do not have the **equipment** and/or **expertise** to deploy **controls** (e.g. chemical, biological, cultural practices).