

# Stakeholder comments

## Draft review of import conditions for cucurbitaceous crop seeds for sowing into Australia.

Comments submitted by: Plantum, the Netherlands

### ZGMMV

- In the publication by Kwon, virus was detected on seeds (fig 7A), however no negative seed batches were included to show that cross contamination or cross reactivity in a seed background can be excluded.
- As the primers used by Kwon are a 10.000.000 fold more sensitive than conventional primers. This level of detection might be beyond biological relevant levels from a seed transmission or seed pathway perspective.
- It is not clear on which literature reference the statement of seed transmission is based on. The reference made to Al-Dosary's paper published in 2014 is likely mistaken by Al-Dosary 2012. In this paper, Al-Dosary mentions seed, but did not describe how seed transmission did occur or was investigated. Furthermore from Al-Dosary's the data on alternative hosts for ZGMMV described is in contrast with the findings by Yoon et al., 2014. Furthermore, the symptoms described by Al-Dosary deviate from those described in other publications. This strengthens the need to review the value of this abstract versus the peer reviewed publication by f.e., Yoon et al, 2014. We consider therefor the statement that ZGMMV can occur in a wide range of climates insufficiently supported with the provided data.
- In the publication of Ryu et al.,( 2000) presence of the seed borne nature is claimed but the evidence is not traceable and cannot be judged. Also seed transmission is not shown.
- In the paper of Kwon et al., ( 2014).virus particles from seed extract were inoculated to *N. bentamiana* and infectivity was proven. However, these levels of virus might not pose a risk in the transmission from seed to seedling and no data is provided that shows seed transmission ZGMMV. As it is not proven that contaminated seed is indeed causing infected seedlings, the risk of establishment of ZGMMV and cause disease when present on seeds is therefor low.

### KGMMV

- In the publication by Kwon et al., 2014, virus was detected on seeds (fig 7A), however no negative seed batches were included to show that cross contamination or cross reactivity in a seed background can be excluded.
- As the primers used by Kwon for KGMMV are a 10.000.000 fold more sensitive than conventional primers. This level of detection might be beyond biological relevant levels from a seed transmission perspective.
- Daryono et al. (2005) cite Blancard et al. (1994) who report KGMMV is seed transmitted. A publication by Muthaiyan (2009), however, claims KGMMV is not seed transmitted, counteracting the publication of Daryono et al..
- Virus particles from seed extract were inoculated to *N.bentaminiana* and infectivity was proven. However, these levels of virus might not pose a risk in the transmission from seed to

seedling. It is not shown that transmission from seed to seedling is possible for KGMMV. We are referring to Pea Seed-borne Mosaic Virus where seed transmission is even strain dependent, as is the case for PSbMV (Roberts et al., 2003)

- The reference 'ICTVdBManagement 2006a' was not possible to find through the included link and could therefore not be discussed.

Added References: Muthaiyan, M.C. (2009). Principles and Practices of Plant Quarantine. Allied Publishers Pvt. Ltd. ISBN-13: 9788184244076.

**Phomopsis cucurbitae** also known as *Diaporthe melonis* is related to infection of melon fruit (Zhang 1999, Garibaldi 2011, EPPO 2002). This species is related to post-harvest decay of the fruit and less to infection of the plant as such. In Italy an outbreak was recorded in the summer of 2010 (Garibaldi). Authors claim that *Phomopsis cucurbitae* can be seed transmitted, this would have some implications for seed delivery to Australia. However, there was no data found in literature that confirms this statement except for one note in a fact sheet of the NC State University (Fact sheet). In the same sheet it is noted that there are no concerns about phytosanitary risks and quarantine issues as primary source of infection is unknown.

#### Our references

EPPO 2002 <https://gd.eppo.int/taxon/DIAPML>

Zhang j., Bruton b.d. and Biles C.L., Purification and characterisation of a prominent polygalacturonase isozyme produced by *Phomopsis cucurbitae* in decayed muskmelon fruit. 1999, Mycol. Res. 103: 1: 21±27

Garibaldi A., Bertetti D., Poli A., and Gullino M.L., First Report of Black Rot Caused by *Phomopsis cucurbitae* on Cantaloupe (*Cucumis melo*) in the Piedmont Region of Northern Italy Centre of Competence for the Innovation in the Agro-Environmental Sector, (AGROINNOVA) Via Leonardo da Vinci 44, 10095 Grugliasco, Italy. 2011. 95; 10: 1317.  
<https://doi.org/10.1094/PDIS-06-11-0481>

Fact sheet NC State University

[https://projects.ncsu.edu/project/cucurbitkeys/key/Diagnosing%20Postharvest%20Diseases%20of%20Cantaloupe/Media/Html/Phomopsis\\_fruit\\_rot.htm](https://projects.ncsu.edu/project/cucurbitkeys/key/Diagnosing%20Postharvest%20Diseases%20of%20Cantaloupe/Media/Html/Phomopsis_fruit_rot.htm)

---

**ZGMMV** should in our view not be regulated based on assumed risks it poses for Australia. The organism has shown to be of limited importance in global cucurbit production and its undisputable documented occurrence is limited to a few Asian countries at most, in particular Korea. This implies that the spread of the pathogen is of a different magnitude than f.e. CGMMV and its economic importance and damage marginal. We think therefore that the requirement for ZGMMV is a too stringent measure.

Due to its limited distribution, we are of the opinion that if ZGMMV will be regulated, an alternative phytosanitary measure has to be provided. The options 'Pest free area', 'Pest free area of production' or 'absent / not known to occur in the country', are good options to address the risk properly as an alternative to the Seed health test for ZGMMV.

**KGMMV** should in our view not be regulated based on assumed risks it poses for Australia. The organism has shown to be of limited importance in global cucurbit production and its dispersal is limited to a few Asian countries. This implies that the spread of the pathogen is of a different

magnitude than f.e. CGMMV and its economic importance and damage marginal. We think therefore that the requirement for KGMMV is a too stringent measure.

It is unclear what the basis is for the proposed measures for KGMMV from all exporting countries. Its reported geographical distribution is limited to the three countries, Korea, Japan and Indonesia. Only these three countries would possibly warrant a seed test. In the case that KGMMV will be regulated and due to its limited distribution, we are of the opinion that at least the alternative options for phytosanitary measures 'Pest free area', 'Pest free area of production' or 'absent / not known to occur in the country' should be provided as an alternative option to the Seed health test for KGMMV.

**Phomopsis cucurbitae** should in our view not be regulated based on assumed risks it poses for Australia. There is no scientific basis to indicate it is seed transmitted or poses phytosanitary risk, therefore import regulations on seed are not justified.