



## Method for the Detection of *Xanthomonas hortorum* pv. *carotae* in Carrot seed

**Crop:** Carrot (*Daucus carota*)  
**Pathogen:** *Xanthomonas hortorum* pv. *carotae*  
**Date:** Version 1.0.1, January 2017

### Sample and sub-sample size

The test is done on a minimum sample size of 10,000 seeds and a maximum sub-sample size of 10,000 seeds.

### Principle

- Detection of viable *Xanthomonas hortorum* pv. *carotae* (Xhc) bacteria by dilution plating of seed extract on two semi-selective media (MKM/MD5A and MKM/mTMB).
- Confirmation of suspected bacterial colonies by a pathogenicity assay or PCR.

### Restrictions on Use

- This test method is suitable for untreated seed.
- This test method is suitable for seed that has been treated using physical (hot water) or chemical (chlorine) processes with the aim of disinfestation and disinfection, provided that any residue, if present, does not influence the assay. It is the responsibility of the user to check for such antagonism and/or inhibition by analysis, sample spiking, or experimental comparisons.
- The ability to recover Xhc on plates can be influenced by the presence of other microorganisms. It is the responsibility of the user to check for such antagonism and/or inhibition by analysis, sample spiking, or experimental comparisons.
- This test method has not been validated for seed treated with protective chemicals or biological substances. If a user chooses to test treated seed using this method, it is the responsibility of the user to determine empirically (through analysis, sample spiking, or experimental comparisons) whether the protective chemicals or biological substances have an effect on the method results.

### Validation

Results of a comparative test were validated by ISTA, see [www.seedtest.org](http://www.seedtest.org) >> Technical Committees >> Seed Health Committee >> Testing Methods >> Method Validation. The method was adopted as an ISTA Rule (7-020) in Jan 2006.

### Method Execution

To ensure process standardization and valid results, it is strongly recommended to follow the best practices developed by ISHI-Veg for *Molecular Techniques in Seed Health Tests*

and *Dilution Plating Assays in Seed Health Tests* (see <http://www.worldseed.org/our-work/phytosanitary-matters/seed-health/ishi-veg/>).

**Method description**

See [www.seedtest.org](http://www.seedtest.org) (>>Technical Committees >>Seed Health Committee >>Testing Methods).