Species:	*Mycosphaerella graminicola, Septoria tritici*
Product Class(es):	SBI fungicides, also suited for other fungicide classes
Method type described:	agar plate test: radial growth test
Date of protocol:	2006-05
Proven for	Tebuconazole
Should be suitable for	other SBI and also QoI's. Protocol adjustments may be needed due to the individual compound characteristics.
Version	1
comments	• suited only for the generation of orientating results • not generally recommended as standard method because of limited precision and long duration • proven methodology for the active ingredient listed above. Others not mentioned have to be evaluated carefully to ensure valid results

Method:

1. Sample *Septoria tritici* infected leaves with visible developed pycnidia, selected at random from several plants from the field. To get an acceptable statistical result take not less than 20 leaves ideally taken diagonally from the field. Don't sample immediately after rainfall. The samples should be air-dried for 24h before dispatching not to become mouldy. The leaves should be transported in paper bags.

2. Spread the infected leaves in Petri dishes on water agar and incubate them for 24h at room temperature. Isolate freshly developed spores from the pycnidia by removing them with a sterilized needle. Put the spores from a single pycnidium onto Czapek-Dox vegetable juice agar plates, each.

3. After 6 days of incubation at 18°C, the spores originating from a single colony can be harvested and used for further testing.

4. Amend Potato dextrose agar plates with a range of concentrations of the fungicide to be evaluated.

   Example:

   - Tebuconazole: 0, 0.03, 0.1, 0.3, 1.0, 3.0, 10, 30 mg a.i./l

   The concentration range has to be adapted to a) the intrinsic activity of the fungicide to be tested and b) to the expected sensitivity variation in the fungal population.

5. Inoculate agar plate with spores in the center of the plate and incubate at 20°C. After 4 weeks the colony diameter can be measured. Calculate EC_{50} values.

Further comment:

The radial growth test is easy to prepare, but has the inherent methodological disadvantage of being time consuming and limited in precision due to the small absolute differences in the radial growth of different isolates. Not recommended as standard method.

author	Andreas Mehl, Bayer CropScience AG, Alfred-Nobel-Strasse 50, 40789 Monheim, Germany Andreas.mehl@bayercropscience.com