Effect Of Inoculation Method, Inoculum Density, And Fusaclean G (FO 47) On Development Of Cyclamen Wilt (Fusarium oxysporum f. sp. cyclaminis; FOC)

**Background + Objectives**
- FOC is the most important pathogen in cyclamens.
- Which inoculation method is the most suitable one for trials?
- What influence does inoculum density have on disease development?
- Does Fusaclean G (FO 47; non-pathogenic Fusarium strain) prevent or delay disease? Does it reduce final disease levels?

**Inoculation Methods**
- Poured Spore Suspension In Pot
- Substrate Inoculation

**Greenhouse Set Up**
- **Crop / cultivar:** Cyclamen persicum Mill. / Leuchtfeuer’ Bob’
- **Period:** May 2002 to June 2003
- **Replicates:** 7 (14 plants each)
- **Trial design:** complete randomized block
- **Temperature:** 18 - 26° C

**Treatments**

<table>
<thead>
<tr>
<th>Poured Spore Suspension In Pot</th>
<th>Spores / Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Spore Suspension (FOC)*</td>
<td>0</td>
</tr>
<tr>
<td>2 Spore Suspension (FOC)*</td>
<td>10000</td>
</tr>
<tr>
<td>3 Spore Suspension (FOC)*</td>
<td>20000</td>
</tr>
<tr>
<td>4 Spore Suspension (FOC)*</td>
<td>30000</td>
</tr>
<tr>
<td>5 Inoculated Substrate (FOC)**</td>
<td>0</td>
</tr>
<tr>
<td>6 Inoculated Substrate (FOC)**</td>
<td>10000</td>
</tr>
<tr>
<td>7 Inoculated Substrate (FOC)**</td>
<td>20000</td>
</tr>
<tr>
<td>8 Inoculated Substrate (FOC)**</td>
<td>30000</td>
</tr>
</tbody>
</table>

* Poured into pot after planting
** Mixed into substrate before planting

One set of treatments 1 to 8 was carried out **without** amendment of Fusaclean G (FO 47).

One set of treatments 1 to 8 was carried out **with** amendment of Fusaclean G (FO 47):
- 200 g per m³ substrate, each at sowing, prickling out, and potting.

**Results**
- Substrate inoculation caused more homogeneous disease development (less variation within treatments) than poured spore suspensions, but first symptoms occurred slightly later. (DATA NOT SHOWN.)
- Severity of symptoms increased with inoculum density. (DATA ONLY SHOWN FOR SUBSTRATE INOCULATION.)
- Fusaclean G (FO 47) delayed onset of disease but did not prevent disease or reduce final disease levels. (DATA ONLY SHOWN FOR SUBSTRATE INOCULATION.)

**Conclusions**
- Substrate inoculation is more suitable for trials than inoculation by poured spore suspensions.
- With increased inoculum density, disease development is faster.
- Fusaclean G (FO 47) cannot be recommended for prevention of cyclamen wilt under conditions of moderate disease pressure.
- Conclusions concerning Fusaclean G (FO 47) **may not** be transferable to low disease pressure or other pathogen / crop combinations.