

Forceps Technique Useful for Isolating Pathogens

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There are several references that give guidelines for isolating fungal pathogens from plant tissues. While there are slight variations between the methods, there are a lot of commonalities. They all suggest:

- preliminary washing
- some form of surface sterilization except when an Oomycete is suspected
- one or two sterile water rinses
- blotting or air drying before plating

The isolation process can be slow and frustrating for the technician when the specimen material is difficult to remove from the washing/soaking solution or when it clings to the forceps as it is transferred to the blotting/drying paper (Fig. 1).



Figure 1. Small specimens cling to the forceps.

This problem is exacerbated when the specimen tissue is very small. A teasing needle or some other instrument may be needed to remove the specimen from the forceps (Fig. 2).

A solution to the problem of clinging specimen material involves:

- the appropriate type of forceps used
- how the forceps are held
- utilization of the surface tension of the soaking solution(s)

Bent tip forceps work better than curved or straight tip forceps, although these have their uses (Fig. 3).

Hold the forceps in a reversed position, which is counterintuitive to many first-time workers (Fig. 4).

Diagnostic Tip of the Month



Figure 2. Using a teasing needle to remove the clinging specimen.



Figure 3. Various forceps used for isolations.

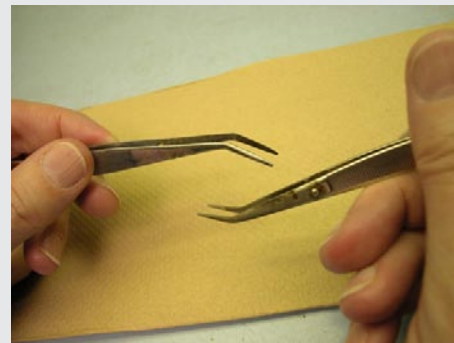


Figure 4. Hold forceps in a reverse position, shown on right.

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By holding the forceps in a reversed position the bent end of the forceps can be used to “scoop”

the specimen along with a drop of the soaking solution on and between the forceps tips (Fig. 5).

The surface tension of the drop of soaking solution will help attach the specimen to the forceps as the specimen is removed from the soaking solution (Fig. 6).

Later, open the forceps slightly (Fig. 7) as the specimen is placed onto the blotting/drying paper.

As the drop is being absorbed by the paper the drop’s surface tension will detach the sample from the forceps. (Fig.

8 and Fig. 9).

Photos by Christine Woltjen – Ohio State University



Figure 5. “Scooping” the specimen from the soaking solution with a drop of soaking solution.



Figure 6. Specimen plus drop of soaking solution.

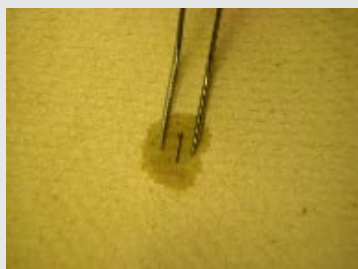


Figure 7. (Top Left) Utilizing surface tension to detach specimen, forceps open for illustration. Figure 8. (Top Right) Surface tension of solution detaches specimen from forceps. Figure 9. (Bottom Left) Specimen detached from forceps.

Diagnostics Subcommittee Update

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The NPDN Diagnostics Subcommittee held a conference call on April 12, 2007. During this meeting a number of issues were addressed. Please refer to the diagnostics subcommittee web page on the [NPDN web site](#) for complete minutes of this meeting (login and password required).

Topics of discussion included:

- Entomology representatives from each region.
- Update on the SOP formatting to PHP standards.
- Laboratory Accreditation Update
 - Working group representatives.
 - Scheduled Regional Center visits.
- Subcommittee membership structure brought to NPDN Operations Committee for input.
- Industry membership brought to NPDN Operations Committee for input.
- PIPE Update.

The next meeting will be held on **May 17, 2007**.