

Improved Pollination Tool for Interspecific Crosses and Mentor Pollination of *Medicago* species

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The tool was made out of necessity to collect as much pollen as possible from *M. arborea* for crosses of alfalfa (*M. sativa*) X *M. arborea*. Cross-pollinated *Medicago* species have pollen that flies when the flowers are tripped. Flying pollen is a strong feature of *M. arborea*, and some pollen is lost when flowers are tripped onto flat toothpicks, small spatulas, the point of a knife blade, or paper pollen boats. Flower production of *M. arborea* has been sporadic and sparse the past few years in our winter greenhouse program, thus the need to collect flying pollen and maximize crossing.

The pollination tool illustrated below collects all the pollen when flowers are tripped into the tubes. Tubes loaded with desired pollen are used to make cross pollinations by tripping flowers of the pistillate parent into the pollen in the tube. Tubes are dedicated to a given cross, and used day after day until crossing is completed. Tubes then are discarded, since they are easier to make than to clean. As shown below, tubes are made by attaching a section of soda straw to a longer section of pencil or wooden doweling. A useful feature is that the pencil or doweling can serve as a piston to push pollen forward until pollen is depleted. In mentor pollination, pollen parent and mentor can be tripped into the tube in any desired ratio.

The pollination tool can be described using the old Chinese proverb: “a picture is worth a thousand words”. Variations of the tube concept to catch flying pollen perform equally well.

