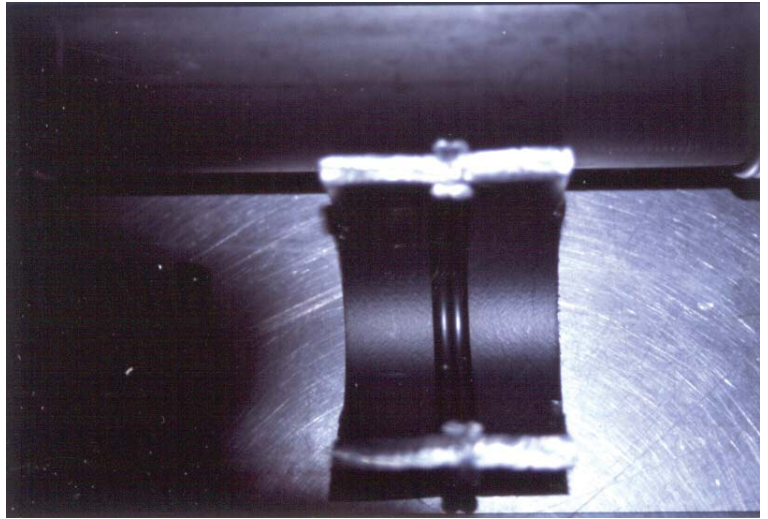


Butt Fusion and Electro-welding of Polyethylene Pipe Mainlines

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Butt-welding and Electro-fusion are two separate methods for joining polyethylene pipe butt sections and fittings. Though long used in the gas, sewer, and water industries, where a perfect weld is often critical, this technology is new to the maple industry. Terry Laubisch of Flyway Farms suggested the use of this technology to the Uihlein Field Station as a method that may be of interest to the maple producer. With the assistance of Andrew Lane of Everett J. Prescott Pipeline Specialists, a study was initiated in September 2001 to investigate the practical applications of Butt-welding and Electro-fusion technology in the Uihlein Field Station sugarbush.



A small cross-section of welded pipe

We will compare welded pipes to the more traditional insert fitting pipe connections in the following categories:

- Amount of raw sap remaining upslope of pipe junctions.
- Wells upslope of insert fitting junctions are deeper than those above butt-welded junctions.
- Amount of animal damage
- Ability to hold a vacuum
- Butt-welded junctions 1) should provide a better seal and 2) have larger diameters than traditional junctions. Both affect the ability of a tubing system to hold a vacuum.
- Tubing setup: is welding faster, and how does it work on both older and newer pipes?
- Washing: which setup provides for faster and/or better washing?
- Cost

In fall 2001, the mainline sap system at the Uihlein Field Station sugarbush was sealed and pressure tested to isolate potential vacuum leaks and animal damage. Using both technologies, welds of varying types will be made in the field to study the different factors through December, 2001 and January, 2002 and the following sap season. A full report will be issued following the 2002 sap season.

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