

## CWSF 2012 - Charlottetown, Prince Edward Island



### Josie Mielhausen

#### Peel Potential - The Effects of Citrus Peel Extract on Polystyrene Foam

**Challenge:** Resources

**Category:** Senior

**Region:** Bluewater

**City:** Lion's Head, ON

**School:** Bruce Peninsula District S.S. & E.S.

**Abstract:** Polystyrene products are used abundantly for packaging and food containers. These products are voluminous for their mass and take centuries to degrade in landfills. D-Limonene was extracted from citrus peels using steam distillation. Tests clearly demonstrated that oils extracted from citrus peels are superior to acetone as a polystyrene foam-reduction recycling method. The polymer chain by-products of the dissolving process were successfully used as glue.

#### Biography

My name is Josie Mielhausen and I am a grade 11 student at Bruce Peninsula District School. I live in Lion's Head Ontario, which is part of the Niagara Escarpment surrounded by the waters of Georgian Bay and Lake Huron. I live with my family on a beef farm. I represent my school by competing in athletic events as well as Science and Technology fairs. I am a member of the Bruce Peninsula Environment Group and the Bruce Peninsula Biosphere Association. This is my fifth Canada-Wide Science Fair competition.