

IMPACT

 University of Idaho
Cooperative
Extension System

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Panhandle Small Acreage Farmers Track Temps and Pests

The Situation

The topography of the Panhandle of Idaho causes numerous microclimates. The result is a variety of growing conditions with which small acreage farmers and Master Gardeners have to contend. Variety selection and predicting plant growth and potential diseases and insect pests also are a challenge because of the microclimates. In addition, there is never a "normal" year, so farmers and Master Gardeners cannot rely on the calendar to indicate when to plant or when to start watching for pests.

Models for assessing some pests have been developed using growing degree days (GDD's). Using such models in northern Idaho could increase the accuracy of predicting plant growth and potential appearance of pests. In addition, forming a network of producers monitoring GDD's and pest occurrences on a weekly basis could increase awareness of emerging pest populations and plant growth differences across microclimates.

Our Response

Working with a local data equipment company, and with the support of a District 1 Extension grant, we developed a data logger that could record accumulated growing degree days (AGDD's) at three base temperatures: 40, 45, and 50 degrees F., as well as average soil temperature. In March 2000, these

data loggers were placed at ten sites in Kootenai and Bonner Counties. The shelters in which the data loggers were housed were designed and built by a Kootenai County Master Gardener. The small acreage farmers and Master Gardeners participating in the project either had access to email or agreed to phone in the data logger readings weekly, along with information on plant growth, pest occurrence, rainfall, etc. We compiled the data each week and emailed it or surface mailed it back to the participants. Eight of the ten participants communicated via email. Each month our Master Gardener "data-king" would develop graphs showing the differences between AGDD's at the ten locations. Seasonal summary graphs across locations were also prepared and distributed.



Master Gardener Frank Guenther and small acreage farmer Diane Park setting up the data logger shelter in the snow at our Spirit Lake location, March 2000

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Achievements

- An inexpensive data logger was developed that is simple and quick to use.
- Participants indicated they understand benefits of using growing degree days rather than calendar days for monitoring crops.
- Seven of the participants said the project made them realize that they need to keep better crop production records.
- Several said they looked forward each week to comparing AGDD's, plant growth and pest incidence across locations.
- "Teachable moments" during the project included:
 - an e-mail discussion among participants, the Kootenai County Extension Educator, and an entomologist at the Univ. of Idaho Moscow campus about cabbage moth species.
 - a discussion on how soil composition can impact soil temperatures.
 - the examination of models developed in other regions for the Colorado potato beetle.
 - a discussion on the reason for base temperatures in GDD models.
- All ten participants expressed interest in participating in the project in 2001.

Cooperators

This project would not have been possible without involvement by Frank Guenther who built the data logger shelters and created monthly and seasonal graphs, Chuck Mancuso owner of AEC Systems who built the data loggers, and without support of a District 1 Extension grant.

The Future

- Over the winter, all of the observations made at the ten locations will be summarized.
- The project will begin again in mid-March, 2001 and may be expanded to several more locations.

For More Information

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Related Impact Statements

Other Small Acreage Farming Impact Statements available through Kootenai County Extension include:

- Course shows reality of small acreage farming, 6Oct2000.
- Small acreage farmer explores organic weed control options, 27Dec99; updated 6Oct2000.
- Farmers teaching farmers - a hit, 27Dec99.
- Task Force sprouts Rural Roots Association, 15Aug99.
- Small Acreage Farmers Build Momentum, 29July98.
- Inland Northwest community food system assessment task force formed, 8Oct97.

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