

Internship:

Interns will be assigned to a county Extension office in Indiana. The County Extension Director in the county will be the direct supervisor. An intern orientation session will be held May 7-9, 2007 in West Lafayette. The orientation session will include orientation to Purdue Extension, understanding of the working environment, basic responsibilities and legal requirements, creation of computer account, and assessment of personality traits. Interns will complete a final project as part of their intern experience. The intern experience will end with a presentation/display of the intern's experience at the Indiana State Fair on August 9, 2007.

Details:

Pay will be on a bi-weekly basis. Interns will be non-exempt and as a result, employment of more than 40 hours per week will require overtime payment.

Interns will need to provide their own housing and an operable vehicle and must have a valid driver's license.

Screening of applicants will begin March 1, 2007.

For More Information:

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AN INTRODUCTION TO STARTING A SPECIALTY FOOD BUSINESS IN INDIANA - Wednesday, April 25th, 2007 - Indiana Farm Bureau, Inc., 225 S. East St., Indianapolis, IN. Sponsored by: Purdue University's Dept. of Agricultural Economics, Dept. of Food Science, Southeastern Indiana Small Business Development Center, and Indiana State Department of Health.

Developing and selling specialty ingredients and foods is one alternative for homemakers and farmers to add value to Indiana commodities. This workshop was developed to serve as a comprehensive overview of the issues associated with starting a specialty food business in Indiana.

The Overall purpose of this workshop is to provide knowledge, contacts, and resources about starting a new food business in Indiana through formal lectures and question and answer sessions with speakers and entrepreneurs, as well as written materials with information and resources.

This workshop was developed for people interested in developing a specialty food or food ingredient business. Participants may be small farmers interested in vertically integrating, homemakers, and current/former entrepreneurs who need a comprehensive overview of the topics to be covered when starting a new food business in Indiana.

For interested individuals, participation in this workshop will allow an easier start-up at Ohio River Valley Food Venture, the shared-use commercial kitchen facility at the Small Business Development Center in Madison, Indiana.

The registration fee for the workshop *An Introduction to Starting a Specialty Food Business in Indiana* is \$75 per registrant. This includes a three-ring binder of information, lunch, and refreshments in the morning and afternoon. Registration deadline no later than April 18, 2007.

About registration, contact: De Bush, Dept. of Food Science, Purdue University, West Lafayette, IN, (765) 496-3832, email: djbush@purdue.edu.

About program content, contact: Maria Marshall, Dept. of Agricultural Economics, Purdue University, West Lafayette, IN, (765) 494-4268, email: mimarsha@purdue.edu.



GREENHOUSE AIR QUALITY - (Chris Gunter) - As the season starts and we begin to use greenhouses that have been empty for the winter; be on the lookout for injury due to poor air quality. One problem causing gas of concern to most greenhouse growers is ethylene. This gas can be generated by faulty heat exchangers, dirty fuel openings, and incomplete combustion of fuel. We have also seen problems caused by using nonvented unit heaters in the greenhouse. These problems can be increased in especially tight greenhouse structures, those that have little exchange with the outside air.

Ethylene is a plant hormone produced by plants during their growth and development. However, ethylene produced through faulty heating equipment can be very detrimental to greenhouse crops, because it is produced in high concentrations. It can affect all the above ground parts of the plant including leaves, flowers and fruit. Low levels of ethylene can cause leaves to droop downward, epinasty, even though they are not wilted. Stem thickening, increased branching, flower bud abortion, flower malformation and general stunting can also occur as a result of exposure to ethylene. Crops vary in their sensitivity to ethylene, however tomatoes are especially sensitive. A wide range of crop plants can be affected by ethylene in the greenhouse.

Symptoms of ethylene damage can be very subtle, especially if there are no plants grown in clean air available for comparison. Further complicating diagnosis are factors like exposure time, concentration of ethylene, stage of plant development, temperature and sensitivity of plant species to damage by the gas.

Proper heating system installation and maintenance are the best ways to prevent problems. A maintenance plan should include cleaning the unit heater and fuel orifice twice a year. Propane flames should have a small yellow tip when properly adjusted and natural gas flames should be a soft blue with a well-defined inner cone. To ensure proper combustion heater units should have a clean air intake, which provides fresh air to the

combustion chamber. Adjustment and maintenance of heating units are best done by professionals before the greenhouse is started for the growing season. When having the heater serviced, always ask the repairperson to check for leaks, cracks and any obstructions that may be in the stack (Figure 1). Also all heaters used in the greenhouse should be vented to the outside with a stack, which allows for exhaust gas not to be drawn back in to the greenhouse through the ventilation system.

Here are a few other things you should check before the season begins.

Fans and Components: Check bearings on electric motors, Check and adjust belt tension, Check physical condition of belts, Tighten or replace missing bolts and nuts, Check and adjust belt pulley alignment, Clean fan blades/housing, check and service fan-jet distribution system and convection tube.

Heat Exchangers, Burners, Gas Controls and Thermostat: Check for cracks and corrosion, Clean heat exchanger if necessary, Inspect and clean burners, Inspect and clean inside of burner tubes, Inspect all gas lines and tubing for tight fits, Check electrical connections to gas valve, Check thermocouple for cleanliness and tighten connections, Check thermostat for cleanliness, Check wiring to and from thermostat, Check thermostat setting.

Vent systems/Chimney: Check for obstructions, Check connections for tightness and security, Check vent support system for security, Check joints for signs of leakage, Check vent pipe drip leg and clean-out cap, Check weather cap.

Gas Supply: Check that gas mains are turned on, Check propane level, Check heater combustion air inlets for obstructions, Turn on gas, light pilots and observe burner flame, Activate or cycle heater unit to insure proper operation.



Figure 1. A) This bird's nest was removed from a greenhouse vent stack. B) The bird's nest was large and as you can tell, still actually in use. (Photos by Chris Gunter)

For more information on greenhouse air quality check out the Purdue University Floriculture Extension website at <http://flowers.hort.purdue.edu/web/GH-guides.htm>.

It is the policy of the Purdue University Cooperative Extension Service, David C. Petritz, Director, that all persons shall have equal opportunity and access to the programs and facilities without regard to race, color, sex, religion, national origin, age, marital status, parental status, sexual orientation, or disability. Purdue University is an Affirmative Action employer. 1-888-EXT-INFO <<http://www.ces.purdue.edu/marketing>> Disclaimer: Reference to products in this publication is not intended to be an endorsement to the exclusion of others which may have similar uses. Any person using products listed in this publication assumes full responsibility for their use in accordance with current directions of the manufacturer.

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