WWF/WPVG/UA Collaboration Update: The Wisconsin Eco-potato Standards
Deana Sexson,
NPM Program, Dept. of Horticulture
UW-Madison

WWF/WPVG/UA Collaboration Executive Committee
Collaborating Growers

Background:
A partnership between WWF and the WPVGA was founded through a memorandum of understanding (MOU) in 1996. The 1996 MOU described that the WWF/WPVGA Collaboration, was formed to pursue the following goals: promote the development and adoption of bio-intensive IPM practices; enhance habitat quality; refine measurement systems for BioIPM adoption; develop marketplace incentives for ecologically produced potatoes; and identify policies and programs to support environmental goals. UW, which has always contributed pertinent research, education, and information to the Collaboration, officially became a member in 1998 to form a "three-legged stool" known today as the WWF/WPVG/UA Collaboration.

Raising consumer demand for biologically based IPM produced products has been a goal of the collaboration from its inception. Collaboration measurement methods provide a solid foundation in the development of an eco-label for bio-intensive IPM grown potatoes. Using the potato IPM team at the University of Wisconsin, ecological standards were written for potatoes. These standards contain both an IPM portion and a pesticide toxicity section. Potatoes grown in 2001 which hit these standards will be able to be endorsed by the World Wildlife Fund and will have the panda logo (the World Wildlife fund symbol) printed on the bags.

Eco-potato standards
The eco-standard is divided into 2 parts, 1) a eco-potato production section and 2) a toxicity score. To become certified, growers must pass both portions of the standards.

In the eco-production section, potato production practices are measured. Growers must incorporate certain practices into their potato production to quality, as well as accumulating the proper amount of total points by various practices.

The toxicity guidelines are written so that growers minimize the amount of high-risk pesticides that are applied to that field in a given year. The toxicity units totals are derived from toxicity values developed from the WWF/WPVG/UA Collaboration. Growers must limit the total number of toxicity units applied during the year to be eligible for certification.

The specifics of the two portions of the standards are found below.
Eco-potato Production Standard:
In the potato production standards, there are 9 areas which questions are divided into: scouting section, information section, pest management decisions, field management decisions, weed management, insect management, disease management, soil and water quality, and storage management. Each section contains a minimum number of points that are required for certification (at least 40%-50% of the points in each section). Furthermore, a total score of greater than 70% of the total points must be scored to certify. Since growers must receive a minimum number of points in each of the sections, growers that are certified are implementing practices that are necessary all throughout the production system. This verifies that growers are not just scoring points in a few sections and still passing the standard, but conversely forces growers to utilize proper practices in all of their potato production areas and confirms that growers are utilizing at least some practices from all sections.

The total points which can be scored on the production standard varies depending on whether growers choose a short season (less than 90 days from emergence to vinekill) or long season (greater than 90 days from emergence to vinekill). Secondly, the storage management section only applies to growers who are storing the crop. Growers who fresh pack directly off the field are not awarded nor penalized by points in the storage section, and do not answer the storage management section.

Many practices found in the production standards are required practices, such as rotation, scouting, record keeping, planting certified seed, etc. Growers must implement these practices or else they are automatically eliminated from certification. Conversely, some practices are designated as bonus questions that allow growers to add to their total points without penalty for not implementing these practices (such as extra credit). These practices are considered to be the extreme cutting edge, and practices that are not currently utilized in production systems. Therefore, bonus points are given to growers who try these practices in the field of which they are certifying.

Additional sections will be added to the production standard as they are developed. The soil and water quality section will be expanded further, and an ecosystem / conservation section will be added when the production practices recommended for these modules are developed.

Toxicity Guidelines:
The toxicity guidelines are written so that growers minimize the amount of high-risk pesticides that are applied to that field in a given year. The WWF/WPVGA/UW Collaboration partners agreed to use a multi-attribute toxicity index to measure pesticide risk. The multi-attribute toxicity index includes 4 categories: (1) acute mammalian toxicity; (2) chronic mammalian toxicity; (3) ecotoxicity (risks to small aquatic organisms, fish, and birds); and (4) impacts on the viability of biointensive IPM (effects on beneficial organisms, bees, and resistance management). Toxicity factors allow the active ingredients of individual pesticide to be compared so that the relative potential of a
pesticide to pose human, wildlife and bioIPM risks can be compared. Toxicity factor values are calculated from the following formula:

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\text{Toxicity factor value} = (0.5)\times\text{acute mammalian toxicity} + \text{chronic mammalian toxicity} + \text{ecotoxicity} + (1.5)\times\text{BioIPM impacts}
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To determine the toxicity units for the season, the pounds of active ingredient for each compound are multiplied by the toxicity value for that specific compound. The total toxicity units for each compound are then added together to accumulate total toxicity units for all compounds sprayed during the growing season. A cap of 800 toxicity values is placed on short season potatoes (less than 90 days from planting to emergence) and 1200 toxicity values are placed on long season potatoes (greater than 90 days from planting to emergence). These limits are extremely low and growers must choose their chemical choices wisely in order to meet this strict standard.

**Late Blight Provision To Toxicity Units:**

Once 18 severity values are accumulated, the conditions are favorable for the development of late blight, and a protectant fungicide spray program must be implemented to prevent the onset of the disease. The date at which eighteen severity values is accumulated can vary depending on the weather conditions for the particular growing season. If 18 severity values are reached early in the growing season, substantially more fungicide sprays must be applied, therefore increasing the total toxicity units. Provisions are written into the eco-potato standard to accommodate for the accumulation of 18 severity values early in the season. Furthermore, if late blight is found in the vicinity (within 25 miles of the field which will be certified) additional fungicide applications will occur. A grower who is applying preventative fungicides on a 7 day schedule will now need to apply preventative fungicides on a 5 day schedule to prevent disease. This also will add to the total toxicity units. Since late blight is the most serious disease pest of potatoes, the following provisions are written into the standards FOR LATE BLIGHT ONLY:

- If 18 severity values are reached by June 1st, 400 more toxicity units may be used for fungicides only.
- If 18 severity values are reached by June 15th, 200 more toxicity units may be used for fungicides only.

The following conditions apply only when late blight is found in the vicinity (within 25 miles of field):

- If there are 18 severity values and late blight is found in the vicinity in June, than 400 toxicity units can be added to the total.
- If there are 18 severity values and late blight is found in the vicinity after June 30th but before July 15th, than 300 toxicity units can be added to the total.
- If there are 18 severity values and late blight is found in the vicinity after July 15th but before August 1st, than 200 toxicity units can be added to the total.
• If there are 18 severity values and late blight is found in the vicinity in August, than 100 toxicity units can be added to the total.

**Marketing Eco-potatoes:**
The efforts to develop a marketing strategy for “green labeled” potatoes is now under way. Early this year, marketing retreats have taken place to develop a logo and marketing strategy for eco-potatoes. Specifics of the logo, distribution, packaging and promotion of the product will be finalized soon. Overall, receiving a price premium for the product of which the growers can capitalize is a focus of the project.

**For More Information:**
For further details on the collaboration in general and further details on the approaches and methods used for the new eco-label visit our website at [http://ipcm.wisc.edu/bioIPM](http://ipcm.wisc.edu/bioIPM), or contact Deana Sexson at 608-265-9798 or sexson@facstaff.wisc.edu.