Vegetable Crop Update - #2

June 4, 2004

1) New insecticides labeled for potato – Jeff Wyman
2) Seed piece decay and spotty stands
3) Potato disposal

NEW INSECTICIDE REGISTRATION ON POTATOES – Jeff Wyman, Department of Entomology, UW-Madison

-On May 21st 2004 the EPA granted federal registration for use of Novuluron on potatoes as a foliar spray for control of Colorado potato beetle. Novuluron will be marketed as Rimon 0.83EC. We have evaluated this product as Diamond in 2002 and 2003 and found good efficacy on CPB at rates of 9-12 oz product/acre. It also has good efficacy on Lepidopterous larvae (worms). This product is an insect growth regulator which disrupts the moulting process as insects move from one larval stage to another. The following points should be considered:

- Rimon will only kill moulting larvae. It will not kill adults. The most effective timing is to target young larvae after egg hatch (1st-3rd instars).
- Good coverage will aid control
- Persistence is good at 10-14 days
- Tox units have not yet been worked out. Novuluron has low mammalian toxicity but is toxic to aquatic invertebrates and there may be restrictions on the label concerning its use close to water.
- The rate range will likely be 6-12 oz of product/acre. Our data show best efficacy on CPB at 9-12 oz.

Commercial product should be available by June 20

Potato Crop Update - A.J. Bussan, Potato and Vegetable Production Systems Specialist, UW-Madison, Horticulture Department, 608-262-3519, cell 608-225-6842 or e-mail ajbussan@wisc.edu

Cool nights and warmer days over the past week have led to rapid potato growth. The crop appears to be off to a good start with few problems reported in the area. Many growers have completed at least one hilling and will be applying the second side dress application of fertilizer soon.

We have documented poor emergence in Dark Red Norland research trials at the Hancock Ag Research Station. Jiwan Palta and I have Dark Red Norland in trials at HARS that had less than 60 to 70% emergence. Upon closer inspection, seed piece decay was at the root of the poor emergence in both fields. Planting dates were April 14 and April 20 in both trials. I have several field scale trials and some grower fields have had uneven emergence as well. Dark Red Norland was the only variety to have any issue
with seed piece decay among the 15 or so varieties I am evaluating this summer at Hancock. Hopefully, seed piece decay is isolated to just a few fields.

I am having emergence issues in another trial that is not seed piece decay and has not yet been diagnosed. Seed pieces are firm and have good integrity, but the stem is not elongating and pushing the plant out of the soil. A number of folks have looked at the field and we are still trying to understand what is causing the problem.

Crop canopy is rapidly closing with 30 to 50% row closure occurring in most varieties. Some varieties such as Atlantic began hooking last week while others have stolons that are still growing. We will be approaching a critical time for potato crop sensitivity to heat and water stress. With tuber initiation and early bulking just around the corner, growers need to be prepared to manage irrigation closely. Drought stress during early tuber growth will reduce yields, increase sugars and cause color problems, and may result in poor gravity. Good canopy growth and row closure is key to preventing high soil temperatures over the next few weeks.

**Potato disposal options** - A.J. Bussan, Potato and Vegetable Production Systems Specialist, UW-Madison, Horticulture Department, 608-262-3519, cell 608-225-6842 or e-mail ajbussan@wisc.edu

Everyone is probably aware by now that we have a long potato crop coming out of the 2003-04 storage season. The disposal of the excess potato crop at this point during the growing season presents a difficult challenge. The large volume (>500,000 cwt) and no threat of freezing weather for the next 4 to 5 months contributes to the difficulty of disposing of the potato crop. Walt appropriately pointed out the problems the excess potatoes could cause from a disease management standpoint if allowed to sprout and serve as a source of inoculum. As a result, potato tubers will have to be disposed of in a clean manner that effectively prevents sprouting.

Many may be wondering what viable options are there for the disposal of potatoes at this scale? Cost of disposal and time required are obvious concerns for the individual grower. In addition, storages without refrigeration will not be able to hold potatoes for much longer due to warming temperatures and unavailability of night time cooling.

Several options may be available. Individual growers will have to work out specific practices for their system, but several options were recently discussed by the potato research exchange and I have some thoughts relevant to each in this article and over the next few weeks.

1) **Land spreading.** This may be the cheapest and most readily available option on the surface. However, preventing the tubers from sprouting or potato plants from growing from land spread tubers will be difficult at this point in the growing season. Larry Binning suggested the easiest way to prevent the tubers from sprouting would be to chop or smash the tubers prior to spreading them. This would damage the tuber
to the point where few sprouts would grow and those that did could be easily managed with additional tillage.

Destroying large volumes of tubers may not be feasible for some. As a result, some tubers may be spread whole across production fields. Those tubers have the potential to sprout and grow. Burying those tubers at least 8” deep would stress them and allow for easier sprout management. Larry felt land spread potatoes at this point in the growing season would likely have to be treated at least 3 times with herbicide before they would stop regenerating. He also recommended diquat as the quickest and most effective way to destroy the foliage, but it would have to be timed right to stress the plants and ultimately result in death (6 to 8” tall).

Growing crops on fields immediately following land spreading may not be feasible. No herbicides could effectively destroy the potato plants under a crop canopy for the entire season due to the large volume of tubers per acre. A ton may have as many as 4,000 tubers and spreading 10 tons of potatoes per acre would result in 1 plant per ft².

Land spreading may be most effective following an early season crop such as peas or wheat. The early season crop can be harvested, the potatoes spread, and then all volunteer sprouts managed for the remainder of the summer. Following land spreading of potato with a crop this summer will likely require extensive herbicide use and potentially require use of fungicides to prevent disease development on volunteer potatoes under the crop canopy. Alternatively, potatoes could be land spread on fields and then be managed fallow.

Land spread potatoes will also influence the fertility levels of the soil. N and P in particular may be affected by large additions of potatoes per acre. I am trying to collect information related to the influence of land spreading potatoes on fertility levels for following crops.

2) Feeding potatoes. Many growers already feed excess and cull potatoes to livestock (either their own or their neighbors). Feed is scarce and prices are high so some livestock producers may be looking for alternative feed sources. Feel free to contact me for specific sources of information relative to feeding potatoes and handling of potatoes for feed (i.e. ensiling).

3) Composting potatoes. Composting will require mixing of dried as well as green product to allow for effective break down of the material. The high water content of potatoes may require large amounts of plant refuse with lower water content to allow for effective composting. In addition, composting large volumes of potato may require large areas and may have the potential to leach during the initial phase. I am trying to locate more specific recommendations. Leslie Cooperband published a bulletin on composting and is available through extension or can be downloaded at: http://www.wisc.edu/cias/pubs/artofcompost.pdf.
4) *Piling potatoes.* Many other areas of the country have recommended piling potatoes until they can be land spread or destroyed. If you pile, the potatoes must be covered by 8” of soil or other material to prevent sprouting. In addition, piles should be located in areas where leaching is not an issue. Potatoes that break down in the pile may produce large volumes of liquid that should be contained.