



September 22, 2010 -- Vol. 25, No. 19



## Vegetable Crop Advisory Team Alert

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### Last issue for 2010

This is the final issue for the 2010 season of the *Vegetable CAT Alert* newsletter. Included in this issue is an index of articles to help guide readers through the topics covered this year. *MSUE* educators and specialists have worked hard to inform readers about current issues and crop production throughout the last few months.

We will continue to publish timely articles at the *Vegetable CAT Alert* web site: <http://ipmnews.msu.edu/vegetable/>. Interested in staying informed via email notification? Send an email to [catalert@msu.edu](mailto:catalert@msu.edu) with your full name and note that you wish to subscribe to the fruit edition.

We love to hear feedback from our readers. Do you have a comment or suggestion? Please send it to [catalert@msu.edu](mailto:catalert@msu.edu) or mail it to the address on the back of this newsletter. Indicate whether you are referring to our fruit, vegetable, field crop or landscape edition.

This is our last issue with assistant editor Andrea Gooch. We wish her well at her new job in Kalamazoo and will miss her excellent skills here at the MSU IPM Program.

*Thank you. - Joy Landis, editor and Andrea Gooch, asst. editor*

## Postharvest handling of pumpkins and winter squash

Bernard Zandstra, Horticulture

Pumpkins and winter squash are maturing somewhat erratically as a result of the cool weather this summer. As fruit matures, it is often difficult to decide when to cut the fruit from the plants. If there is a wide range of maturity in the field, it may require several trips across the field to cut off mature fruit. All fruit should be cut from vines when the fruit is mature and the handle is still intact. If left attached to the vines, foliar diseases can move into the handles and fruit. The incidence of foliar diseases in the field has a direct effect on the potential quality and longevity of the fruit.

Pumpkins and squash are warm-season crops, and require a long, warm, sunny growing season to reach maximum size and yield. In a cool summer, such

as we have just experienced, the rate of growth is reduced and fruit require extra time to reach full maturity. However, when plants begin to deteriorate rapidly from powdery mildew and other foliar diseases, it is time to harvest.

Pumpkins and winter squash are mature when the color of the skin turns from green to their mature color. Jack-o-lantern pumpkins have a shiny, bright orange skin when mature. When the fruit are mature, they should be cut from the vines to let the curing process begin. Curing of pumpkins and squash is a very important part of the post harvest process and should always be included in the crop plan. Removing fruit from the plants reduces the chance that healthy handles will become infected

with any of the common rotting fungi that infect the plants.

Curing allows the fruit to shrink about 10 percent in weight, which results from loss of some water. During the process, cuts and bruises heal, and fruit infected with pathogens rot. (If shipped immediately off the field, these

infected fruits often rot at retail outlets, and growers have to retrieve them or pay for removal.) Fruit should be kept above 70°F for about two weeks for optimum curing. Warm, sunny weather in the field is the best method of curing.

Pumpkins and squash are very susceptible to cold temperatures,

and exposure to temperatures below 40°F will shorten shelf life. Never place pumpkins or winter squash in refrigerated storage below 50°F. A cool night or two in the field won't do much damage, but a frost can cause discoloration of fruit skin and eventual rot. Storage in refrigeration results in rotten fruit. **IPM**

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## **Fruit and vegetable pollinator survey – let your opinion count**

Rufus Isaacs, Entomology

We are working with a diverse group of researchers and farm educators to develop a strategic research and education proposal to the USDA Specialty Crops Research Initiative grant program. The focus of the proposal is on understanding

the role of native bee pollinators in specialty crops and how to improve habitat and farm management to increase pollination by bees. To help us develop the most relevant research for agricultural producers – and to help us assess the current

level of awareness among those producers – we are conducting a brief survey. If you have time and are interested in crop pollination, please follow this link: <http://bit.ly/pollinatorsurvey> **IPM**

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## **Challenges of growing fruits and vegetables in plastic tunnels**

Hannah Stevens, Extension educator

In cold climates such as Michigan, gardeners and growers have had success with lengthening the growing season in spring and fall by using row covers, low tunnels and various types of greenhouses. More recently, a trend towards buying local has led some producers to explore on-farm winter storage as well as the production of fresh greens that survive and thrive in these structures during the winter. High-tunnel production can lengthen the growing season and provide producers with a means to enter the market earlier with high value crops. This has the potential to expand the availability of healthy locally grown crops. In addition, in several states, including Michigan, there are incentive dollars available to growers who would like to try high tunnel production systems.

Pest problems and their management in greenhouses and high tunnels are different than field grown fruits and vegetables, and an understanding of those differences

is needed to capitalize on early and late season markets. Soil, water and nutrient management are also unique to these systems and markets for these crops need to be developed and well understood. [MSU Extension](#) would like to invite interested growers to a webinar series sponsored by the [Great Lakes Vegetable Working Group](#), the [University of Illinois Extension](#), and a Sustainable Agriculture Research and Education Professional Development grant. These programs include five 1-2 hour webinars produced on November 1, 3, 8, 16, and 18. You can view the webinars at home via your computer or at the suggested places set up throughout the state.

Webinar One (November 1, 6:30-8:30 PM) will provide an overview of season extension methods and economics and weed, insect and disease control.

Webinar Two (November 3, 6:30-8:30 PM) will address production systems for tomatoes and related

crops, cultural, organic and other pest control methods as well as grafting techniques.

Webinar Three (November 8, 6:30-8:30 PM) will include an overview of winter crop production systems including a discussion of economics, sanitation, plastic management, production sequences, crop selection, sanitation for a simple hoophouse, greenhouse, in-ground, in container, row covers, and low tunnels. Pest management and storage will also be discussed.

Webinar Four is titled “Management of Nutrients, Water, Soil, and Other Production Considerations in High Tunnels” and will be broadcast November 16 at a different time than the previous three webinars. This will be a brown-bag lunch webinar airing from 1:00-2:00 PM. The first 50 participants or organizations to include webinar four as part of their registration, will receive a free copy of the “High Tunnel Production Manual” published by Penn State.

Webinar Five is titled “Interpreting NRCS High Tunnel Project Guidelines.” This will also be a brown-bag lunch webinar on November 18 from 1:00-2:00 PM and will clarify the support available through the EQIP program.

Pre-registration for this webinar

series is mandatory and can be found at [http://www.surveymonkey.com/s/season\\_ext](http://www.surveymonkey.com/s/season_ext). The cost for the series is \$30 whether you attend one or all five webinars. Each webinar will be recorded and available on several state IPM or vegetable oriented websites for viewing soon after its

original airdate. For people who do not have a broadband connection, we are identifying several places throughout each state to host the webinar series.

For more information, please check out: <http://bit.ly/plastictunnels>

**IPM**



**4 – Macomb, Lapeer, St. Clair counties**

Hannah Stevens

**Weather and crop conditions**

Beautiful clear days alternating with showers every three or four days have provided good growing conditions for the past two weeks for late season crops and good weather for long days of harvesting, packing and shipping.

**Crop report**

**Pumpkins** and **winter squash** have had excellent curing weather, as have gourds. Powdery mildew has been difficult to control this season, but fortunately the battle is over for the season. **Indian corn** and **corn stalks** are being shipped and sold directly as the fall season moves in.

**Early and mid-season tomato** harvest is over, and the late crop is in excellent condition with few disease issues with the exception of anthracnose. Direct market customers seem to have a renewed interest in food preservation as half bushel sales are brisk.

**Peppers** are of good quality and supply.

**Snap bean** harvest is surprisingly good given dry growing conditions.

**Parsley** growers who are noticing blight on foliage and petioles may

be dealing with *Septoria* leaf spot of parsley. This disease appeared early this season and may have looked like a leaf scorch. Close examination will reveal tiny dark specks within the tan lesions. It’s important to work infected plants down and rotate out of parsley and related crops for three years. The disease can be prevented with registered fungicides.

**Late season cole crops** look excellent to us as well as to worms such as diamond back moth and imported cabbage worm looking for new succulent growth. Pressure is heavy at this time. Due to the resistance of diamond back moth to many insecticides, growers are having better luck with Bt and Spinosad products, although these will not control aphid populations, which may be building on the undersurface of the leaves. **IPM**



Halloween pumpkin.



Indian corn.



Tiger stripe pumpkins.

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## ACTUAL AND PREDICTED DEGREE-DAY ACCUMULATIONS SINCE MARCH 1 2010 (\*)

| STATION<br>OR<br>DISTRICT | BASE 42 BE DEGREE-DAYS |               |             |             | BASE 50 BE DEGREE-DAYS |               |             |             |
|---------------------------|------------------------|---------------|-------------|-------------|------------------------|---------------|-------------|-------------|
|                           | AS OF<br>2009          | 09/21<br>2010 | BY<br>09/26 | BY<br>10/01 | AS OF<br>2009          | 09/21<br>2010 | BY<br>09/26 | BY<br>10/01 |
| +-----+-----+             |                        |               |             |             |                        |               |             |             |
| WEST UP NORMS**           |                        | 2876          | 2928        | 2979        |                        | 1803          | 1828        | 1852        |
| MARQUETTE                 | 2526                   | 3192          | 3230        | 3284        | 1481                   | 1993          | 2008        | 2031        |
| STEPHENSON                | 2901                   | 3569          | 3612        | 3671        | 1794                   | 2349          | 2366        | 2394        |
| +-----+-----+             |                        |               |             |             |                        |               |             |             |
| EAST UP NORMS             |                        | 2637          | 2690        | 2738        |                        | 1577          | 1600        | 1621        |
| CHATHAM                   | 2478                   | 3120          | 3162        | 3212        | 1447                   | 1940          | 1956        | 1975        |
| SSMARI E                  | 2617                   | 3406          | 3452        | 3507        | 1519                   | 2118          | 2136        | 2156        |
| +-----+-----+             |                        |               |             |             |                        |               |             |             |
| N. W. LP NORMS            |                        | 3186          | 3252        | 3312        |                        | 2053          | 2089        | 2120        |
| PELLSTON                  | 2649                   | 3427          | 3488        | 3551        | 1598                   | 2217          | 2250        | 2280        |
| +-----+-----+             |                        |               |             |             |                        |               |             |             |
| N. E. LP NORMS            |                        | 3114          | 3177        | 3235        |                        | 1984          | 2016        | 2046        |
| ALPENA                    | 2895                   | 3591          | 3650        | 3715        | 1771                   | 2341          | 2371        | 2402        |
| HAWKS                     | 2799                   | 3524          | 3582        | 3646        | 1711                   | 2288          | 2317        | 2348        |
| ROGERCITY                 | 2893                   | 3446          | 3503        | 3565        | 1750                   | 2215          | 2243        | 2273        |
| +-----+-----+             |                        |               |             |             |                        |               |             |             |
| W. CENT. LP NORMS         |                        | 3467          | 3540        | 3608        |                        | 2279          | 2320        | 2357        |
| FREMONT                   | 3350                   | 4055          | 4136        | 4214        | 2106                   | 2715          | 2765        | 2804        |
| HART                      | 3193                   | 3916          | 3994        | 4070        | 1976                   | 2598          | 2646        | 2683        |
| LUDINGTON                 | 2987                   | 3753          | 3828        | 3900        | 1798                   | 2465          | 2510        | 2546        |
| MUSKEGON                  | 3636                   | 4418          | 4506        | 4591        | 2356                   | 3043          | 3099        | 3142        |
| +-----+-----+             |                        |               |             |             |                        |               |             |             |
| CENT. LP NORMS            |                        | 3553          | 3626        | 3693        |                        | 2353          | 2394        | 2432        |
| ENTRICAN                  | 3280                   | 3969          | 4036        | 4113        | 2046                   | 2659          | 2700        | 2739        |
| +-----+-----+             |                        |               |             |             |                        |               |             |             |
| E. CENT. LP NORMS         |                        | 3592          | 3672        | 3744        |                        | 2387          | 2433        | 2473        |
| SAGINAW                   | 3524                   | 4306          | 4387        | 4479        | 2256                   | 2969          | 3018        | 3065        |
| STANDISH                  | 3071                   | 3812          | 3884        | 3965        | 1898                   | 2540          | 2582        | 2622        |
| +-----+-----+             |                        |               |             |             |                        |               |             |             |
| S. W. LP NORMS            |                        | 3917          | 4008        | 4091        |                        | 2655          | 2709        | 2758        |
| ALLENDALE                 | 3371                   | 4056          | 4147        | 4239        | 2112                   | 2710          | 2770        | 2817        |
| BHARBOR                   | 3752                   | 4398          | 4496        | 4596        | 2439                   | 3022          | 3088        | 3142        |
| FENNVILLE                 | 3491                   | 4197          | 4291        | 4386        | 2220                   | 2833          | 2895        | 2945        |
| GRAPIDS                   | 3822                   | 4550          | 4652        | 4755        | 2509                   | 3159          | 3228        | 3284        |
| HUDSNVILLE                | 3734                   | 4317          | 4414        | 4511        | 2430                   | 2932          | 2997        | 3048        |
| NUNICA                    | 3459                   | 4091          | 4183        | 4275        | 2211                   | 2770          | 2831        | 2880        |
| SOUTHBEND                 | 4016                   | 4665          | 4769        | 4875        | 2677                   | 3251          | 3323        | 3380        |
| +-----+-----+             |                        |               |             |             |                        |               |             |             |
| S. CENT. LP NORMS         |                        | 3830          | 3916        | 3993        |                        | 2590          | 2641        | 2686        |
| COLDWATER                 | 3806                   | 4426          | 4520        | 4615        | 2502                   | 3049          | 3112        | 3162        |
| ELANSING                  | 3627                   | 4160          | 4249        | 4338        | 2332                   | 2813          | 2871        | 2917        |
| +-----+-----+             |                        |               |             |             |                        |               |             |             |
| S. E. LP NORMS            |                        | 3853          | 3943        | 4022        |                        | 2602          | 2656        | 2702        |
| DETROIT                   | 4073                   | 4744          | 4842        | 4946        | 2712                   | 3334          | 3399        | 3453        |
| FLINT                     | 3537                   | 4364          | 4454        | 4550        | 2262                   | 3015          | 3074        | 3122        |
| HELL                      | 3614                   | 4249          | 4337        | 4430        | 2331                   | 2900          | 2956        | 3003        |
| LAPEER                    | 3417                   | 4093          | 4178        | 4267        | 2177                   | 2784          | 2838        | 2883        |
| ROMEO                     | 3546                   | 4265          | 4353        | 4447        | 2276                   | 2920          | 2977        | 3024        |
| SALINE                    | 3645                   | 4231          | 4319        | 4411        | 2363                   | 2888          | 2944        | 2991        |
| TOLEDO                    | 4076                   | 4724          | 4822        | 4925        | 2720                   | 3323          | 3388        | 3441        |

\* Since weather data for some agricultural stations are not available prior to April 1st, GDD values for those stations during February and March are estimated with closest available station data.

\*\* District normals were calculated as the mean of daily GDD totals at several stations within each district for the period 1951-1980.

Report generated at 09:42, 09/22/10

Michigan State University Cooperative Agricultural Weather Service  
 Cumulative Precipitation Summary For 09/21/2010

PRECIPITATION TOTALS SINCE

| STATION    | DIST | 09/15/2010  | 09/08/2010     |               | 08/25/2010     |               | 04/01/10       |               |
|------------|------|-------------|----------------|---------------|----------------|---------------|----------------|---------------|
|            |      | (last week) | (last 2 weeks) | Dev.<br>Norm. | (last 4 weeks) | Dev.<br>Norm. | (since Apr. 1) | Dev.<br>Norm. |
| MARQUETTE  | WU   | 1.68        | 2.24           | 0.41          | 3.59           | -0.04         | 22.30          | 3.28          |
| STEPHENSON | WU   | 1.18        | 1.54           | -0.29         | 3.86           | 0.23          | 21.76          | 2.74          |
| CHATHAM    | EU   | 1.52        | 2.46           | 0.62          | 6.26           | 2.82          | 22.92          | 4.96          |
| SSMARIE    | EU   | 0.94        | 1.72           | -0.12         | 5.28           | 1.84          | 18.30          | 0.34          |
| PELLSTON   | NWL  | 1.29        | 1.76           | 0.02          | 4.13           | 0.86          | 20.88          | 4.03          |
| ALPENA     | NEL  | 0.76        | 1.28           | -0.42         | 1.64           | -1.56         | 18.78          | 1.90          |
| HAWKS      | NEL  | 0.73        | 1.18           | -0.52         | 1.62           | -1.58         | 17.34          | 0.46          |
| ROGERCITY  | NEL  | 0.69        | 1.23           | -0.47         | 1.69           | -1.51         | 22.26          | 5.38          |
| FREMONT    | WCL  | 1.86        | 2.36           | 0.78          | 4.80           | 1.75          | 16.09          | -0.97         |
| HART       | WCL  | 0.35        | 0.96           | -0.62         | 2.82           | -0.23         | 19.51          | 2.45          |
| LUDINGTON  | WCL  | 0.40        | 0.89           | -0.69         | 2.35           | -0.70         | 18.35          | 1.29          |
| LUDINGTON  | WCL  | 0.40        | 0.89           | -0.69         | 2.35           | -0.70         | 18.35          | 1.29          |
| MUSKEGON   | WCL  | 1.62        | 2.15           | 0.57          | 6.10           | 3.05          | 20.88          | 3.82          |
| ENTRICKAN  | CL   | 0.72        | 1.11           | -0.40         | 1.97           | -1.01         | 15.04          | -2.87         |
| SAGINAW    | ECL  | 0.90        | 1.26           | -0.17         | 2.01           | -0.52         | 16.80          | 0.79          |
| STANDISH   | ECL  | 1.39        | 1.63           | 0.20          | 2.71           | 0.18          | 22.74          | 6.73          |
| ALLEDALE   | SWL  | 1.00        | 1.53           | -0.08         | 2.59           | -0.23         | 21.92          | 3.57          |
| BHARBOR    | SWL  | 1.01        | 1.31           | -0.30         | 2.10           | -0.72         | 15.93          | -2.42         |
| FENVILLE   | SWL  | 3.07        | 3.43           | 1.82          | 3.98           | 1.16          | 27.96          | 9.61          |
| GRAPIDS    | SWL  | 1.11        | 1.87           | 0.26          | 2.49           | -0.33         | 24.51          | 6.16          |
| HUDSNVLE   | SWL  | 0.85        | 1.24           | -0.37         | 1.69           | -1.13         | 20.71          | 2.36          |
| NUNICA     | SWL  | 1.96        | 2.39           | 0.78          | 3.82           | 1.00          | 24.03          | 5.68          |
| SOUTHBEND  | SWL  | 0.76        | 1.14           | -0.47         | 2.12           | -0.70         | 22.12          | 3.77          |
| BATH       | SCL  | 1.95        | 2.49           | 1.09          | 3.71           | 1.13          | 16.19          | -1.96         |
| COLDWATER  | SCL  | 0.03        | 0.13           | -1.27         | 1.32           | -1.26         | 18.12          | -0.03         |
| ELANSING   | SCL  | 1.69        | 2.18           | 0.78          | 3.42           | 0.84          | 19.42          | 1.27          |
| DETROIT    | SEL  | 1.76        | 2.15           | 0.83          | 2.31           | 0.01          | 21.50          | 4.14          |
| FLINT      | SEL  | 1.22        | 1.69           | 0.37          | 2.84           | 0.54          | 16.29          | -1.07         |
| HELL       | SEL  | 1.31        | 1.63           | 0.31          | 2.07           | -0.23         | 27.68          | 10.32         |
| LAPEER     | SEL  | 1.32        | 1.74           | 0.42          | 2.90           | 0.60          | 18.18          | 0.82          |
| ROMEO      | SEL  | 1.08        | 1.54           | 0.22          | 1.72           | -0.58         | 15.15          | -2.21         |
| SALINE     | SEL  | 1.06        | 1.28           | -0.04         | 1.60           | -0.70         | 24.11          | 6.75          |
| TOLEDO     | SEL  | 0.55        | 0.89           | -0.43         | 1.27           | -1.03         | 22.40          | 5.04          |

Report generated at 09:42, 09/22/10



## **Crop Advisory Team Alerts**

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**The Crop Advisory Team Alerts are published by the Michigan State University IPM Program**

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Additional support provided by the MSU Vegetable Team.