



# WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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## Vegetables

**Vegetable Insects** - Joanne Whalen, Extension IPM Specialist; [jwhalen@udel.edu](mailto:jwhalen@udel.edu)

### New Label.

Aventis recently received a registration for Assail 70WP (acetamiprid). It is member of a class of insecticides known as the chloronicotinyls. Other insecticides belonging to this class of chemistry include imidacloprid (Gauchó, Prescribe, Provado and Admire) and thiamethoxam (Cruiser, Actara and Platinum). It received a registration for aphid and whitefly control on leafy vegetables, cole crops, eggplants, peppers and tomatoes. It also has a label for Colorado potato beetle control on eggplants, peppers and tomatoes.

### Asparagus.

Be sure to start checking for asparagus beetles as soon as spears are visible. Edge treatments have provided effective control, but only when applied before significant egg laying occurs and beetles move into the main sections of a field. Two applications are often needed for effective control. Ambush, Pounce or Sevin will provide control.

### Peas, Sweet Corn and Snap Beans.

Be sure to consider seed corn maggot control, especially where a green cover crop is plowed under close to planting, manure is used and/or a field is minimum tilled. A seed treatment containing diazinon or permethrin should be used on early-planted sweet corn. In fields with a high potential for seed corn maggot (combinations of the above conditions), a soil

insecticide will also be needed. Gauchó treated sweet corn and snap bean seed will also provide effective seed corn maggot control. On all 3 crops, the use of diazinon 50W as a planter box treatment has provided the good control in recent years. Seed must be treated with a commercial fungicide; graphite may be needed to prevent bridging, and you should not treat more than you plan to plant in any one-day. The diazinon 50W rate for seed corn maggot is 1/2 oz per bushel of seed.

### Sweet Corn.

Winter conditions have been very favorable for overwintering flea beetles. Although populations have been fairly light the last two seasons, flea beetle management should be considered on early-planted varieties susceptible to Stewart's Bacterial Wilt. If you are using a soil insect insecticide for flea beetle control, the only labeled products providing flea beetle control are Counter and Furadan. Regent is not labeled on sweet corn. Another control option is Gauchó treated seed. In 2 years of research trials, it has provided very effective beetle control and management of Stewart's Wilt.



**Winter Temperature Index For Predicting Stewart's Wilt in Delaware Sweet Corn, 1995-2002.**

**Average monthly temperatures in °F at Georgetown, DE REC. 1995-2002.**

	2001-02	2000-01	1999-00	1998-99	1997-98	1996-97	1995-96
December	43.2	31.2	40.3	41.3	39.3	42.0	33.5
January	40.0	33.8	33.9	39.5	42.6	35.0	33.5
February	39.9	38.8	39.7	38.7	40.6	41.5	34.7
<b>INDEX</b>	<b>123.1</b>	<b>103.8</b>	<b>113.9</b>	<b>119.5</b>	<b>122.5</b>	<b>118.5</b>	<b>101.7</b>

**Average monthly temperatures in °F at Newark, DE Experiment Sta. 1995-2002.**

	2001-02	2000-01	1999-00	1998-99	1997-98	1996-97	1995-96
December	43.3	31.1	39.1	41.0	38.4	40.9	32.1
January	39.6	31.5	32.6	34.8	40.9	33.2	30.9
February	40.1	38.4	37.8	38.0	40.6	40.3	34.7
<b>INDEX</b>	<b>123.0</b>	<b>101.0</b>	<b>109.5</b>	<b>113.8</b>	<b>119.9</b>	<b>114.2</b>	<b>97.7</b>

**Severity Index:** < 90, usually absent; 90-100, intermediate; >100, usually severe.

**Prediction for 2002**

Newark: **Severe**

Georgetown: **Severe**

**Note: These are highest values since the 1997-98 growing season.**

For control of Stewart's wilt, which is vectored by the corn flea beetle, it is important to control the flea beetle (See sweet corn insect control section). Plant resistant varieties and control the beetles early. The above index predicts conditions favorable for overwintering flea beetle populations not the abundance of the bacteria. The prediction has its limitations, but indicates that flea beetles should be abundant. The question always becomes how much bacteria is available for them to spread.

**Spinach.**

Be sure to check overwintered fields for the presence of **white rust**. Once observed, apply Quadris. If more applications are needed, alternate with a low rate of a copper fungicide.

**Bell Peppers.**

To control **Phytophthora blight**, avoid poorly drained fields and plant resistant varieties such 'Paladin' or 'Aristotle'. For bacterial spot control use chlorine treated seed or treat seed with Clorox.



**Sinbar Receives Section 18 Label for Use on Watermelons in Delaware** - Ed Kee, Extension Vegetable Crops Specialist; [kee@udel.edu](mailto:kee@udel.edu)

EPA granted the Section 18 label for use on watermelons in Delaware. The rate is 3 to 4 ounces, use as a preemergence treatment. The use season expires on June 15, 2002. Other restrictions include a 100 foot buffer from any streams or waterways.



**Kenny Brothers LLC Begins Construction on Pickle Grading Facility Near Bridgeville** - Ed Kee, Extension Vegetable Crops Specialist; [kee@udel.edu](mailto:kee@udel.edu)



Kenny Brothers has begun construction on the new Pickle Grading Facility on Adams Road, west of the Perdue grain facility near Bridgeville. Operations will begin in July. Kenny has contracted with 14 local growers to provide more than 890,000 bushels of pickling cucumbers for the upcoming growing season. The pickling cucumbers are washed, graded for defects, segregated into as many as 14 different size categories, hydrocooled to reduce field temperature, and then shipped to pickle manufacturing plants for final processing.

Kenny has a similar operation near Hemlock, Michigan, and supplies raw product for several pickle companies. The Delaware operation represents approximately \$3.2 million in farm income.



**Pictsweet Frozen Foods Announces Plans For Delaware** - Ed Kee, Extension Vegetable Crops Specialist; [kee@udel.edu](mailto:kee@udel.edu)

Pictsweet Frozen Foods, of Bells, Tennessee, has announced plans to establish a receiving, washing, and hydrocooling station near Bridgeville by 2003. The facility will eventually handle 25-30 million pounds of product generated from 9 to 10,000 acres of production. Peas, sweet corn, and lima beans are the three crops that will be involved. A key component of Pictsweet's decision to operate in Delaware is their recognition of the region as a good source of lima bean supply.

Plans are being established to contract approximately 1,500 acres of lima bean production for delivery this year to a temporary facility.

All products produced this year and in future years, once cleaned and cooled, will be shipped to Bells for final freezing and packaging.

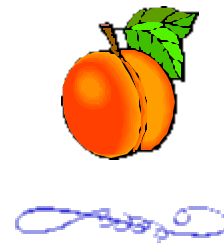


***Fruit***

**Fruit Insects** - Joanne Whalen, Extension IPM Specialist; [jwhalen@udel.edu](mailto:jwhalen@udel.edu)

**Peaches.**

EPA has approved our Section 18 request for the use of Provado on stone fruit to control aphids that vector the Plum Pox Virus. This emergency exemption (Section 18) is effective from April 1 through Oct 15, 2002. Growers may use a maximum of 4 applications at a rate of 5-6 ounces of product per acre. No more than 24 ounces of product may be applied per acre per year. There is a zero day pre-harvest interval.



## ***Field Crops***

**Field Crop Insects** - Joanne Whalen, Extension IPM Specialist; [jwhalen@udel.edu](mailto:jwhalen@udel.edu)

### **Alfalfa.**

As we anticipated, alfalfa weevils are very active in many fields. In many cases, feeding damage is easily detected and some fields have already reached threshold levels. Since the alfalfa weevil overwinters in both the adult and egg stage, the larvae we are finding at this time are a result of eggs laid last fall. Overwintered adults can also lay eggs in stems any time temperatures are above 48 degrees F. Although egg laying occurs in the fall and spring, larvae hatching from spring-laid eggs cause the most damage. The weevil passes through four larval stages in approximately three weeks. Therefore, you should anticipate two periods or cycles of egg hatch and subsequent larval activity this spring. Sprays applied early may not carry you through until the first cutting. Therefore, it will be important to scout fields carefully. If fields have reached threshold and damage is visible, you will need to treat as soon as possible, but remember a second application may be needed before harvest. As a general guideline, treatment should be applied if damage is visible on 50% or more of the tips. However, a more accurate way to time an application and try to avoid multiple insecticide applications would be to sample stems and determine the number of weevils per stem. A minimum of 30 stems should be collected per field, placed top first in a bucket to dislodge larvae from the tips, and then count the number of weevils per stem. The following thresholds, based on the height of the alfalfa, should be used to make a treatment decision: up to 11 inches tall - 0.7 per stem; 12 inches - 1.0 per stem; 13 - 15 inch - 1.5 per stem; 16 inches tall - 2.0 per stem and 17-18 inches tall - 2.5 per stem. Numerous pyrethroids are now labeled for alfalfa weevil including Ambush, Baythroid, Mustang (new label for 2002), Pounce and Warrior. Furadan, Imidan, Lorsban and Lannate will also provide control. If you plan to use Furadan, the high-labeled rate (2 pt/A) should be used to provide extended control.

***The following information was sent from EPA to all Pesticide Coordinators in the Region Regarding Insecticide Applications on Mixed Stands of Alfalfa:***

In the summer of 2001 the Vermont Department of Agriculture and several other states became involved

in investigating possible misuse of insecticides for armyworm control on pastures. These investigations brought to light a number of questions regarding the applicability of label terms to the sites where applications had been made to mixed stands of alfalfa. For example, insecticides were used on alfalfa, for which they were labeled, and on grasses, for which they were not. EPA's response was that ***each component of a pasture crop does need to have a tolerance and be identified on the label as a use site.*** Thus, application of a product registered for alfalfa only to a mixed stand of alfalfa/clover/grass would be a use inconsistent with the label, irrespective of the percentage of the stand consisting of alfalfa. EPA recognizes that only a few products registered only for alfalfa currently include the appropriate label instruction: "Apply only to fields planted to pure stands of alfalfa". EPA plans to notify and require registrants of products labeled for use on alfalfa to clarify their labels by incorporating the above limitation when there is only an alfalfa tolerance. At the same time EPA plans to encourage registrants to petition for a crop group tolerance for grasses that would cover all the forage grasses. However, since this will not happen in time for this use season and we will likely see alfalfa weevil and other pest damage in mixed stands, it will be important to only use products labeled for mixed stands. The only insecticides with **tolerances and a label** on alfalfa/clover/grass mixtures that may be effective against alfalfa weevil and other pests include carbaryl (Sevin 80S, Sevin XLR), and malathion. Lannate only has a label for Bermudagrass pastures.

### **Field Corn.**

(a) **Black Cutworm:** In cooperation with UAP Inc., we will again be running pheromone traps for black cutworm. The first moths were caught last week in Bridgeville, Middletown and Selbyville. Larvae will be large enough to begin cutting when about 300 base-50 degree-days have accumulated since peak moth activity and egg laying. By calculating cutworm hatch and development over time, we can anticipate when to look for damage. Pheromone trap catches help us determine when peak moth flight and egg laying occurs; however, they cannot predict the amount or magnitude of cutting that will occur. The presence of a major flight only means that the potential for an outbreak exists. Adverse weather, lack of adequate food for newly hatched larvae, predation, and disease can

reduce larval populations. You can use pheromone trap and degree-day information to estimate or predict when first cutting will occur. Scouting of seedling corn near the first cutting date is the best way to determine whether a problem exists. For the most recent pheromone trap catches, please check our website at [www.udel.edu/IPM](http://www.udel.edu/IPM). Just a reminder, if you plan to tank mix a pyrethroid with a herbicide for cutworm control, it should be done at or immediately following plantings. Pyrethroids combined with early burn-down applications 2-3 weeks before harvest have not provided effective control.

- (b) **Grubs:** Larvae can now be found in the top four-inches of soil so it is a good time to check fields for grub activity. In most cases, the highest populations can be found in sandier areas of fields, especially in double crop soybean stubble. In sandy soils, the treatment threshold is 0.5 - 1 grub per square foot. In heavier soils, the threshold is 2 per square foot.
- (c) **Slugs :** As a result of the recent cooler, wet weather, we can easily find slug eggs and newly hatched juveniles under surface trash. In our area, most field slugs pass through a single generation per year. Although they generally overwinter in the egg stage, we can often find juveniles and adults all winter, especially if conditions are warm. Since slugs may live 12 to 15 months and eggs are laid both in the early spring and fall, overlapping generations of adult and juvenile stages may be observed. The following factors favor slug outbreaks: no-tillage field crop production practices; development of dense weed cover or addition of organic matter such as manure; mild winters which increase the number of overwintering stages, especially adult slugs; prolonged periods of favorable temperatures (63 to 68 degrees) combined with evenly distributed rainfall that maintains soil moisture at 75% saturation; high pH (6.3 - 6.7); over fertilization with nitrogen and cool growing conditions which delay crop development and extend the period of susceptibility of the crop to slug injury. You can identify fields with the potential for problems before planting by using a shingle or covered pit to provide a humid, sheltered hiding place for slugs. The pit should be four inches in diameter and six inches deep. An aluminum foil-covered shingle or a board can be used as a cover to provide a cool

refuge from the sun. Slugs tend to congregate in large numbers in these shelters. As a rule of thumb, you can expect problems in a field if you find one to five slugs per trap. Once a field is planted, you should examine fields with a potential for damage on weekly basis. If the seed slot is not closed at planting, slugs can feed underground resulting in reduced stands. Once plants start to emerge, slug damage will appear as a shredding of the leaves since they feed by grating away the surface of the plant tissue. The presence of "slime trails" can also be used to distinguish slug injury. Look for slugs under dirt clods and surface trash around 5 plants in 10 locations in a field. Since slugs are nocturnal, sampling should be done in the evening or when weather is cloudy. An application of a bait or liquid nitrogen may be needed if conditions are favorable for slug development and you find 5 or more slugs around each plant from the spike to 3-leaf stage.

Management options are limited to the use of baits and cultural practices. If a number of factors are present which favor slug development, then a combination of cultural practices and baits may be needed. In recent years, the development of smaller pellets (often-called mini pellets) of metaldehyde baits have resulted in improved control. Research from Ohio has found that you can get good control and distribution at the 10 lbs. per acre rate of the mini-pellets. Metaldehyde baits may attract slugs from up to 3 feet away. Applications of liquid nitrogen applied soon after plant emergence can provide effective suppression if applied between midnight and 2 AM. Generally 20 gallons per acre of 30% N has been used. Nitrogen formulations containing sulfur have been reported to provide superior control. Cultural practices including the use of trash whippers to remove residue over the seed furrow and strip tillage can help corn grow ahead of the damage. Most baits as well as cultural practices only reduce the slug activity by buying time to enable the crop to outgrow the problem.

### **Timothy.**

Reports from around the region indicate that cereal rust mites are very active in timothy. During the past two seasons, economic levels of rust mites have been found in timothy grown in Delaware. In 2001, we received a Section 24 C registration for Sevin XLR Plus on timothy for rust mite management. This label is also in effect in MD and PA. The following are the use

directions for this label: Apply 3 pts per acre (1.5 pounds ai per acre) with ground equipment only with adequate water for complete coverage (20 or more gallons by ground). One application should provide enough suppression to prevent economic yield and quality losses. Apply at approximately 3-4 weeks after green-up in fields with a previous history of rust mites and/or when 25% of the plant tillers exhibit curled tips of the new leaf blades. You should be checking for mites and the early signs of infested leaves, which tend to curl and show a rusting appearance. These mites are microscopic, so the use of a 20x-magnifying lens is necessary. It has a 30 day wait until harvest. (Use **Information provided by Galen Dively - University of Maryland**).

### **Wheat.**

We have started to see the first cereal leaf beetle adults and eggs in wheat. Although populations have been sporadic in recent years, the warm winter conditions have been favorable for overwintering adults. Cool weather after egg hatch can help to regulate populations, so careful scouting is still necessary. In recent years, the threshold for cereal leaf beetle has been adjusted to include sampling for eggs, especially in high management wheat fields. The eggs are elliptical, about 1/32 inch long, orange to yellow in color when first laid changing to a burnt orange prior to hatching. Check our website for pictures of cereal leaf beetle adults, larvae and eggs ([www.udel.edu/IPM](http://www.udel.edu/IPM)) Generally, eggs are laid singly or in small scattered groups (end-to-end) on the upper leaf surface and parallel to the leaf veins. For high management fields, the threshold is based on the presence of eggs and small larvae. Cereal leaf beetle larvae are brown to black, range in size from 1/32 to 1/4 inch long, and eat streaks of tissue from the upper leaf surface. Since cereal leaf beetle populations are often unevenly distributed within the field, it is important to carefully sample fields so that you do not over or under estimate a potential problem. Eggs and small larvae should be sampled by examining 10 tillers from 10 evenly spaced locations in the field while avoiding field edges. This will result in 100 tillers (stems) per field being examined. Eggs and larvae may be found on leaves near the ground so careful examination is critical. You can also check stems at random while walking through a major portion of the field and sampling 100 stems. In high management fields with good yield potential and/or where the potential for cereal leaf beetle problems is high, the

threshold of 25 or more eggs and/or small larvae per 100 tillers should be used. If you are using this threshold, it is critical that you wait until at least 50 – 60% are in the larval stage (i.e. after 50% egg hatch). If the egg/larvae threshold is not used, the threshold of 0.5 larvae per stem and 10% defoliation can provide enough lead-time to provide good control if fields are scouted on a routine basis. Sevin will provide good control of cereal leaf beetles although past experience demonstrated that it could result in aphid explosions by reducing predator populations. Furadan provides good control; however, it cannot be applied once grain is heading. Lannate and Warrior provide good control of the entire insect complex present in small grains (cereal leaf beetles, aphids, armyworm and grass sawfly). Mustang (a pyrethroid from FMC) recently received a wheat label for cereal leaf beetle, armyworm and sawfly control. **Neither Mustang nor Warrior are labeled on barley at this time.**



**Field Crop Diseases** - - *Bob Mulrooney, Extension Plant Pathologist; [bobmul@udel.edu](mailto:bobmul@udel.edu)*

### **Wheat.**

**Powdery mildew** can be found in some fields at the present time. Scout your fields regularly now. The question always seems to be how much infection can the crop stand before experiencing yield loss. The answer I give that nobody wants to hear is that it depends on the weather. The conventional wisdom is that yield losses from powdery mildew are related to the amount of infection on the flag leaf (the last leaf below the head) and the leaf below the flag leaf. Those are the leaves that you really need to protect from infection. If there is plenty of mildew on the lower leaves and the weather forecast is predicting favorable weather for infection (high humidity and cool temperatures below 80°F), infection will likely occur in the upper canopy. The other factor to consider is the amount of nitrogen applied and the yield potential of the crop. Nitrogen applications of 90-120 lbs/A either at green-up or split are very favorable for mildew development and would make the crop more vulnerable. Yield potential of 90+ bu/A will tip the scales in favor of an application as well to protect that yield potential. Usually I would recommend to wait until the flag leaf is present before making a decision. The fungicides that are currently labeled for powdery

mildew control are Tilt 4 fl. oz./A and Stratego, which contains Tilt and trifloxystrobin. Stratego has to be applied before or at flag leaf emergence. Tilt alone can be applied up to flowering. Quadris can be applied late as well, but at the rate for good powdery mildew, control, Quadris is expensive compared to Tilt and Stratego. Waiting as long as possible prevents the necessity of having to make a second application if weather turns out to be very favorable later in the season. Last year it was usually dry from mid April to mid May and powdery mildew did not develop much.



**Grain Marketing Highlights** - Carl German,  
*Extension Crops Marketing Specialist;*  
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### **2002 Prospective Plantings and March 1 Grain Stocks in All Positions**

USDA released the Prospective Plantings and March 1 Grain Stocks Report on Thursday, March 28th for 2002 new crop planting intentions and current marketing year grain in all positions. Commodity traders have exhibited mixed reactions to the content of the report since its release, although it is anticipated that much of the information contained in the report had been previously bid into commodity prices.

The nation's farmers intend to plant 79 million acres of corn, representing a 4 percent increase above last year and a 1 percent decrease from 2000. The projection was reported to be at the high end of pre-report trade estimates. Trend line yields indicate a potential 2002 corn crop of 9.9 billion bushels.

U.S. soybean planting intentions were projected at 72.9 million acres, down 2 percent from last year, and in direct comparison to 1998's 72.7 million acres. The soybean planting intentions were reported at the low end of pre-report trade estimates. Trend line soybean yields are indicative of a 2.8 billion bushel 2002 soybean crop.

U.S. wheat planting intentions were reported at 59 million acres, 1 percent less than last year and the lowest level since 1972. The wheat acreage estimate was just below the low end of pre-report trade estimates.

### **Grain Stocks in All Positions**

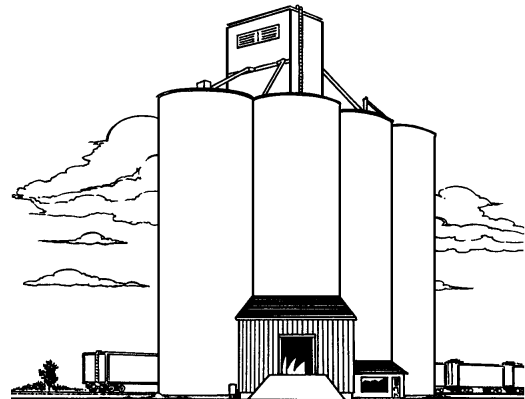
U.S. corn stocks in all positions was reported at 5.796 billion bushels, 246.5 million bushels less than the March 1 grain stocks report for this time last year. Corn stocks were well within pre-report trade estimates.

Soybean stocks were reported at 1.335 billion bushels, 67.9 billion bushels less than last year. Soybean stocks were slightly below pre-report stock estimates.

U.S. wheat stocks were reported at 1.210 billion bushels, 127 million bushels less than last year. U.S. wheat stocks were reported to be at the high end of the pre-report industry estimates.

### **Marketing Strategy**

Commodity markets will now turn their attention to the weather and its effect on planting progress, growing conditions, and crop development. Prices remain at levels that are too low to advance new crop sales. Opportunities to lock or take basis contracts on corn, soybeans, or wheat that are intended for harvest delivery should be checked. For example, basis bids for new crop soybeans are currently being offered at even (0) to 20 under. Last year harvest delivered soybeans were bid at 42 to 44 under the Nov. at harvest.



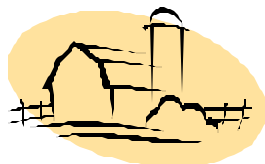
**Hay and Pasture Fertilization - Richard W. Taylor, Extension Agronomist; [rtaylor@udel.edu](mailto:rtaylor@udel.edu)**

Although March was at or slightly above average for rainfall, the longer-term consequences of the fall and winter's drought leaves in doubt how productive a summer we will have from a forage viewpoint. There is little to do on those pastures and hay fields that are predominately clover or alfalfa other than planning ahead to be sure we apply adequate boron on the stands immediately after the first grazing cycle or harvest. Boron availability declines during periods of drought stress, so adding it after the first cycle or cut will improve chances that enough will be available for crop use during the summer. If you typically wait until very late (late May or June) to take the first hay harvest on clover-grass mixtures, you should consider applying boron along with any needed potassium and phosphorus before too much growth occurs this spring.

For pastures and hay fields that contain little clover and depend upon fertilizer N or manure N to boost yields from the grasses, consider adding an application now to boost first harvest yields. If the dry weather does continue, we may end up with little regrowth on many grass pasture and hay fields, so the early spring growth flush will constitute the majority of our yearly yield. Research data varies on the response you can expect, but it will improve your protein levels and feeding quality. Our Soil Test Laboratory recommendations generally call for about 50 lb N/A per cutting or grazing cycle.



**Agricultural Fact -**



Brazil and Argentina have 50% of the world trade of combined soybean and related product exports, easily surpassing the United State's 35% share.



Weather Summary	
Weeks of March 16 to April 5, 2002	
<b>Rainfall:</b>	0.23 inches: March 17 0.78 inches: March 18 0.63 inches: March 20 0.51 inches: March 26 0.27 inches: March 27 1.34 inches: March 31 0.14 inches: April 1
Readings taken for the previous 24 hours at 8 a.m.	
<b>Air Temperature:</b>	Highs Ranged from 79°F on April 3 to 47°F on March 17 & 18.
	Lows Ranged from 47°F on March 31 to 19°F on March 23.
<b>Soil Temperature:</b>	49.6°F average for March 16-31. 54.3°F average for April 1-4. (Soil temperature taken at a 2 inch depth, under sod)

Web Address for the U of D Research & Education Center:  
<http://www.rec.udel.edu>

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