

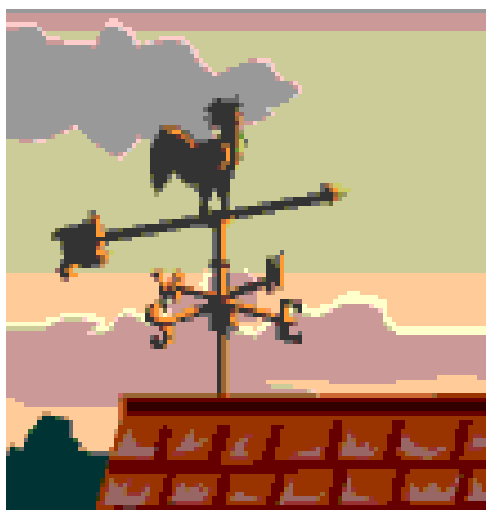
PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

MAY 26, 2004

Vegetable Crops Diseases

Andy Wyenandt, Ph.D., Post Doctoral Associate in Vegetable Pathology



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The last few weeks has brought with it the summer-like heat and the last few rainy days of May. During this period I have had the opportunity to travel around Cumberland County with Wesley Kline, Gloucester County with Michelle Infante-Casella and Atlantic County with Rick VanVranken to visit with growers and walk around their fields. Like the weather, county agents and plant pathologists, alike, can bring the good, the bad and the ugly. The good news is that no one ran the 'new guy' out of the state just yet, and everyone that Wes, Michelle and Rick introduced me to were extremely pleasant to talk with and happy I was here. The bad news is that the county agents and I did see a few problems associated with the weather.

On newly transplanted peppers, stem burn associated with black plastic mulch and the heat of a weekend ago was prevalent in some areas. The best way to avoid this, especially if you know the temperatures are going to be high and if no rain or drip lines are set up, is to make sure the holes through the black plastic mulch are open enough and use soil to prop transplants upright. This is especially important if transplants are 'leggy'. Do your best to make sure they won't flop over and lay across the mulch.

The heat also brought with it heavy winds and caused a lot of newly transplanted and direct-seeded crops to wilt during the day. Tip burn on lettuce plantings began to show up last week in some areas. Tip burn occurs when more water is lost than is taken up by the plant. Unfortunately, once tip burn occurs nothing can be done to reverse the damage.

A few days later heavy isolated showers showed up across the area. In some areas to the west hail damage was present. Typical signs of hail damage include irregular 'shotholes' in leaves, leaves that appear to be sliced and/or irregular white spots that develop on stems and fruit and holes in mulch. Hail often falls in narrow bands, so if you suspect damage look for these narrow bands of damage in your fields.

If it wasn't the heat it was the rain and standing water was also a common problem this past week. Symptoms of **Phytophthora/Pythium** are beginning to show up in fields as well as on plant samples sent to the lab, so be aware that weather conditions have been and probably will be 'ripe for disease development'. Scout on a regular basis and plan your fungicide and irrigation programs accordingly. Unfortunately, this week's forecast suggests more of the same.

I look forward to meeting more farmers at twilight meetings and other educational programs. Best wishes on a successful growing season and thanks for the warm welcome. □

Introducing New RCE Vegetable Pathology Specialist

Zane Helsel, Chair, RCE Department of Extension Specialists

Dr. Andy Wyenandt (pronounced Y-nant) has been named the new Assistant Extension Specialist in Vegetable Pathology, stationed at the Rutgers Agricultural Research and Extension Center in Upper Deerfield. Dr. Wyenandt fills the position left open upon the tragic death of Dr. Steve Johnston in April, 2003.

He has recently completed his Ph.D. at The Ohio State University where he worked on Fusarium fruit rot of pumpkin and its control with cover crop mulches. Dr. Wyenandt's Masters work was on the assessment of an integrated disease management strategy for processing tomatoes in Ohio. A native of Ross, Ohio, Dr. Wyenandt gained practical experience on a sweet corn and vegetable farm in Ohio as he was growing up. As a graduate student, working with tomato and pumpkin, he extended his background and training to local growers, agriculture representatives and researchers through participating in farm tours and presenting his research at regional vegetable conferences in Ohio and neighboring states.

Although not officially beginning his Extension Specialist duties until January 1, 2005, Dr. Wyenandt and Rutgers Cooperative Extension developed a post doctoral opportunity to allow Dr. Wyenandt to begin work May 1. While Dr. Wyenandt will be involved in a few other activities until January, the vegetable industry will see Dr. Wyenandt at twilight meetings, farm visits and numerous other venues throughout the growing season. □

Pest Notes

Gerald M. Ghidui, Ph.D., Specialist in Vegetable Entomology

✓ **General:** The EPA has cancelled specific uses of dimethoate (all 5 technical registrants of dimethoate) effective January 28, 2004. Existing stock may be used on crops until January 27, 2005 (1 year after cancellation). The crops affected include:

- Broccoli raab
- Cabbage
- Collards
- Fennel
- Head lettuce
- Spinach
- Tomatillo

Dimethoate is an organophosphate (OP) insecticide, sold under the names of Cygon, Dimethoate, and DeFend.

✓ **Asparagus:** The heat brought out the **asparagus beetles**, found on both spears and ferns. For the spear stage during cutting, asparagus beetles can be controlled with Lannate, malathion, methoxychlor, Ambush, Pounce, or Sevin. Control is difficult during the hot temperatures because of the frequent cutting. For the fern stage (post-harvest only), all of the above plus SpinTor are registered.

County Agent Wes Kline reports **aphid** populations building on asparagus ferns during the current hot weather conditions. These pests are most important in newly seeded plantings and young cutting beds. Only malathion is registered for control of aphids in asparagus.

✓ **Cabbage:** Dave Bachinski of AgChem reports several cabbage fields with high populations of **diamondback moth**. This pest overwinters in the south, and usually arrives in New Jersey in August. However, it may survive in heated greenhouses, or be brought up on southern transplants in early spring. Once outdoors in spring, it can survive to reproduce. For diamondback moth larvae on cabbage, the most effective treatments include Avaunt, Proclaim, SpinTor, or a biological insecticide (Bt) such as Agree, Biobit, Crymax, Cutlass, DiPel, Javelin, Ketch, Lepinox, Mattch, Prolong, or XenTari. Note that a spreader-sticker may improve effectiveness, and thorough coverage is essential.

✓ **Potato:** Virginia reports a high density of **European corn borer** egg masses on potato plants in Painter and other areas, with tunnel injury being easily found in leaf axils. Currently South Jersey has recorded >650 degree days, which represents more than 50% of corn borer flight activity. Monitor moth activity for your area, and to determine first spray, use a threshold of 10% of the stems with borer entry holes in fresh market varieties, and 20% in processing varieties. Many insecticides are labeled and effective, including Avaunt, Ambush, Baythroid, Furadan, Penncap, Pounce, Monitor or SpinTor. If moth activity continues, apply a second application 7-10 days after the first.

Potato plants not treated with an insecticide have adults and small larvae feeding on the foliage. Even if potatoes were treated, monitor fields and look for a buildup of larvae. A treatment is recommended if 50 **potato beetle** adults or 200 larvae are found per 50 plants (an average of 1 adult of 4 larvae per plant). For a discussion of effective treatments and timing of applications, refer to pages F130-F131 in the *2004 Commercial Vegetable Production Recommendations for New Jersey*.

SEE PEST NOTES ON PAGE 3

Weed Control

Bradley A. Majek, Ph.D., Specialist in Weed Science

✓ **Asparagus:** End of cutting season. Apply Solicam or Devrinol immediately after the end of the cutting season for residual control of **annual grasses** and certain **broadleaf weeds**. Solicam also suppresses **yellow nutsedge** and certain **perennial grasses**. Use 2.5 to 5.0 lb/A of Solicam 80 DF per year or 4.0 to 8.0 lb/A of Devrinol. If an application was made in early spring, supplement the first application with a second application after the cutting season, but do not exceed the maximum labeled rate in one year.

Combine with 1.33 lb/A Sencor 75DF to control annual broadleaf weeds.

Dual Magnum has received a 24C Special Local Needs label for use in asparagus in New Jersey. Apply 1.33 to 2.0 pints/A for residual control of yellow nutsedge. Dual Magnum can be tank-mixed with other residual herbicides applied at the end of the cutting season.

Level ridges *before* applying herbicide if mechanical leveling of the soil is practiced. Rainfall or irrigation is needed to activate the preemergence herbicides, but the products are stable on the soil surface, and will not be lost if rainfall is delayed. Delay irrigation for 8 to 12 hours if weeds are present and postemergence herbicides are used.

When tillage is not practiced at the end of the cutting season, tank mix postemergence herbicides with residual herbicides applied at the end of the cutting season.

Apply Gramoxone Max at 1.5 pints/A plus nonionic surfactant immediately after the final cut to kill emerged annual grass and broadleaf seedlings. Emerged spears will also be killed, but spears beneath the soil surface will not be affected.

Sandea 75DF has received a label for use in asparagus. If emerged yellow nutsedge is present, apply Sandea at 0.66 ounces/A plus nonionic surfactant. Do *not* apply Sandea to crops treated with a soil applied organophosphate insecticide, or use a foliar applied organophosphate insecticide within 21 days before or 7 days after a Sandea application.

When **Canada thistle** is present, apply Stinger 3A at 0.5 to 0.66 pints/A. Do not exceed 0.66 pints/A per year. When Canada thistle is present in patches, treat the patches and about twenty feet beyond the patch on all sides where roots may be present. Do not apply Stinger as a spot treatment "sprayed to wet". Stinger is a residual herbicide, and accurate application of the recommended rate is necessary.

Consult your Cooperative Extension Office and the product label for additional information.

✓ **Corn (sweet):** Stinger 3A has received a label for use in sweet corn. Apply 2 to 10.5 fluid ounces of Stinger 3A per acre in one or two applications to control certain **annual** and **perennial broadleaf** weeds when sweet corn is less than 18 inches tall. Stinger controls weeds in the Composite and Legume plant families. Common annuals controlled include **galinsoga**, **ragweed species**, **common cocklebur**, **groundsel**, **pineappleweed**, **clover**, and **vetch**. Perennials controlled include **Canada thistle**, **goldenrod species**, **aster species**, and **mugwort** (wild chrysanthemum). Stinger is very effective on small seedling annual and emerging perennial weeds less than 2 to 4 inches tall, but is less effective and takes longer to work when weeds are larger. Use 2 to 4 fluid ounces to control annual weeds less than 2 inches tall. Increase the rate

SEE WEED CONTROL ON PAGE 4

Asparagus Tips

Stephen A. Garrison, Ph.D., Professor Emeritus in Vegetable Crops

In 2003 many fields were severely infected with the foliar phase of *Stemphyllium vesicarium*, causing early death of the tops. This occurred in August and early September as a result of the frequent rainfall pattern. The early loss of foliage decreases the photosynthetic reserves in the crown, reducing the yield potential for 2004. The above normal temperature in May of 2004 promoted generally higher early yields, further depleting the reserves in the crown.

The combination of reduced reserves in the crown after the 2003 season, the high temperatures, and early depletion of reserve in 2004 has contributed to lower spear quality in fields that showed early defoliation in 2003.

Because of these conditions, *harvesting should now be terminated in fields that were defoliated by Stemphyllium in 2003.* Monitor fields frequently for signs of *Stemphyllium* and **Asparagus Rust** after the fern develops, especially if frequent rainfall patterns develop this year. Be prepared to apply fungicides as recommended in the *2004 New Jersey Commercial Vegetable Recommendations*. □

PEST NOTES FROM PAGE 2

✓ **Tomato:** Bob Moore of Helena reports some tomato transplants with heavy **potato beetle** populations causing significant damage. It is believed that applications of Admire were made too early before transplanting (5-6 weeks or more), and plants are thus not well protected when placed in the field. Control of adult beetles in the field using foliar sprays is difficult because of the small leaf area on the plants. Applications of Actara, AgriMek, Assail, cryolite, Provado, SpinTor, or Thiodan will control the beetles. Vydate is labeled, and is most effective when the plant has adequate foliage. Neem-based insecticides and the biological insecticides (referred to as Bt or Btt) are effective primarily against small larvae, and will not adequately control adults on tomato transplants. Note: after mid-June, avoid the use of an insecticide in the neonicotinoid class, including Assail, Actara, and Provado. □

WEED CONTROL FROM PAGE 3

to 4 to 8 fluid ounces to control larger annual weeds. Apply the maximum rate of 10.5 fluid ounces, in one or split into two applications to suppress or control perennial weeds. Do not exceed 10.5 fluid ounces in one year. Spray additives are not needed or required by the label, and are not recommended. Observe a minimum preharvest interval (PHI) of 30 days. Stinger is a postemergence herbicide with residual soil activity. Observe crop restrictions or injury may occur from herbicide carryover.

✓ **Spinach:** Stinger 3A has received a label for use in spinach. Apply 2 to 8 fluid ounces of Stinger 3A per acre in a single application to control certain **annual and perennial broadleaf** weeds. Stinger controls weeds in the Composite and Legume plant families. Common annuals controlled include **galinsoga, ragweed species, common cocklebur, groundsel, pineappleweed, clover, and vetch.** Perennials controlled include **Canada thistle, goldenrod species, aster species, and mugwort** (wild chrysanthemum). Stinger is very effective on small seedling annual and emerging perennial weeds less than 2 to 4 inches tall, but is less effective and may take longer to work when weeds are larger. Use 2 to 4 fluid ounces to control annual weeds less than 2 inches tall. Increase the rate to 4 to 8 fluid ounces to control larger annual weeds. Apply the maximum rate of 8 fluid ounces to suppress or control perennial weeds. Spray additives are not needed or required by the label, and are not recommended. Application of higher recommended rates, 0.094 to 0.188 lb/A (4 to 8 fluid ounces), may cause a crop response that appears as a more upright leaf development. Yield and maturity are not affected. Observe a minimum preharvest interval (PHI) of 21 days. Stinger is a postemergence herbicide with residual soil activity. Observe follow crop restrictions or injury may occur from herbicide carryover. □

IPM Update

Kristian Holmstrom, Program Associate in Vegetable IPM

Sweet Corn

European corn borer (ECB) adult catches have increased throughout the state over the past week, with highest catches occurring in western Hunterdon County (see ECB map). Trap catch information is absent from Middlesex, Monmouth, and Ocean Counties, so data have been extrapolated to cover those counties. As scouts monitor whorl stage plantings, they report seeing large numbers of moths flying among the plants. Egg masses are now being deposited on suitable plants. In Mercer County, feeding as high as 4% has been found this week, and is likely higher than this in the southern counties. This will increase dramatically over the next week. Check 5 plants each in 10 random locations throughout the field. Consider treating if more than 12% of plants show signs of ECB feeding. Plantings should be monitored at least weekly. Re-apply insecticides if feeding remains over 12% as the plants go into the pretassel stage. After this, it is critical to make an insecticide application if live larvae are present in tassels as the plants enter the full tassel-to-first silk stage. This will clean out many of the remaining larvae as they move down the plant to the developing ears. The highest average nightly ECB blacklight trap catches are:

Little York	14	Cinnaminson	4	Sergeantsville	3
Milford	10	Belvidere	3	Cedarville	2
Hopewell	5	Croton	3	Chapel Heights	2
Burlington	4	Phillipsburg	3	Downer	2

Seedling stage sweet corn in some areas has been showing signs of **slug** injury. This damage shows up as long holes in the leaves with noticeable slime trails on the small plants. Often this injury is associated with no-till plantings or plantings in which there are soil clods on the surface. Slugs will hide under clods and debris during the heat of the day and emerge to feed at night. Typically, this situation doesn't require treatment. As drier weather prevails, slug activity will decline. Also, as plants grow, the injury is less problematic. Cultivation will also disrupt the soil surface, making it less habitable for slugs.

In Burlington County, a field of young whorl stage sweet corn showed evidence of **brown stinkbug** (*Euschistus* species) injury this week. When stinkbugs feed on young corn, the growing point may be killed, leaving the plant with dead leaves in the inner whorl. The field in question had 2% affected plants. This feeding is rarely more than an incidental occurrence in sweet corn, but if it approaches 12% and feeding is recent, an insecticide application may be warranted.

Potatoes

Potato leafhopper (PLH) has been discovered in potato fields in Hunterdon and Morris Counties this past week. No nymphs were in samples, but adults were abundant in the fields that had the most vine growth. Although potato varieties differ in their reaction to PLH feeding, it is wise to be aware of the PLH population and treat fields preventatively when adult numbers reach or exceed 1 per sweep. With a sweep net, make 10 sweeps in at least 5 random locations in the field. Consider treating at the above action threshold. If nymphs are present in the sample, or if no sweep net is available, check 10 leaves each in 10

SEE IPM ON PAGE 5

random locations in the field, and consider treating if 1 or more nymph is found per 10 leaves.

Peppers

This week, **ECB** egg masses were found on pepper plants in Mercer County. The plants were recently transplanted and did not have fruit. At this young stage, the plants are susceptible to injury to the main stem as ECB larvae will enter the plant there in the absence of fruit. This causes the plant to die back above the entry wound, and delays further pepper development. Check 5 plants each in 10 random locations in the field. If the flat, waxy looking ECB egg masses are found on more than 2 plants in the sample, consider treating to minimize plant injury. As the plants grow and branch out, ECB larvae may cause some flagging of branches, but will not have as great an impact on the plant development. Later still, ECB larvae will enter the fruit directly and must be treated on a preventive basis.

Snap beans

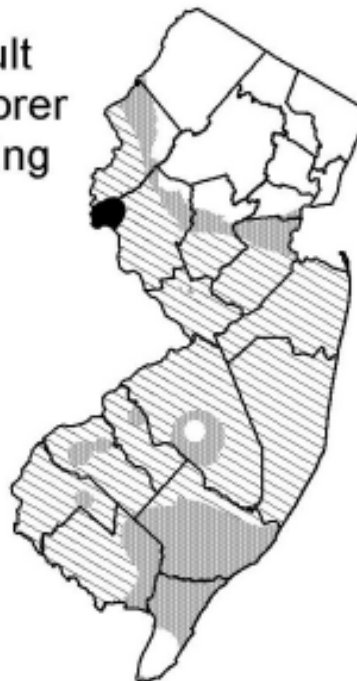
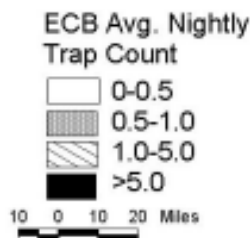
Some snap bean plantings are in the first true leaf stage or later now. This crop is at risk from **PLH** at this time. Be sure to check fields weekly for the presence of PLH. This pest can cause considerable damage and yield loss in beans. PLH adults, though small, are easy to spot

in the field because they readily fly from plant leaves when disturbed. If numbers of nymphs and/or adults exceeds 100 per 20 sweeps prior to bloom, consider treating. If no sweep net is available, check plants in 10 random field locations. If adults are seen flying at most sites, consider treating. Consult the *2004 Commercial Vegetable Production Recommendations* for materials.

Cole crops

Crucifer flea beetles have been found in many cole crop plantings (direct seeded and transplanted) throughout the state recently. This pest is capable of causing significant damage to young plants, and plantings should be monitored regularly. Consider treating if flea beetles are found on greater than 50% of plants in a 50 plant sample, and damage is occurring. While looking for beetles, also check for the presence of **diamondback moth larvae (DBM)** and **imported cabbage worms (ICW)**. Both pests are present in cole crops at this time. Consider treating when greater than 20% are infested prior to heading or 5% are infested when heads are present. It is important to check the youngest leaves, as this is often where ICW are found. For collards, kale and mustard, consider treating if greater than 10% of the plants are infested at any time.

Distribution of Adult European Corn Borer for the Week Ending May 26, 2004



Data collected and processed by: Kris Holmstrom, Marilyn Hughes
Rutgers Cooperative Extension & Center for Remote Sensing

High Tunnel Vegetable Production Twilight Meeting

Wednesday, June 9, 2004 at 6 pm
Piazza Farms and Greenhouses
71 RT 57, Phillipsburg NJ
908-859-3228

Piazza Farms and Greenhouses are operated by brothers Frank and Sam Piazza and their families. Their father started the farm and greenhouse business in 1955. Today, the business consists of approximately 50,000 square feet of greenhouses and 60 acres of vegetables. A farm market is open during the growing season. This season the Piazza's are growing peppers and tomatoes (5 varieties) in bags of media under plastic for the first time to provide early tomatoes and peppers for their farm market. Come see how well the plants are growing and the problems encountered so far this year.

Andy Wyenandt, Post Doc., working in vegetable plant pathology will be at the meeting to introduce himself to growers. Andy started May 3rd so come out and meet the new person on the block.

TOPICS

- | | |
|---------|---|
| 6:00 pm | Update from Pesticide Control Program
Ann Waters, Outreach and Training
Coordinator, Pesticide Control Program,
NJDEP |
| 6:30 pm | Construction of High Tunnels for Season
Extension
A.J. Both, Specialist in Controlled-
Environment Engineering, Rutgers
Cooperation Extension (RCE) |
| 6:50 pm | New Jersey Community Farm Markets
Update
Ron Good, NJ Department of Agriculture |
| 7:00 pm | Tomato Variety Selection for Early
Season Production
Wes Kline, Cumberland County Agricul-
tural Agent, RCE |
| 7:30 pm | Use of Predatory Mites for Two Spotted
Mite Control in High Tunnels
Kris Holmstrom, Vegetable IPM Program
Associate, RCE |

- | | |
|---------|---|
| 8:00 pm | Scouting High Tunnels for Insects and
Diseases
Joe Mahar, Vegetable IPM Coordinator,
RCE |
| 8:30 pm | Summer Insect Control
Gerald Ghidui, Specialist in Vegetable
Entomology, RCE |
| 9:00 pm | Update on Vegetable Weed Control
Brad Majek, Specialist in Weed Science,
RCE |

Please bring plant, insect, disease or weed samples to the meeting for identification.

Pesticide Recertification units are:

Core—1 PP2—4 1A & 10—4

Directions to Piazza Farms and Greenhouses

From the East take interstate 78 West to Exit 3, proceed West on Route 22. At the third traffic light turn right onto County Route 519 North. At the second light on Co. RT 519 north, make a left onto RT 57 West. Proceed about 2 miles to Piazza's Farm market on the right (a short distance past Stryker Road intersection).

From the North- Route 519 South or RT 31 South to RT 57 West.

For further information contact Bill Tietjen at Rutgers Cooperative Extension of Warren County at 908-475-6505 or Peter Nitzsche at Rutgers Cooperative Extension of Morris County at 973-285-8307. □

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much above normal, averaging 69 degrees north, 69 degrees central and 72 degrees south. Extremes were 93 degrees at Toms River on the 24th, and 48 degrees at Newton on the 20th. Weekly rainfall averaged 0.30 inches north, 0.37 inches central, and 1.09 inches south. The heaviest 24 hour total reported was 0.81 inches at Pomona on the 19th to 20th. Estimated soil moisture, in percent of field capacity, this past week averaged 82 percent north, 67 percent central and 60 percent south. Four inch soil temperatures averaged 68 degrees north, 68 degrees central and 71 degrees south.

Weather Summary for the Week Ending 8 am Monday 5/24/04

WEATHER STATIONS	R A I N F A L L			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.48	9.99	-.58	89	51	71.	9	517	274	70
CANOE BROOK	missing									
CHARLOTTEBURG	.35	11.89	.39	86	54	68.	9	469	329	76
FLEMINGTON	.31	12.36	1.29	89	56	69.	7	509	277	75
LONG VALLEY	.23	10.01	-1.90	86	52	68.	8	435	264	70
NEWTON	.15	10.46	.23	88	48	69.	9	449	275	78
FREEHOLD	.37	12.21	1.18	91	51	69.	6	560	274	69
LONG BRANCH	.29	11.44	.05	86	55	66.	4	414	167	45
NEW BRUNSWICK	.44	11.18	.35	90	54	70.	6	520	205	84
TOMS RIVER	.57	12.37	1.35	93	58	70.	7	583	314	53
TRENTON	.18	10.79	.81	90	53	69.	4	550	200	43
CAPE MAY COURT HOUSE	.88	10.15	.47	90	55	68.	5	516	206	51
DOWNSTOWN	.79	10.43	.49	90	58	72.	7	640	277	55
GLASSBORO	1.16	14.22	3.66	90	61	73.	9	656	309	67
HAMMONTON	1.24	11.38	1.10	92	58	72.	8	657	318	61
POMONA	1.49	9.59	-.02	91	58	71.	8	592	305	74
SEABROOK	1.01	11.44	2.36	92	61	74.	9	720	352	61
SOUTH HARRISON	1.88	14.35	4.02	90	61	72	NA	679	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week 243 (Ending 5/17/04)										
This Week 223 (Ending 5/24/04)										

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