

2009 SPRAY RECORD

Federal law requires that all growers keep records of their application of **restricted use** pesticides. Cooperative Extension also recommends that accurate records of **all** pesticides used be kept (New Jersey Law 7:30-8.8 requires growers [private applicators] to maintain records of all applications of pesticides for 3 years, and that they must be made available to the New Jersey Department of Environmental Protection and medical personnel upon request). These records include: date and place, crop/field treated, brand name or trade name of pesticide, **the amount of pesticide used and the pest for which the crop was treated**. A separate list of the EPA registration numbers for all restricted-use pesticides (all pesticides in New Jersey) must be kept, if these numbers are not kept on the application record. Here is an example of the form to use, an up-to-date example can be found on the Rutgers Pest Management website www.pestmanagement.rutgers.edu/PAT/record_forms.htm

The crop/field designation must be specific. **Example:** Assign a number to all fields, or parts of a field planted to different crops, or the same crop in a different growth stage. Then use this number on the application record for each application to that specific location. For all pesticides having a reentry time, the date of application must include the time the application is completed and when it is safe to reenter the field (date and time). The information below is required to be kept by all private applicators in **Maryland and New Jersey**.

Location and Field of Application				Pesticide Applied			Quantity Applied		Date & Time		Signature/ Pesticide License Number
County, City, Or Township of Application	Field Name Sitio Aplicado	Acres	Crop Treated Cosech Tratada	Name of Pesticide Nombre del Pesticida	EPA Registration Number Numero de Registracion EPA	Active Ingredient Ingrediente Acitvo	Amount of Pesticide used before mixing	Total Volume Candidad Usada	Date/Time of Application Fecha y Hora de la Aplicacion	Date/Time of Reentry Fecha y Hora de Reentrada	
Agriville	G-11	8	Tomatoes	VydateL	352-372	Oxamyl	12 Qts.	400 gal	6/15-9:30 a.m.	6/17-9:30 a.m.	John Smith C080569

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PESTICIDE REGISTRATION NUMBERS

Use the space below to list the pesticides that you use and their EPA registration numbers. These numbers are printed on the label. The information below is to be kept by all private applicators in Maryland and New Jersey.

Pesticide*	EPA Registration No.*	Active Ingredient*	Formulation
<i>Example:</i> Sevin	264-314	carbaryl	50W

* A form listing all pesticides stored on site must be sent each year to your local Fire Department with an explanatory cover letter.

VEGETABLE SEED SIZES

Table R-1. Vegetable Seed Sizes¹

Crop	Seeds/Unit Weight	Crop	Seeds/Unit Weight
Asparagus	13,000-20,000/lb	Mustard	15,000-17,000/oz
Beans: baby lima	1,150-1,450/lb	Okra	450-550/oz
fordhook	440-550/lb	Onions: bulb	105,000-144,000/lb
snap	1,600-2,200/lb	bunching	180,000-200,000/lb
Beets	24,000-26,000/lb	Parsnips	7,500-12,000/oz
Broccoli	8,500-9,000/oz	Parsley	240,000-288,000/lb
Brussels sprouts	8,500-9,000/oz	Peas	1,440-2,580/lb
Cabbage	8,500-9,000/oz	Peppers	4,000-4,700/oz
Carrots	300,000-400,000/lb	Pumpkins	1,900-3,200/lb
Cauliflower	8,900-10,000/oz	Radishes	40,000-50,000/lb
Celery	60,000-72,000/oz	Rutabaga	150,000-192,000/lb
Collards	7,500-8,500/oz	Spinach	25,000-50,000/lb
Cucumbers	15,000-16,000/lb	Squash: summer	3,500-4,800/lb
Eggplants	6,000-6,500/oz	winter	1,600-4,000/lb
Endive, escarole	22,000-26,000/oz	Sweet corn: normal, sugary enhanced	1,800-2,500/lb
Kale	7,500-8,900/oz	Super sweet (Sh)	3,000-5,000/lb
Leeks	170,000-180,000/lb	Tomatoes: fresh	10,000-11,400/oz
Lettuce: head	20,000-25,000/oz	processing	160,000-190,000/lb
leaf	25,000-31,000/oz	Watermelons: small seed	8,000-10,400/lb
Muskmelons	16,000-19,000/lb	large seed	3,200-4,800/lb

¹Use this table to estimate your seed requirements. Varieties and seed lots can differ in seed size. Check with your seed supplier and the label on the container for more precise information.

PLANT SPACINGS AND POPULATIONS

Table R-2. Population of Plants per Acre at Several Between-Row and In-Row Spacings

Inches between Rows	Inches Apart in Row												
	2	4	6	8	10	12	14	16	18	24	30	36	48
7	448,046	224,023	149,349	112,011	89,609	74,674	64,006						
12	261,360	130,680	87,120	65,340	52,272	43,560	37,337	32,670	29,040	21,780	17,424	14,520	10,890
18	174,240	87,120	58,080	43,560	34,848	29,040	24,891	21,780	19,360	14,520	11,616	9,680	7,260
21	149,349	74,674	49,783	37,337	29,870	24,891	21,336	18,669	16,594	12,446	9,957	8,297	6,223
24	130,680	65,340	43,560	32,670	26,136	21,780	18,669	16,335	14,520	10,890	8,712	7,260	5,445
30	104,544	52,272	34,848	26,136	20,909	17,424	14,935	13,068	11,616	8,712	6,970	5,808	4,356
36 (3 ft)	87,120	43,560	29,040	21,780	17,424	14,520	12,446	10,890	9,680	7,260	5,808	4,840	3,630
42 (3½ ft)	74,674	37,337	24,891	18,669	14,934	12,446	10,668	9,334	8,297	6,223	4,978	4,149	3,111
48 (4 ft)	65,340	32,670	21,780	16,335	13,068	10,890	9,334	8,167	7,260	5,445	4,356	3,630	2,722
60 (5 ft)			17,424	13,068	10,454	8,712	7,467	6,534	5,808	4,356	3,485	2,904	2,178
72 (6 ft)			14,520	10,890	8,712	7,260	6,223	5,445	4,840	3,630	2,904	2,420	1,815
84 (7 ft)			12,446	9,334	7,467	6,223	5,334	4,667	4,149	3,111	2,489	2,074	1,556
96 (8 ft)			10,890	8,167	6,534	5,445	4,667	4,084	3,630	2,722	2,178	1,815	1,361

USEFUL WEBSITES

The following is a list of websites that may be of interest and value to vegetable growers. Growers should carefully evaluate the source and accuracy of the information. Cooperative Extension DOES NOT confirm the accuracy of information at these websites. No endorsement of the information found at these websites is implied and no lack of endorsement is implied for sites not listed.

AGRICULTURAL SEARCH ENGINES	
cris.csrees.usda.gov	USDA Agricultural Search Engine
www.produceoasis.com/	About produce--recipes, nutrition, etc.
222.agricultureinformation.com	Agricultural Search Engine
www.agfind.com/	Agricultural Search Engine
VEGETABLE PRODUCTION	
www.rcrc.rutgers.edu/pubs/	2009 Commercial Vegetable Production Rec.
www.aesop.rutgers.edu/~horteng	Horticultural Engineering
ag.udel.edu/extension/vegprogram/index.htm	Delaware Extension Vegetable Program
www.vric.ucdavis.edu/	California Vegetable Crops Information
postharvest.ucdavis.edu/Pubs/publications.shtml	UC Davis Postharvest Handling of Perishables
edis.ifas.ufl.edu/topic_commercial_vegetable_production	Florida Commercial Veg. Information
weedid.aces.uiuc.edu	Univ. of Illinois Weed Identification
www.ces.ncsu.edu/hil/veg-index.html	North Carolina Vegetable Information
aggie-horticulture.tamu.edu/vegetable/vegetable.html	Texas Vegetable Information
msucare.com/index.html	Mississippi Vegetable Information
www.extension.psu.edu	Penn State Extension Page
plasticulture.cas.psu.edu	Penn State Center for Plasticulture
www.ppath.cas.psu.edu/EXTENSION/VEGDIS/Identification.html	Penn State Disease Management Publication
www.gov.on.ca/omafra	Ontario Ministry of Agriculture
www.msue.msu.edu/iac/vegevege.html	Michigan Vegetable Site List
www.hort.cornell.edu/extension/commercial/vegetables/index.html	Cornell Vegetable Information
oregonstate.edu/dept/hort/	Oregon Vegetable Information
ag.arizona.edu/hydroponictomatoes/	Growing Hydroponic Tomatoes
www.ag.ohio-state.edu/~vegnet/	Ohio Veg Net
www.umassvegetable.org/	Univ. of Mass. Veg. Information
www.pollinator.com/	The Pollination Home Page
www.ext.vt.edu/	Virginia Cooperative Extension Information
www.ppws.vt.edu/weedindex.htm	Virginia Tech Weed ID
www.ca.uky.edu/agc/pubs/id/id36/id36.htm	Kentucky Vegetable Growers Guide
www.agnr.umd.edu/users/agron/nutrient/	Maryland Nutrient Manager
entweb.clemson.edu/pesticide/saftyed/psident.htm	Multi-university Resource Insect Pest ID
SUSTAINABLE/ALTERNATIVE CROP PRODUCTION	
www.ibiblio.org/farming-connection	Sustainable Farming
www.sarep.ucdavis.edu	California Sustainable Ag Program
www.sfc.ucdavis.edu	California Small Farm Center
www.hort.purdue.edu/newcrop	Purdue's New Crop Information
www.ams.usda.gov/nop/indexIE.htm	USDA National Organic Program
www.nal.usda.gov/afsic/	Alternative Farm Systems Inform. Ctr.
elaw.ncat.org/	ATTRA horticulture series
www.sare.org	Sustainable Agriculture Network
www.kerrcenter.com/	The Kerr Center for Sustainable Agr.

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USEFUL WEBSITES (continued)

INTEGRATED PEST MANAGEMENT (IPM)

www.omri.org	Approved organic nutrients and sources
www.rcrc.rutgers.edu/weeds	New Jersey Weed Photos
www.nysaes.cornell.edu/recommends/	Cornell Vegetable IPM
www.pestmanagement.rutgers.edu/IPM/Vegetable/index.htm	Corn earworm and corn borer flights
www.ipm.ucdavis.edu	California IPM
www.hort.uconn.edu/ipm/ipmveg.htm	U Connecticut Vegetable IPM for growers
www.vegedge.umn.edu/MNFruit&VegNews/mnindex.htm	Minnesota IPM Newsletter
www.nysipm.cornell.edu/	New York Vegetable IPM
www.ipmnet.org/cicp/vegetable/vegindex.htm	Database of IPM Resources (DIR)
www.nysaes.cornell.edu/ent/biocontrol/	Biocontrol NY
ag.udel.edu/extension/IPM/index.html	Delaware IPM
www.mdipm.umd.edu/	University of Maryland IPM
www.ces.ncsu.edu/depts/pp/cucurbit	Cucurbit Downy Mildew Forecasting
www.pestwatch.psu.edu	Sweet Corn Pest Maps (U.S.)

PESTICIDE NEWS AND INFORMATION

www.ace.orst.edu/info/nptn/	Natl. Pesticides Information Center
www.cdms.net/manuf/manuf.asp	Pesticide Labels & MSDS sheets
www.pested.unl.edu/softrec.htm	Pesticide Education Resources Univ. of Neb
www.greenbook.net/	C&P Press Greenbook.net
www.ipmcenters.org/	Office of Pest Management Prog. USDA
www.iraac-online.org	Insecticide Resistance Action Committee
www.epa.gov/pesticides/	US EPA Office of Pesticide Programs
www.nj.gov/dep/enforcement/pcp/index.htm	NJDEP Pesticide Control & Local Prog.

NEWSLETTERS

www.rcrc.rutgers.edu/pubs/plantandpestadvisory/	NJ Plant & Pest Advisory Newsletter
agdev.anr.udel.edu/weeklycropupdate/	University of Delaware Weekly Crop Update
www.ag.ohio-state.edu/~vegnet/	Ohio Weekly Newsletter
www.ipm.uiuc.edu/ifvn/index.html	Illinois Weekly Newsletter
www.ag.arizona.edu/crops/vegetables/vegetables.html	SW Arizona Vegetable Pest Reports

MARKETING

www.ams.usda.gov/marketnews.htm	USDA Agr.Mkt.Service Reports
www.farmersmarketonline.com/marketwa.htm	Terminal Market Prices for U.S. Crops
www.fas.usda.gov/commodities.asp	Terminal Mkt.Prices around the World
www.sfproduce.org/home.html	San Francisco Wholesale Mkt.Listings
www.usda.gov/nass/pubs/agr03/acro03.htm	USDA Nat'l Agr. Statistics Service
www.ams.usda.gov/directmarketing/	USDA's Direct Marketing Information
www.agr.ca/newintre.html	Agri-Food Canada Market Information
www.1webblvd.com/coosemans/default.htm	Coosemans Worldwide-Spec. Produce
www.pafarm.com/	PA Farm Market Association
www.cenyc.org/	CENYC: Greenmarkets
www.todaymarket.com/	Today's Market Prices
www.worldcrops.org	Ethnic vegetable production & marketing
www.pma.com/	Produce Marketing Association

FARM MANAGEMENT

www.aesop.rutgers.edu/~farmmgmt/	Farm Management
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USEFUL WEBSITES (continued)

FARM MANAGEMENT	
www.ers.usda.gov/	USDA Economic Research Service
www.farminfo.org/	The Small Farm Resource
WILDLIFE MANAGEMENT	
www.deer.rutgers.edu	White-tailed deer ecology and management
www.berrymaninstitute.org/	The Jack H. Berryman Institute
wildlifecontrol.info/newdm/Pages/default.aspx	The Northeast Wildlife Damage Management Research and Outreach Cooperative
liberty.state.nj.us/agriculture/conventions/2006/wildliferes.html	NJ Dept of Ag Wildlife and Agriculture Resolution
www.sdgifp.info/SDDigest/MarchApril/AnimalDamageControl.html	Animal Damage Control – A Part of Wildlife Management Report
icwdm.org/handbook/index.asp	Internet Center for Wildlife Damage Management
www.dnr.cornell.edu/ext/wildlifedamage/publications.htm	Publications and Videos Available through Cornell Media Services
www.dem.ri.gov/topics/erp/nahems_wildlife_management.pdf	USDA National Animal Health Emergency Management System Guidelines
EDUCATION	
njaes.rutgers.edu	Rutgers NJ Agricultural Experiment Station
www.cpe.rutgers.edu	NJAES Office of Continuing Profess. Ed.
GOVERNMENT AGENCIES RELATED TO AGRICULTURE	
www.usda.gov/	US Department of Agriculture
www.nalusda.gov/	National Agricultural Library
www.fsa.usda.gov/pas/default.asp	USDA, Farm Service Agency
dda.delaware.gov	Delaware Department of Agriculture
www.state.nj.us/agriculture/	NJ Department of Agriculture
www.mda.state.md.us	Maryland Department of Agriculture
www.agriculture.state.pa.us	Pennsylvania Department of Agriculture
www.vdacs.virginia.gov	Virginia Department of Agriculture
www.rma.usda.gov/	Risk Management Agency USDA
www.pcpnj.org	NJ Pesticide Control Program
TRADE PUBLICATIONS	
www.americanfarm.com/NJF.html	New Jersey Farmer Newsletter
www.meistermedia.com/	American Vegetable Grower
www.vegetablegrowersnews.com	The Vegetable Grower News
www.agriculture.com/	Agriculture Online
www.growermagazine.com/	The Grower Magazine
WEATHER	
www.nws.noaa.gov/	National Weather Service
climate.rutgers.edu/stateclim/	NJ State Climatologist
www.wx.rutgers.edu/	Rutgers Weather Center
www.deos.udel.edu/index.html	Delaware Environmental Observing System
www.usna.usda.gov/Hardzone/	Natl.Arboratum--Hardiness Zone Map
www.state.nj.us/dep/watersupply/precip.htm	NJDEP Hydrologic Information
FOOD SAFETY	
ecommons.library.cornell.edu/handle/1813/2209	Growers Guide to Food Safety
www.foodsafety.gov/~dms/fs-toc.html	National Food Safety Programs

PUBLICATION RESOURCES

The following publications are suggested for agents, growers, agriculture-industry representatives, and others who desire more detailed information on specific crops or production practices.

General Texts and Handbooks

- Holcomb, E.J., editor. 1994. *Bedding Plants IV*. 516 pages. Fourth edition. Pennsylvania Flower Growers, Ball Publishing Co., P.O. Box 9, Batavia, IL 60510-0009. A manual on the culture of bedding plants as a greenhouse crop.
- Uva, Richard H., Joseph C. Neal and Joseph M. DiTomaso, 1997; *Weeds of the Northeast*; 416 pages, Cornell University Press, 750 Cascadilla St., Ithaca, NY 14851. Comprehensive handbook for identifying 299 common and economically important weeds. 46 color photos and 118 drawings.
- Maynard, D.N., and George Hochmuth. 2006. *Knott's Handbook for Vegetable Growers*. 582 pages. Fourth edition, John Wiley & Sons, Inc., 605 Third Ave., New York, NY 10158. A practical handbook on commercial vegetable production.
- Meister, R.T., editor. July issue. *Annual Buyer's Guide: American Vegetable Grower*. Meister Publishing Co., 37841 Euclid Ave., Willoughby, OH 44094.
- Phillips, Roger, and Martyn Rix. 1993. *The Random House Book of Vegetables*. Random House Publishers, New York, NY. Illustrations and photographs of 650 vegetables with some production information included.
- Pierce, Lincoln C. 1987. *Vegetables: Characteristics, Production, and Marketing*. 433 pages. First edition, John Wiley & Sons, Inc., 605 Third Ave., New York, NY 10158. A good technical textbook for temperate vegetables.
- Plucknett, D.L. and H.B. Sprague. 1989. *Detecting Mineral Nutrient Deficiencies in Tropical and Temperate Crops*. Westview Tropical Agriculture Series No. 7, Westview Press, Boulder, CO 80302.
- Scaife, A. and M. Turner. 1984. *Diagnosis of Mineral Disorders in Plants. Volume 2: Vegetables*. Chemical Publishing Co., New York, NY 10000.
- Shepersky, K. 1984. *The Rain Bird Landscape Drip Irrigation Design Manual*. Rain Bird Sprinkler Mfg. Corp., Glendora, CA 91740.
- Sherf, A.F., and A.A. MacNab. 1986. *Vegetable Diseases and Their Control*. 728 pages. Second edition. John Wiley & Sons, Inc., 605 3rd Ave., New York, NY 10158. Information on diagnosis, disease cycles, and control; includes over 400 diseases and over 200 illustrations.
- Swiader, John M., George W. Ware, and J.P. McCollum. 1992. *Producing Vegetable Crops*. Fourth Edition. Interstate publishers, Inc., 510 N. Vermillion Street, PO Box 50, Danville, IL 61834.
- Anonymous. 1990. *Western Fertilizer Handbook*, Interstate Publishers, Inc., Danville, IL, 279 pp.
- Anonymous. 2007. *Crop Protection Handbook*, Meister Media, Inc., Willoughby, OH, 828 pp.
- Barenklau, K. E. 2001. *Agricultural Safety*, Lewis Publishers, Boca Raton, FL, 135 pp.
- Brase, T. A. 2005. *Precision Agriculture*, Thomson Delmar Learning, Clifton Park, NY, 224 pp.
- Cloyd, R. A., Nixon, P. L., and Pataky, N. R. 2004. *IPM For Gardeners*, Timber Press, Portland, OR, 204 pp.
- Decoteau, D. R. 2000. *Vegetable Crops*, Prentice-Hall, Upper Saddle River, NJ, 464 pp.
- Jones, J. Benton Jr. 2005. *Hydroponics: A Practical Guide for the Soilless Grower*, CRC Press, Boca Raton, FL, 423 pp.
- McElhatton, A. and Marshall, R. J. 2007. *Food Safety – A Practical and Case Study Approach*, Springer, New York, NY, 311 pp.
- McKinlay, R. G. 1992. *Vegetable Crop Pests*, CRC Press, Inc., Boca Raton, FL, 406 pp.
- Monaco, T. J., Weller, S. C., and Ashton, F. M. 2002. *Weed Science: Principles and Practices, 4th Edition*, John Wiley & Sons, New York, NY, 669 pp.
- Naylor, R. E. 2002. *Weed Management Handbook, 9th Edition*, Blackwell Publishers, Oxford, UK, 423 pp.
- Rechcigl, N. A. and Rechcigl, J. E. 1997. *Environmentally Safe Approaches to Crop Disease Control*, CRC Lewis, Boca Raton, FL, 386 pp.
- Rubatzky, V. E. and Yamaguchi, M. 1997. *World Vegetables: Principles, Production, and Nutritive Values*, Chapman and Hall, New York, NY, 843 pp.
- Singh, H. P., Batish, D. R., and Kohli, R. K. 2005. *Handbook of Sustainable Weed Management*, Food Prod. Press, New York, NY, 892 pp.
- Snowdon, A. L. 1990. *Color Atlas of Post-Harvest Diseases and Disorders Vol. 2: Vegetables*, CRC Press, Inc., Boca Raton, FL, 416 pp.
- Van Emden, H. F. and Service, M. W. 2004. *Pest and Vector Control*, Cambridge University Press, Cambridge, UK, 349 pp.

Publications from Universities, USDA, Societies, and Commercial Companies

- Compendium of Bean Diseases, Compendium of Beet Diseases and Insects, Compendium of Corn Diseases, Compendium of Pea Diseases, Compendium of Potato Diseases, Compendium of Sweet Potato Diseases, Compendium of Tomato Diseases*. Available from APS Press, The American Phytopathological Society, 3340 Pilot Knob Road, St. Paul, MN 55121.
- Hardenburg, R.E., A.E. Watada, and C.Y. Wong. 1995. *The Commercial Storage of Fruits, Vegetables, and Florist and Nursery Stocks*. 136 pages. USDA Agricultural Handbook No.66 (revised).
- Kader, Adel A., et al. 1985. *Postharvest Technology of Horticultural Crops*. 192 pages. Special Publication 3311. Univ. of CA, 6701 San Pablo Ave, Oakland, CA 94608-1239.
- Integrated Pest Management for Cole Crops and Lettuce*. 1992. Publication of the Div. of Agric. and Natural Resources. Univ. of CA, 6701 San Pablo Ave., Oakland, CA 94608-1239.
- MacNab, A.A., A.F. Sherf, and J.K. Springer. 1983. *Identifying Diseases of Vegetables*. 62 pages. Order from Publications Distribution Center, Penn State University, 112 Agricultural Administ. Building, University Park, PA 16802. Color photos and description of common vegetable diseases. (\$8)

PUBLICATION RESOURCES

Publications from Universities, USDA, Societies, and Commercial Companies (continued)

McGregor, S.E. (continuously updated). *Insect Pollination of Cultivated Crop Plants*. USDA Agricultural Handbook 496. 411 pages. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Specialty and Minor Crops Handbook. 1991. Publication 3346. Publication Div. of Agric. and Natural Resources. Univ. of CA, 6701 San Pablo Ave., Oakland, CA 94608-1239.

Stephens, J.M. 1989. *Manual of Minor Vegetables*. 123 pages. Florida Cooperative Extension Service, Univ. of FL, Gainesville, FL 32611.

Weeds of the North Central States (Bulletin 7). 303 pages. Illustrated book that lists and describes most of the weeds found in New Jersey. Available from the University of Illinois, Champaign, IL 61820.

Grubinger, Vernon P. 1999 *Sustainable Vegetable Production from Start-Up to Market*. 280 pages. Guide for those who are considering beginning a vegetable production business. The Natural Resource, Agriculture, and Engineering Service. Contact NRAES by phone (607) 255-7654 or www.nraes.org.

Zitter, Thomas A., Hopkins, Donald L., and Thomas, Claude E. 1996. *Compendium of Cucurbit Diseases*, American Phytopathological Society, 140 pp. www.shopapress.org/42074.html

Table R-3. Frequently Used Weights and Measures and Approximate Metric Equivalent

Liquid			Dry				
Pint	Liters	Gallons	Liters	Ounces	Grams	Pounds	Kilograms
0.5	0.24	1	3.8	0.25	7.1	1	0.5
1.0	0.47	2	7.6	0.50	14.2	2	0.9
1.5	0.71	3	11.4	0.75	21.3	3	1.4
2.0	0.94	4	15.1	1.0	28.4	4	1.8
2.5	1.18	5	18.9	2.0	56.7	5	2.3
3.0	1.42	6	22.7	3.0	85.0	6	2.7
3.5	1.65	7	26.5	4.0	113.4	7	3.2
4.0	1.90	8	30.3	5.0	141.7	8	3.6
4.5	2.13	9	34.1	10.0	283.5	9	4.1
5.0	2.37	10	37.9	16.0	453.6	10	4.5

Length and Area

1 acre = 0.4 hectares	1 inch = 2.54 centimeters
1 square mile = 2.6 square kilometers	1 foot = 30.0 centimeters
1 square yard = 0.8 square meters	1 yard = 0.9 meters
1 square foot = 0.09 square meters	1 mile = 1.6 kilometers
1 square inch = 6.5 square centimeters	

NOTES

Delaware Extension Agents and Specialists

County Agents

New Castle County: Anna Stoops - 302/831-2506

Kent County: Gordon Johnson - 302/697-4000

Sussex County: Tracy Wootten and Corey Whaley
302/856-7303

Specialists at Newark

Robert P. Mulrooney, Plant Pathologist - 302/831-4865

Joanne Whalen, Pest Management - 302/831-1303

Specialists at Georgetown

Mark VanGessel, Weed Specialist - 302/856-7303

Emmalea Ernest, Extension Associate: Vegetable Crops – 302/856-7303

Plant Diagnostic Clinic

The Delaware Nematode Assay Service accepts samples for plant-parasitic nematode assay and identification. To ensure proper collection and handling of samples submitted for nematode analysis, refer to the Plant Diagnostic Clinic "Nematode Assay Information Sheet". This form must accompany each sample submitted for laboratory analysis. This form is available at county Delaware Cooperative Extension offices or the website below. The charge for a nematode assay is \$10.00/ sample and checks should be made payable to the "University of Delaware".

Send or take the samples directly to the Plant Diagnostic Clinic, Room 151, Plant and Soil Sciences Dept, Townsend Hall, University of Delaware, Newark, DE 19716, or to any of the three county Extension offices.

Phone: 302-831-1390, FAX: 302-831-0605, Web: <http://ag.udel.edu/extension/pdc/index.htm>

Delaware Poison Control Center*

Poison Information Center 302/655-3389
Wilmington Medical Center--Delaware Division
502 West 14 Street
Wilmington, DE 19899

* When telephoning a hospital concerning poisoning, ask for the Poison Control Center

For Information on Certification of Pesticide Applicators, Call:

Delaware Department of Agriculture800/282-8685

For Help with a Pesticide Spill or Emergency, Call:

Delaware Department of Agriculture800/282-8685

Chemtrec800/424-9300

EPA/RCRA Hotline800/424-9346

National Pesticide Hotline800/858-7378

For Help in Case of Pesticide Poisoning, Call:

National Pesticide Hotline800/858-7378