

## WATER QUALITY AND TESTING FOR THE GREENHOUSE

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Fortunately most Connecticut growers have not had a problem with water quality and availability as growers in other parts of the country have experienced. On the most part, excessive mineral deposits, high or low pH values and polluted ground waters have not been a problem for the greenhouse industry in this state.

Ground water nitrates have been a problem in water supplies in some areas in Connecticut. Nitrates are water soluble and in solution they become very mobile. Sources of nitrates include animal excreta, human wastes, crop residues, some industrial wastes or any decomposing animal or plant tissue. Nitrogen fertilizer, naturally occurring deposits of nitrate-containing materials, nitrogen fixed by soil bacteria, and silage juices are additional sources of nitrates.

Since nitrates are water soluble, a portion of the nitrate added to or produced within the soil may be leached or washed away by either surface runoff or groundwater percolation. Nitrates leached by percolating water tend to accumulate in the upper portion of the groundwater table if rapid groundwater movement is absent and tend to remain there indefinitely. Nitrate concentration may be diluted by groundwater containing little or no nitrate and by groundwater movement.

At some point in time, it would probably be a good idea to have your water tested. Table 1 lists private labs in Connecticut that test water.

The pH of the water is important in affecting chemical reactions. In the greenhouse this is especially significant in that performance of pesticides can be adversely affected by the pH level of water. Most water contains dissolved minerals which make it either acidic or alkaline. Pure water has a pH of 7 and is neutral. It is known that carbamate and organophosphate pesticides undergo a process called "alkaline hydrolysis" in alkaline water (1). This process splits the pesticide molecule and makes it inactive. For example, Dylox in water at pH 7 is 50% hydrolyzed in 6.4 hours. At pH 8, it is 50% hydrolyzed within 63 minutes. In general the more alkaline the water the faster the decomposition. The majority of today's pesticides perform best when used in water that is slightly acidic.

Table 1: Approved Water Laboratories

CODE: Bacteriological (A)	Hydrocarbons (B)	
Chemical Analyses for Potable Water (C)	Sewage (D)	

FAIRFIELD COUNTY

Fairfield Laboratory  
 2163 Main Street  
Bridgeport, CT 06606  
 James V. Massey, Jr.  
 Tel: 366-4311 (ACD)

Ellis A. Tarlton  
 34 Pleasant Street  
Danbury, CT 06810  
 Ellis A. Tarlton, Director  
 Tel: 748-7903 (ABCD)

Stepney Water Laboratory  
 22 West Woodland Drive  
Easton, CT 06425  
 Constantine Linardos, Director  
 Tel: 268-5163 (ABCD)

Environmental Associates, Inc.  
 703 Post Road  
Fairfield, CT 06480  
 Ralph Wiech, Director  
 Tel: 259-6142 (CD)

A.E.M. Laboratory  
 20 Henry Street  
Greenwich, CT 06830  
 Richard Hoopes, Director  
 Tel: 531-4228 (ACD)

Water Systems Analysis  
 Braceable Road, P.O. Box 8298  
New Fairfield, CT 06810  
 George Reitwiesner, Director  
 Tel: 746-3273 (ACD)

Clinical Lab. of Norwalk  
 10 Mot Avenue  
Norwalk, CT 06850  
 John S. Horvath, Director  
 Tel: 866-6102 (A)

Aqualux Water Processing Company  
 15 Perry Avenue  
Norwalk, CT 06850  
 Leonard L. Wikstrom, Ph.D.  
 Tel: 847-3637 (ACD)

Stamford Water Company Lab.  
 150 Interlaken Road  
Stamford, CT 06904  
 Richard F. Tomarelli, Director  
 Tel: 324-3163 (AC)

York Research Corporation Lab.  
 1 Research Drive  
Stamford, CT 06904  
 Abraham Kurtz, Director  
 Tel: 325-1371 (BCD)

## HARTFORD COUNTY

Minges Environmental Lab.  
16 Avon Park North  
P.O. Box 657  
Avon, CT 06601  
Lawton Averill, Director  
Tel: 677-8309 (ACD)

Northeast Laboratories, Inc.  
129 Mills Street  
Berlin, CT 06037  
William W. Ullmann, Ph.D.  
Tel: 828-9787 (ACD)

Newlands Sanitary Lab.  
24 Tobey Road  
Bloomfield, CT 06602  
Thomas Lee, Director  
Tel: 242-6291 (ABCD)

Connecticut Medical Lab.  
160 Farmington Avenue  
Bristol, CT 06010  
Lee S. Abrams, Director  
Tel: 583-1656 (A)

Conn. Dept. of Health Services  
Laboratory Division  
10 Clinton Street  
Hartford, CT 06106  
MAILING ADDRESS  
P.O. Box 1689  
Hartford, CT 06101  
Jesse S. Tucker, Ph.D.  
Tel: 566-5102 (ABCD)

Griswold & Fuss Environmental  
Laboratory Inc.  
360 East Center Street  
Manchester, CT 06040  
MAILING ADDRESS  
120 Main Street  
Manchester, CT 06040  
John Burrell, Director  
Tel: 646-5629 (ABCD)

Water Quality Analysis Lab.  
51 Seminary Road  
Simsbury, CT 06070  
Robert Marsh, Director  
Tel: 658-1403 (AC)

TRC-ENVIRONMENTAL, INC  
125 Silas Deane Highway  
Wethersfield, CT 06109  
Samuel S. Cha, Director  
Tel: 563-1431 (ABCD)

Envirotech Laboratory  
77 Cook Hill Road  
Windsor, CT 06095  
Darrell L. Moody, Director  
Tel: 688-7249 (AC)

## LITCHFIELD COUNTY

MacDermid of Bristol, Inc.  
31 Harwinton Avenue  
Plymouth, CT 06782  
M. Karl Nilsen, Director  
Tel: 583-1881 (D)

Torrington Water Testing Lab.  
203 Pineridge Road  
Torrington, CT 06790  
James B. Rokos, Director  
Tel: 482-8367 (AC)

## MIDDLESEX COUNTY

Environmental Science Corp.  
50 Walnut Street  
Middletown, CT 06457

MAILING ADDRESS

P.O. Box 616

Middletown, CT 06457

John M. Dzialo, Director

Tel: 347-6961 (ABCD)

Water Resources Laboratory  
Chemistry Department  
Wesleyan University  
Middletown, CT 06457

John Masselli, Director

Tel: 347-9411 Ext. 201 (CD)

Middlesex Memorial Hospital Lab.  
28 Crescent Street  
Middletown, CT 06457

Sebastian J. Gallo, M.D. Director

Tel: 347-4435 (A)

Eastern Analytical Laboratory  
251 Main Street  
Old Saybrook, CT 06475

Richard M. Kirpas, Director

Tel: 388-2378 (ACD)

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## NEW HAVEN COUNTY

Aqualogics, Inc.  
234 Amity Road  
Bethany, CT 06525

Clarence H. Roy, Ph.D. Director

Tel: 393-0190 (ACD)

Baron Consulting  
Milford Materials Testing Lab.  
655 Plain Road  
Milford, CT 06460

Harry Agahigan, Ph.D. Director

Tel: 874-5678 (ABCD)

Environmental Testing Labs.  
707 Main Street  
Branford, CT 06405

Hubert W. Dean, Director

Tel: 481-4949 (ACD)

Nutmeg Chemical Company  
125 Market Street  
New Haven, CT 06513

Tel: 777-7691 (CD)

Clearwater Analytical Lab.  
2545 State Street  
Hamden, CT 06517

John L. Morico, Director

Tel: 281-6290 (ACD)

Environmental Laboratories  
158 Bull Hill Lane  
West Haven, CT 06516

MAILING ADDRESS

1 Columbus Plaza

New Haven, CT 06511

Donald W. Smith, II

Tel: 789-1266 (AC)

Shoreline Testing Laboratory  
19 Christopher Lane  
Madison, CT 06443

Jane H. McNeely, Director

Tel: 245-2485 (ACD)

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## NEW LONDON COUNTY

SEBA Laboratories, Inc.  
154 Broad Street  
New London, CT 06320

Ernest F. Kydd, Jr., Director

Tel: 442-5024 (AC)

Cyto Medical Laboratory  
12 Case Street  
Norwich, CT 06360

Zannis Kalams, M.D. Director

Tel: 866-6102 (ABCD)