



This is a section from the

2020/2021

Mid-Atlantic

Commercial Vegetable

Production Recommendations

The recommendations are **NOT** for home gardener use.

The **full manual**, containing recommendations specific to New Jersey, can be found on the Rutgers NJAES website in the Publications section: <http://njaes.rutgers.edu/pubs/publication.asp?pid=E001>.

This manual will be revised biennially. In January 2021, a **critical update** with important updates to the 2020/2021 manual will be communicated through local Extension Agents and Vegetable Specialists.

The **label** is a legally-binding contract between the user and the manufacturer. The user must follow all rates and restrictions as per label directions. The use of any pesticide inconsistent with the label directions is a violation of Federal law.

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County Boards of Chosen Freeholders. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.

2020/2021
Mid-Atlantic Commercial Vegetable
Production Recommendations

Delaware

University of Delaware Cooperative Extension (EB137)

Maryland

University of Maryland Extension (EB-236)

New Jersey

Rutgers Cooperative Extension (E001)

Pennsylvania

Penn State Extension (AGRS-028)

Virginia

Virginia Cooperative Extension (456-420)

West Virginia

West Virginia University Extension Service

For Immediate Medical Attention

Call 911

For a Pesticide Exposure Poisoning

Emergency Call



For All States

This number will automatically connect you to the poison center nearest to you.

Anyone with a poisoning emergency can call the toll-free telephone number for help.

Personnel at the Center will give you first-aid information and direct you to local treatment centers if necessary.

For Pesticide Spills

Small Spills: See the product label for cleanup advice.

Large spills: Call the National Response Center at 1-800-424-8802 or CHEMTREC at 800-424-9300 (24 hours) - Industry assistance with emergency response cleanup procedures for large, dangerous spills.

Be aware of your responsibility to report spills to the proper state agency.

Preface

NOT TO BE USED BY HOME GARDENERS

This copy of the 2020/2021 Mid-Atlantic Commercial Vegetable Production Recommendations replaces all previous editions of the Commercial Vegetable Production Recommendations published individually for Delaware, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia. Information presented in this publication is based on research results from the University of Delaware, the University of Maryland, Rutgers - The State University of New Jersey, The Pennsylvania State University, Virginia Polytechnic Institute and State University, West Virginia University, and the U.S. Department of Agriculture, combined with industry and grower knowledge and experience.

This publication will be revised biennially. In January 2021, a critical update with important updates for this publication will be communicated through local Extension Agents and Vegetable Specialists. The editors welcome constructive criticism and suggestions from growers and industry personnel who may wish to help improve future editions of this publication.

These recommendations are intended for the commercial vegetable grower who has to make numerous managerial decisions. Although the proper choices of variety, pesticides, equipment, irrigation, fertilizer, and cultural practices are the individual vegetable grower's responsibility, it is intended that these recommendations will facilitate decision-making. Recommended planting dates will vary across the six-state region. Local weather conditions, grower experience, and variety may facilitate successful harvest on crops planted outside the planting dates listed in this guide. This can be evaluated in consultation with the local agents and state specialists. Government agencies and other organizations administering crop insurance programs or other support programs should contact local Extension agents and/or vegetable specialists for guidance.

DISCLAIMER

- The label is a legally-binding contract between the user and the manufacturer.
- The user MUST follow all rates and restrictions as per label directions.
- The use of any pesticide inconsistent with the label directions is a violation of Federal law.

Pesticide User Responsibility

Always follow the label and use pesticides safely. For Special Local Needs Label 24(c) registrations or Section 18 exemptions, do not use the material without a copy of the special label or written instructions from your Extension Agent or another recognized authority. **The user is always responsible for the proper use of pesticides, residues on crops, storage and disposal, as well as for damage caused by drift.**

State and federal pesticide regulations are constantly under revision. Be sure to determine if such changes apply to your situation. Using pesticides inconsistent with label directions is illegal.

Days Between Last Application and Harvest

The minimum number of days between the last application and harvest (**PHI**, Pre-Harvest Interval, in days) and reentry information (**REI**, Restricted Entry Interval, in hours) are listed in the herbicide, insecticide and fungicide recommendation tables in chapter F Commodity Recommendations. Always follow the label to avoid the occurrence of deleterious chemical residues on harvested crops.

Trade or Brand Names

The trade or brand names given herein are supplied with the understanding that no discrimination is intended and no endorsement is implied. Furthermore, in some instances the same compound may be sold under different trade names, which may vary as to label clearances. For the convenience of our users, both product names and active ingredients are provided and any product name omissions are unintended.

Coordinators and Editors

2020/2021 Mid-Atlantic Commercial Vegetable Production Recommendations

Coordinators

C.A. Wyenandt, Ph.D.

Extension Specialist in Vegetable Pathology (Rutgers University)

M.M.I. van Vuuren Ph.D. (Rutgers University)

Discipline Editors

Entomology

Thomas P. Kuhar, Ph.D. (Virginia Tech)

Pesticides

George C. Hamilton, Ph.D. (Rutgers University)

Patricia D. Hastings (Rutgers University)

Weed Science

Mark J. VanGessel, Ph.D. (University of Delaware)

Horticulture

Gordon C. Johnson, Ph.D. (University of Delaware)

Plant Pathology

C.A. Wyenandt, Ph.D. (Rutgers University)

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Contributors by State

These recommendations were prepared and reviewed by the following individuals from respective institutions with the purpose of providing up to date information for commercial vegetable growers in the mid-Atlantic states of Delaware, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia.



University of Delaware

Horticulture

E. Ernest

G.C. Johnson

Plant Pathology

A.M. Koehler

Weed Science

M.J. VanGessel

K. Vollmer

Entomology

D. Owens

Irrigation

J. Adkins



Rutgers University

Horticulture

M. Infante-Casella

W. Kline

P. Nitzsche

T.J. Orton

R.W. VanVranken

Weed Science

T. Besançon

Entomology

K. Holmstrom

J. Ingerson-Mahar

Plant Pathology

C.A. Wyenandt

Pesticide Safety

G.C. Hamilton

P.D. Hastings



Virginia Tech

Horticulture

M.S. Reiter

Entomology

H.B. Doughty

T.P. Kuhar

J.M. Wilson

Plant Pathology

D.B. Langston

S.L. Rideout

Wildlife

J.A. Parkhurst

Food Science

L.K. Strawn



University of Maryland

Entomology

G.E. Brust

Plant Pathology

K.L. Everts

M.J. Hu



PennState

Horticulture

K. Demchak

T.E. Elkner

E. Sánchez

Weed Science

D. Lingenfelter

J.M. Wallace

Entomology

S.J. Fleischer

B.J. Lingbeek

Pathology

B.K. Gugino



West Virginia University

Horticulture

L.W. Jett

Weed Science

R.S. Chandran

Plant Pathology

M.M. Rahman

State Extension Information

DELAWARE

University of Delaware

University of Delaware Agricultural Extension: <https://www.udel.edu/canr/cooperative-extension/>
Vegetable Program Trial Reports, Publications, and Budgets:

<https://www.udel.edu/academics/colleges/canr/cooperative-extension/sustainable-production/commercial-crops/vegetable-crops/>

Weekly Crop Update Newsletter: <https://sites.udel.edu/weekllycropupdate/>

Insect Trap Program:

<https://www.udel.edu/academics/colleges/canr/cooperative-extension/sustainable-production/pest-management/insect-trapping/>

UD Plant Diagnostic Clinic: <https://www.udel.edu/academics/colleges/canr/cooperative-extension/sustainable-production/plant-diagnostic-clinic/>

University of Delaware Weed Science:

<https://www.udel.edu/academics/colleges/canr/cooperative-extension/sustainable-production/weed-science/>

Statewide

Gordon Johnson, Fruit and Vegetable Crops Specialist, 302-856-7303, gcjohn@udel.edu

Emmalea Ernest, Associate Scientist, Vegetables, 302-856-7303, emmalea@udel.edu

Mark VanGessel, Extension Specialist, Weed Science, 302-856-7303, mjv@udel.edu

Alyssa Koehler, Extension Specialist, Plant Pathology, 302-856-7303, akoehler@udel.edu

Kathryne Everts, Vegetable Plant Pathology Specialist, 410-742-8780, everts@udel.edu

David Owens, Entomology/IPM Specialist, 302-856-7303, owensd@udel.edu

County Offices

New Castle County: Carrie Murphy, 302-831-2506, cjmurphy@udel.edu

New Castle County: Dan Severson, 302-831-2506, severson@udel.edu

Kent County: Jake Jones, 302-730-4000, jgjones@udel.edu

Sussex County: Tracy Wootten, 302-856-7303, wootten@udel.edu

Sussex County: Cory Whaley, 302-856-7303, whaley@udel.edu

MARYLAND

University of Maryland

University of Maryland Extension: <https://extension.umd.edu/topics/agriculture>

Maryland Vegetables: <https://extension.umd.edu/mdvegetables>

Vegetable & Fruit Headline News:

<https://extension.umd.edu/anne-arundel-county/agriculture/vegetable-fruit-headline-news>

University of Maryland Extension Specialists

Kathryne L. Everts, Plant Pathologist, keverts@umd.edu, Lower Eastern Shore REC-Salisbury

Gerald E. Brust, IPM Vegetable Specialist, jbrust@umd.edu, Central Maryland REC-Upper Marlboro

Kurt Vollmer, Weed Management Specialist, kvollmer@umd.edu, Wye Research and Education Center

Cerruti R. R. Hooks, IPM and Insect Ecology crrhooks@umd.edu, Dept of Entomology

Robert J. Rouse (Emeritus), Horticulture

Galen Dively (Emeritus), Entomology and IPM

University of Maryland Plant Diagnostic Lab

<https://extension.umd.edu/plantdiagnosticlab>

Karen Rane, Department of Entomology, 4112 Plant Sciences Building, College Park, MD 20742

301-405-1611, rane@umd.edu

State Extension Information

NEW JERSEY

Rutgers, The State University of New Jersey

New Jersey Agricultural Experiment Station: <http://njaes.rutgers.edu/ag/>

Fact Sheets and Bulletins: <https://njaes.rutgers.edu/pubs/>

Plant & Pest Advisory: <http://plant-pest-advisory.rutgers.edu>

Rutgers Vegetable Crops Online Resources: <https://nj-vegetable-crops-online-resources.rutgers.edu/>

Mid-Atlantic Commercial Vegetable Production Recommendations:

<http://njaes.rutgers.edu/pubs/publication.asp?pid=E001>

Rutgers Pest Management Office: <https://pestmanagement.rutgers.edu/>

Rutgers NJAES Extension Specialists and IPM Program Personnel

For a complete listing see: <https://njaes.rutgers.edu/extension-specialists/service.php>

Albert Ayeni (Vegetables), A.J. Both (Controlled Environmental Engineering), George Hamilton (Pest Management), Joseph Heckman (Soil Fertility), Kris Holmstrom (Vegetable IPM Research Project Coordinator), Joseph Ingerson-Mahar (Vegetable IPM Sr. Program Coordinator), Thomas Orton (Vegetables), Jim Simon (Plant Biology), C.A. Wyenandt (Vegetable Pathology)

Rutgers Cooperative Extension County Agricultural Agents with Vegetable Responsibilities

For a complete listing of county offices and agents see: <https://njaes.rutgers.edu/county/>

Atlantic County, Richard VanVranken, 609-625-0056, vanvranken@njaes.rutgers.edu

Cape May County, Jennifer Sawyer (interim), 609-465-5115, sawyer@njaes.rutgers.edu

Cumberland County, Wesley Kline, 856-451-2800, wkline@njaes.rutgers.edu

Gloucester County, Michelle Infante-Casella, 856-224-8040, minfante@njaes.rutgers.edu

Mercer County, Meredith Melendez, 609-989-6830, melendez@njaes.rutgers.edu

Middlesex County, Bill Hlubik, 732-398-5262, hlubik@njaes.rutgers.edu

Morris County, Peter Nitzsche, 973-285-8304, nitzsche@njaes.rutgers.edu

Rutgers Vegetable Working Group Directory

For complete listing and contact information see:

<https://nj-vegetable-crops-online-resources.rutgers.edu/> and go to “members” section.

Rutgers NJAES Plant Diagnostic Lab and Nematode Detection Service

<http://njaes.rutgers.edu/plantdiagnosticlab/>; clinic@njaes.rutgers.edu

20 Indyk-Engel Way, North Brunswick, NJ 08902, phone: 732-932-9140, fax: 732-932-1270,

Rutgers Soil Testing Lab <http://njaes.rutgers.edu/soiltestinglab/>

57 US Highway 1, New Brunswick, NJ 08901, 848-932-9295, soiltest@njaes.rutgers.edu

PENNSYLVANIA

The Pennsylvania State University

Penn State Extension, including publications, fact sheets, and more: <http://extension.psu.edu>

Penn State Vegetable Production: <https://extension.psu.edu/forage-and-food-crops/vegetables> (click on the “News” button to see recent articles related to vegetable and small fruit production)

Penn State Vegetable Team Directory

For complete listing and contact information see:

<https://extension.psu.edu/forage-and-food-crops/vegetables/vegetables-experts>

Plant Disease Clinic: <http://plantpath.psu.edu/facilities/plant-disease-clinic>

220 Buckhout Laboratory, University Park, PA 16802, 814-865-2204

Insect Advice from Extension/Insect Identification Laboratory: <https://ento.psu.edu/extension>

501 Agricultural Sciences and Industries Building, University Park, PA 16802, 814-865-3256

Agricultural Analytical Services Laboratory: <https://agsci.psu.edu/aasl>

111 Ag Analytical Services Lab, University Park, PA 1682, 814-863-4540, aaslab@psu.edu

State Extension Information

VIRGINIA

Virginia Tech & Virginia State University

Virginia Cooperative Extension (VCE): <https://ext.vt.edu/>

VCE Publications and Educational Resources:

<http://pubs.ext.vt.edu/> and

<https://ext.vt.edu/agriculture.html>

Virginia Tech Pesticide Programs (VTPP): <http://vtpp.ext.vt.edu>

Virginia Extension Specialists

Thomas P. Kuhar, Professor, Entomology, 540-231-6129, tkuhar@vt.edu

David B. Langston, Jr., Professor, Plant Pathology, 757-657-6450, dblankston@vt.edu

James A. Parkhurst, Associate Professor, Wildlife, 540-231-9283, jbparkhur@vt.edu

Mark S. Reiter, Associate Professor, Nutrient Management, 757-414-0724, mreiter@vt.edu

Steve L. Rideout, Associate Professor, Plant Pathology, 757-414-0724, srideout@vt.edu

Jayesh Samtani, Area Specialist, Small Fruit, 757-363-3901, jsamtani@vt.edu

Vijay Singh, Assistant Professor and Extension Specialist, Weed Science and Precision Agriculture, 757-414-0724, vijaysingh@vt.edu

Laura K. Strawn, Assistant Professor of Food Science, 757-414-0724, lstrawn@vt.edu

James Wilson, Apiculturist, 540-231-2168, keepbees@vt.edu

Plant Disease Clinic

106 Price Hall, 170 Drillfeld Drive, Virginia Tech Blacksburg, VA 24061-0331

Phone: 540-231-6758, Fax: 540-231-7477, clinic@vt.edu

Or contact the local VCE office

Insect Identification Lab

205A Price Hall, 170 Drillfeld Drive, Virginia Tech Blacksburg, VA 24061-0319

Phone: 540-231-4899, ericday@vt.edu

Or contact the local VCE office

WEST VIRGINIA

West Virginia University Extension Service:

<https://extension.wvu.edu/agriculture/horticulture>

West Virginia University Extension Specialists

Lewis W. Jett, Ph.D., Extension Horticulture Specialist, 304-293-2634, Lewis.Jett@mail.wvu.edu

Rakesh S. Chandran, Ph.D., Extension Weed Specialist and IPM Coordinator, 304-293-2603,

RSChandran@mail.wvu.edu

Mahfuz M. Rahman, Ph.D., Extension Plant Pathology Specialist, 304-293-8838, MM.Rahman@mail.wvu.edu

Plant Diagnostic Clinic

<https://extension.wvu.edu/lawn-gardening-pests/plant-disease/plant-diagnostic-clinic>

G102 South Ag. Sciences Building, PO Box 6108, Morgantown, WV 26506-6108

Phone: 304-293-8838/288-9541, mm.rahman@mail.wvu.edu

Soil Testing Lab

<https://soiltesting.wvu.edu>

1309-B Agricultural Sciences Bldg., P.O. Box 6108, Morgantown, WV 26506-6108,

Phone: 304-293-6023, infoplantsoil@mail.wvu.edu

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Abbreviations and Acronyms

Units of Measurement

/A	per acre
bu	bushel(s)
°C	degrees Celsius
cc	cubic centimeter(s)
cu ft	cubic foot (feet)
cu yd	cubic yard(s)
cwt	hundredweight
d	day(s)
°F	degrees Fahrenheit
ft	foot (feet)
fl oz	fluid ounce(s)
g	gram(s)
gal	gallon(s)
gpm	gallons per minute
h	hour(s)
in	inch
lb	pound(s)
min	minute(s)
mph	miles per hour
oz	ounce(s)
ppm	parts per million
psi	pounds per square inch
pt	pint(s)
qt	quart(s)
sq ft	square foot (feet)
tbs	tablespoon(s)
tsp	teaspoon(s)
wk	week(s)
yr	year(s)

Product Formulations

COC	crop oil concentrate
D	dust
DF	dry flowable
DP	dry prill
DS	dry salt
E	emulsion
EC	emulsifiable concentrate
ES	emulsifiable suspension
EW	emulsion in water
F	flowable
FC	flowable concentrate
FL	fluid
FM	flowable micro-encapsulated
G	granule
L	liquid
LC	liquid concentrate
LF	liquid flowable
ME	micro-encapsulated

OF	oil formulation
OLF	other labeled formulations
<i>Product Formulations - continued</i>	
SC	spray concentrate, soluble concentrate
SG	soluble granules
SP	soluble powder
W	wettable
WBE	water-based emulsion
WDG	water-dispersible granules
WDL	water-dispersible liquid
WP	wettable powder
WSB	water-soluble bag
WSP	water-soluble packet

Diseases

AMV	alfalfa mosaic virus
EBDC	early blight disease control
FR	Fusarium wilt resistance
LR	leaf roll resistant
MT	mosaic tested
PMR	powdery mildew resistant
PMT	powdery mildew tolerant
PR	Phytophthora resistance
PT	Phytophthora tolerant
PVX	potato virus X
PVY	potato virus Y
WMV	watermelon mosaic virus
WMV2	watermelon mosaic virus race2
WRR	white rust resistance
ZYMV	zucchini yellow mosaic virus

Other

ai	active ingredient
AP	at planting
ALS	acetolactate synthase
AMS	ammonium sulfate
FRAC	Fungicide Resistance Action Committee
IRAC	Insecticide Resistance Action Committee
K	potassium
K ₂ O	available potash
N	nitrogen
OMRI	Organic Materials Research Institute
P	phosphorus
P ₂ O ₅	available phosphoric acid
PHI	Pre Harvest Interval (in days)
REI	Restricted Entry Interval (in hours)
WSSA	Weed Science Society of America

