

## INTRODUCTION

Herbicide rates are for broadcast application unless specified differently in the table heading for each crop. Conversion tables are provided to aid in converting large volumes, such as quarts and gallons, to ounces, tablespoons and teaspoons.

Rates of soil-applied herbicides vary according to soil type because soils can affect herbicide activity. The lower rate is for sandy loams (light), intermediate rate for silt loams (medium) and the higher rate for clay loam and clay (heavy) soils. In some instances the same rate may be suggested for both medium and heavy soils.

Herbicides should be applied in enough water to assure distribution over the area treated. That amount may vary from 5 to 40 gallons per acre on a broadcast basis. Wettable powder formulations require at least 50 mesh screens throughout the spray system and nozzle tips with a capacity of 0.2 GPM or larger. Considerable agitation is necessary to keep wettable powders in suspension. Hardened stainless steel and nylon nozzles are more resistant to wear from the application of wettable powders than brass nozzles.

Tanks made of aluminum, fiberglass or other corrosion-resistant materials will reduce the amount of nozzle clogging. Some herbicides may not be used in unlined steel tanks. Be sure that the water used as the spray solution is free from trash and other foreign material, particularly mud or soil particles.

Correct calibration is of utmost importance. Excess rates may cause injury to the applied crop, injury from excess residue to succeeding crops and increased herbicide costs. Less than recommended rates can result in unsatisfactory weed control. Read the label and know that you are applying only the recommended amount.

## RESTRICTED USE PESTICIDES

Some of the pesticides or certain uses of pesticides in this publication may be classified for restricted use. Those pesticides with restricted use labels will contain information regarding these restrictions. Be sure to read all labels thoroughly. It is illegal to use any pesticide in a manner that is inconsistent with the label directions. It is unlawful for a noncertified applicator to use a pesticide that has been classified with restricted uses. Information on pesticide applicator certification programs may be obtained from the Louisiana Cooperative Extension Service.

If herbicides are handled or applied improperly or if unused portions are not disposed of safely, they may be injurious to humans, domestic animals, desirable plants and fish or other wildlife and may contaminate water supplies. Use herbicides only when needed and handle them with care. Follow the directions and heed all precautions on the container label.

## DIFFERENT TYPES OF HERBICIDE REGISTRATIONS

Additional herbicides for crop production have been introduced in the recent past and likely will be in the foreseeable future. During this time of change, growers will be introduced to terminology that has very specific meanings toward the development and use of these additional herbicides. The purpose of this section is to introduce, list and explain the definition and implications of this terminology and to promote increased grower understanding that may aid in complying with state and federal pesticide laws.

## HERBICIDE LABELS

State and Federal agencies regulate herbicide use through the issuance of herbicide labels, which are the directions for herbicide use and have the effect of Federal law. Each herbicide is identified under various "sections" or parts of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). FIFRA is the federal law that addresses, among other things, how a herbicide may be used. Contained within FIFRA are the sections that deal with specific situations. Three types of labels, each addressed by a specific Section of FIFRA, herbicide users should understand.

**SECTION 3** – The most comprehensive registration granted. This registration shows the United States Environmental Protection Agency has reviewed and approved all required information to support all uses listed on the product label.

**SECTION 24[c]** – Granted by the state under Federal regulation and often called a "special local need" label. A 24[c] label applies only to the state or states that issue the label and is issued for a specific use pattern for crops or sites already approved under a Section 3 label. This label has a time period of use (usually 5 years), which may be renewed.

**SECTION 18** – An Emergency Exemption label is petitioned to the USEPA through the state to control a specific weed problem not adequately addressed by any Section 3-labeled herbicides and poses a threat to crop production. Before determining issuance of a Section 18 label, each Section 18 petition is scrutinized by USEPA. If the label is issued, herbicide use is very clearly defined. If the USEPA does not approve the Section 18 petition, the state may issue a Crisis Exemption and allow use of the herbicide. In all cases, Section 18 labels are temporary and expire within 1 year of issuance.

## SUMMARY

Different types of labels allow herbicide use under varying conditions. It is important for herbicide users to understand this part of the herbicide registration process, the results and how those results affect herbicide use. Much more information is available at the Internet sites listed below. USEPA Office of Pesticide Programs <http://www.epa.gov/pesticides/>; FDA (Food and Drug Administration) [www.fda.gov/](http://www.fda.gov/); USDA Extension Service <http://www.csrees.usda.gov/>

## Other Useful Internet Sites

<b>Chemical Companies</b>	<b>Web Site</b>
Agrilience	<a href="http://www.agrilience.com">http://www.agrilience.com</a>
Amvac	<a href="http://www.amvac-chemical.com">http://www.amvac-chemical.com</a>
BASF	<a href="http://www.agproducts.basf.com">http://www.agproducts.basf.com</a>
Bayer	<a href="http://www.bayercropscienceus.com">http://www.bayercropscienceus.com</a>
Cheminova	<a href="http://www.cheminova.us.com">http://www.cheminova.us.com</a>
Crompton/Uniroyal	<a href="http://www.cromptoncorp.com">http://www.cromptoncorp.com</a>
Dow	<a href="http://www.dowagro.com">http://www.dowagro.com</a>
Drexel	<a href="http://www.drexchem.com">http://www.drexchem.com</a>
DuPont	<a href="http://www.cropprotection.dupont.com">http://www.cropprotection.dupont.com</a>
FMC	<a href="http://www.cropsolutions.fmc.com">http://www.cropsolutions.fmc.com</a>
Gowan	<a href="http://www.gowanco.com">http://www.gowanco.com</a>
Helena	<a href="http://www.helenachemical.com">http://www.helenachemical.com</a>
Micro Flo	<a href="http://www.microflocompany.com">http://www.microflocompany.com</a>
Monsanto	<a href="http://www.monsanto.com">http://www.monsanto.com</a>
NuFarm	<a href="http://www.ag.us.nufarm.com">http://www.ag.us.nufarm.com</a>
PBI Gordon	<a href="http://www.pbigordon.com">http://www.pbigordon.com</a>
Syngenta	<a href="http://www.syngenta-us.com">http://www.syngenta-us.com</a>
Syngenta-PP	<a href="http://www.syngentaprofessionalproducts.com">http://www.syngentaprofessionalproducts.com</a>
UAP	<a href="http://www.uap.com">http://www.uap.com</a>
Valent USA	<a href="http://www.valent.com">http://www.valent.com</a>
Labels	<a href="http://www.cdms.net">http://www.cdms.net</a>
Wilbur-Ellis	<a href="http://www.wilbur-ellis.com">http://www.wilbur-ellis.com</a>
<b>Weed Identification</b>	
Illinois	<a href="http://web.aces.uiuc.edu/weedid">http://web.aces.uiuc.edu/weedid</a>
Texas A&M	<a href="http://www.csd.tamu.edu/FLORA/gallery.htm">http://www.csd.tamu.edu/FLORA/gallery.htm</a>
Iowa State	<a href="http://www.weeds.iastate.edu/weed-id/weedid.htm">http://www.weeds.iastate.edu/weed-id/weedid.htm</a>
WSSA	<a href="http://www.wssa.net/photos.html">http://www.wssa.net/photos.html</a>
Purdue Univ.	<a href="http://www.btny.purdue.edu/Extension/Weeds/NoTillID/NoTillWeedID1.html">http://www.btny.purdue.edu/Extension/Weeds/NoTillID/NoTillWeedID1.html</a>
Michigan	<a href="http://www.msue.msue.edu/msue/iac/e1363/e1363.htm">http://www.msue.msue.edu/msue/iac/e1363/e1363.htm</a>
Virginia Tech	<a href="http://www.ppws.vt.edu/weedindex.htm">http://www.ppws.vt.edu/weedindex.htm</a>
LSU AgCenter	<a href="http://www.lsuagcenter.com/">http://www.lsuagcenter.com/</a>
Colorado	<a href="http://www.cwma.org">http://www.cwma.org</a>
Arizona Weeds	<a href="http://www.uapress.arizona.edu/onlinebks/weeds/titlweed.htm">http://www.uapress.arizona.edu/onlinebks/weeds/titlweed.htm</a>
New Jersey	<a href="http://www.rce.rutgers.edu/weeds/default.asp">http://www.rce.rutgers.edu/weeds/default.asp</a>
FMC	<a href="http://cropsolutions.fmc.com/insectsandweeds/tabid/869/default.aspx">http://cropsolutions.fmc.com/insectsandweeds/tabid/869/default.aspx</a>
<b>Harmful/Poisonous Plants</b>	
U. S. Army	<a href="http://chppm-www.apgea.army.mil/ento/PLANT.HTM">http://chppm-www.apgea.army.mil/ento/PLANT.HTM</a>
Indiana	<a href="http://vet.purdue.edu/depts/addl/toxic/cover1.htm">http://vet.purdue.edu/depts/addl/toxic/cover1.htm</a>
Cornell	<a href="http://www.ansci.cornell.edu/plants">http://www.ansci.cornell.edu/plants</a>
Pennsylvania	<a href="http://cal.vet.upenn.edu/poison/index.html">http://cal.vet.upenn.edu/poison/index.html</a>
<b>Herbicide Injury/Symptomology</b>	
Illinois	<a href="http://www.extension.umn.edu/distribution/cropsystems/DC3832.html">http://www.extension.umn.edu/distribution/cropsystems/DC3832.html</a>
Purdue	<a href="http://www.btny.purdue.edu/Extension/Weeds/Herbinj/InjuryHerb1.html">http://www.btny.purdue.edu/Extension/Weeds/Herbinj/InjuryHerb1.html</a>
<b>University Extension Sites</b>	
Alabama	Auburn Univ. <a href="http://www.aces.edu">http://www.aces.edu</a>
Arizona	U. Arizona <a href="http://ag.arizona.edu/extension">http://ag.arizona.edu/extension</a>
Arkansas	U. Arkansas <a href="http://www.uaex.edu">http://www.uaex.edu</a>
California	U. California <a href="http://www.ipm.ucdavis.edu">http://www.ipm.ucdavis.edu</a>
Colorado	CSU <a href="http://www.ext.colostate.edu">http://www.ext.colostate.edu</a>
Connecticut	U. Conn. <a href="http://www.hort.uconn.edu/ipm/index.html">http://www.hort.uconn.edu/ipm/index.html</a>
Florida	U. Florida <a href="http://edis.ifas.ufl.edu">http://edis.ifas.ufl.edu</a>
Georgia	U. Georgia <a href="http://extension.caes.uga.edu">http://extension.caes.uga.edu</a>
Idaho	U. Idaho <a href="http://info.ag.uidaho.edu">http://info.ag.uidaho.edu</a>
Indiana	Purdue U. <a href="http://www.agriculture.purdue.edu/agcomm">http://www.agriculture.purdue.edu/agcomm</a>
Iowa	Iowa State. <a href="http://www.extension.iastate.edu">http://www.extension.iastate.edu</a>
Kansas	Kansas State <a href="http://www.oznet.ksu.edu">http://www.oznet.ksu.edu</a>
Kentucky	U. Kentucky <a href="http://www.ca.uky.edu/ces">http://www.ca.uky.edu/ces</a>
Louisiana	LSU AgCenter <a href="http://www.lsuagcenter.com">http://www.lsuagcenter.com</a>

Maine	U. Maine	<a href="http://www.umext.maine.edu">http://www.umext.maine.edu</a>
Maryland	U. Maryland	<a href="http://www.agnr.umd.edu/MCE/index.cfm">http://www.agnr.umd.edu/MCE/index.cfm</a>
Michigan	Michigan State	<a href="http://www.msue.msu.edu/home">http://www.msue.msu.edu/home</a>
Minnesota	U. Minnesota	<a href="http://www.extension.umn.edu">http://www.extension.umn.edu</a>
Mississippi	Mississippi State U.	<a href="http://msucares.com">http://msucares.com</a>
Missouri	U. Missouri	<a href="http://outreach.missouri.edu">http://outreach.missouri.edu</a>
Nebraska	U. Nebraska	<a href="http://www.ianr.unl.edu">http://www.ianr.unl.edu</a>
New Hampshire	U. New Hampshire	<a href="http://www.ceinfo.unh.edu">http://www.ceinfo.unh.edu</a>
New Mexico	New Mexico	<a href="http://www.cahe.nmsu.edu/pubs">http://www.cahe.nmsu.edu/pubs</a>
North Carolina	North Carolina State	<a href="http://www.ces.ncsu.edu">http://www.ces.ncsu.edu</a>
North Dakota	North Dakota State	<a href="http://www.ext.nodak.edu">http://www.ext.nodak.edu</a>
Ohio	Ohio State	<a href="http://ohioline.osu.edu">http://ohioline.osu.edu</a>
Oklahoma	Oklahoma State U.	<a href="http://osueextra.okstate.edu">http://osueextra.okstate.edu</a>
Pennsylvania	Pennsylvania State U.	<a href="http://cropsoil.psu.edu/Extension/Extension.html">http://cropsoil.psu.edu/Extension/Extension.html</a>
Rhode Island	U. Rhode Island	<a href="http://www.edc.uri.edu">http://www.edc.uri.edu</a>
South Carolina	Clemson U.	<a href="http://www.clemson.edu/extension">http://www.clemson.edu/extension</a>
Tennessee	U. Tennessee	<a href="http://www.utextension.utk.edu">http://www.utextension.utk.edu</a>
Texas	Texas A&M	<a href="http://www.texasextension.tamu.edu">http://www.texasextension.tamu.edu</a>
Utah	Utah State U	<a href="http://extension.usu.edu">http://extension.usu.edu</a>
Vermont	U. Vermont	<a href="http://www.uvm.edu/~uvmext">http://www.uvm.edu/~uvmext</a>
Virginia	Virginia Tech	<a href="http://www.ext.vt.edu/resources">http://www.ext.vt.edu/resources</a>
Washington	Washington State	<a href="http://ext.wsu.edu">http://ext.wsu.edu</a>
Wisconsin	U. Wisconsin	<a href="http://www.uwex.edu">http://www.uwex.edu</a>
Wyoming	U. Wyoming	<a href="http://uwadmnweb.uwyo.edu/UWCES">http://uwadmnweb.uwyo.edu/UWCES</a>

#### **Societies**

Aquatic Plant Management Society

<http://www.apms.org>

Canadian Weed Science Society

<http://www.cwss-scm.ca>

International Weed Science Society

<http://www.olemiss.edu/orgs/iws/DEFAULT.HTM>

Northeastern Weed Science Society

<http://www.newss.org>

North Central Weed Science Society

<http://www.ncwss.org>

Southern Weed Science Society

<http://www.swss.ws>

Weed Science Society of America

<http://wssa.net>

Western Aquatic Plant Management Society

<http://wapms.org>

Western Society of Weed Science

<http://www.wsweedsociety.org>

#### **Commodity Pages**

American Corn Growers Association

<http://www.acga.org>

National Cotton Council

<http://www.cotton.org>

American Soybean Association

<http://www.asasoya.org>

American Soybean Association

<http://www.amsoy.org>

U. S. Rice Federation

<http://www.usarice.com>

Cotton Incorporated

<http://www.cottoninc.com>

Cotton Board

<http://www.cottonboard.org>

Cotton USA

<http://www.cottonusa.org>

United Soybean Board

<http://www.talksoy.com>

LSU AgCenter Soybean Information Page

[http://www.lsuagcenter.com/en/crops\\_livestock/crops/soybeans/](http://www.lsuagcenter.com/en/crops_livestock/crops/soybeans/)

LSU AgCenter Corn Information Page

[http://www.lsuagcenter.com/en/crops\\_livestock/crops/corn/](http://www.lsuagcenter.com/en/crops_livestock/crops/corn/)

LSU AgCenter Cotton Home Page

[http://www.lsuagcenter.com/en/crops\\_livestock/crops/Cotton/](http://www.lsuagcenter.com/en/crops_livestock/crops/Cotton/)

LSU AgCenter Wheat & Oats Home Page

[http://www.lsuagcenter.com/en/crops\\_livestock/crops/WheatOats/](http://www.lsuagcenter.com/en/crops_livestock/crops/WheatOats/)

LSU AgCenter - Louisiana Forages

[http://www.lsuagcenter.com/en/crops\\_livestock/livestock/pasture\\_forage/](http://www.lsuagcenter.com/en/crops_livestock/livestock/pasture_forage/)

LSU AgCenter Sorghum Information Page

[http://www.lsuagcenter.com/en/crops\\_livestock/crops/Sorghum/](http://www.lsuagcenter.com/en/crops_livestock/crops/Sorghum/)

Louisiana Ag Summary

<http://www.lsuagcenter.com/en/communications/publications/Publications+Catalog/Money+and+Business>

LSU AgCenter Rice Home Page

[http://www.lsuagcenter.com/en/crops\\_livestock/crops/rice/](http://www.lsuagcenter.com/en/crops_livestock/crops/rice/)

International Rice Research Institute

<http://www.irri.org>

Rice Web

<http://www.riceweb.org>

Rice Online

<http://www.riceonline.com>

Audubon Sugar Institute

<http://www.lsuagcenter.com/Inst/Research/Departments/audubonsugar>

Sugar Knowledge International

<http://www.sucrose.com>

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