

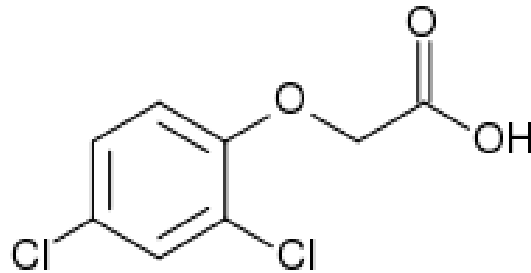
B.Sc. III Year (Theory)
Semester –VI
Paper XX (C)
Microbiology and Disease Management

Unit-2
Disease management:
2. Control methods
g. Weedicides- 2,4-D

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2,4-Dichlorophenoxyacetic acid (2,4-D)

2,4-Dichlorophenoxyacetic acid (2,4-D) is a common systemic [pesticide/herbicide](#) used in the control of broadleaf weeds. It is the most widely used herbicide in the world, and the third most commonly used in North America. 2,4-D is a synthetic [auxin](#) (plant hormone), and as such it is often used in laboratories for plant research and as a supplement in plant [cell culture](#) media such as [MS medium](#).



2,4-D was developed during World War II by a British team at [Rothamsted Experimental Station](#), under the leadership of [Judah Hirsch Quastel](#), aiming to increase crop yields for a nation at war. When it was commercially released in [1946](#), it became the first successful selective herbicide and allowed for greatly enhanced weed control in [wheat](#), [maize](#) (corn), [rice](#), and similar [cereal](#) grass crops, because it only kills [dicots](#) (broadleaf plants), leaving behind [monocots](#) (grasses).

**SA SOUTHERN
50 AG.**

2,4-D AMINE WEED KILLER

SELECTIVE BROADLEAF WEED CONTROL

ACTIVE INGREDIENT:

Dimethylamine salt of 2,4-D-Dichlorophe noxyacetic acid	46.3%
OTHER INGREDIENTS	53.7%
TOTAL	100.0%

*2,4-D-Dichlorophenoxyacetic Acid Equivalent 38.4% = 3.8 lbs/gal
Isomer Specific by AOAC Method No. 6 D01-5

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OF CHILDREN
DANGER-PELIGRO**

Si usted no entiende la etiqueta, busque alguien para que
se la explique en detalle. (If you do not understand this
label, find someone to explain it to you in detail.)

See inside of label booklet for additional Precaution-
ary Statements, First Aid, and Directions for Use.

FOR BROADLEAF WEED CONTROL IN:
PASTURES AND RANGELAND, LAWNS,
GOLF COURSES, CEMETERIES,
PARKS, AND SIMILAR ORNAMENTAL
TURF, FOR FENCES, DITCHBANKS,
ROADSIDES,
INDUSTRIAL SITES,
AND OTHER
LISTED
SITES



**Net Contents Liquid:
1 Quart (.946 liters)**

COMPARE • N • SAVE

2,4-D
AMINE SALT

Broadleaf Weed Control



A Selective Weed Killer

The content of many hospital records and brochures (e.g., brochures for patients), record books, posters, pamphlets, and maps, magazines, including books, announcements, drawings, etc. in the collections, rights of way.

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DANGER / PELIGRO**

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Editorial Board

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NET CONTENTS: 1.00 L (33.8 FL. OZ.) EACH BOTTLE



NET CONTENTS: 5.07 / 52 FL. OZ. / 1.54 L.

2,4-D is a member of the [phenoxy](#) family of herbicides. 2,4-D is a synthetic [auxin](#), which is a class of [plant hormones](#). It is absorbed through the leaves and is translocated to the [meristems](#) of the plant. Uncontrolled, unsustainable growth ensues, causing stem curl-over, leaf withering, and eventual plant death. 2,4-D is typically applied as an [amine salt](#), but more potent [ester](#) versions exist as well.

2,4-D is primarily used as an herbicide. It is sold in various formulations under a wide variety of brand names. 2,4-D can be found in lawn herbicide mixtures such as "Weed B Gon MAX", "PAR III", "Trillion", "Tri-Kil", "Killex" and "Weedaway Premium 3-Way XP Turf Herbicide". All of these mixtures typically contain three active ingredients: 2,4-D, [mecoprop](#) and [dicamba](#). Over 1,500 herbicide products contain 2,4-D as an active ingredient.

2,4-D is most commonly used for:

2,4-D is most commonly used for:

- . Weed control in lawns and other turf
- . Control of weeds and brush along fences and highway and railroad rights of way
- . Conifer release (control of broad-leaf trees in conifer plantings)
- . Grass hayfields and pastures
- . Cereal grains corn and sorghum (occasionally)
- . As a synthetic auxin analog

2,4-D continues to be used, where legal, for its low cost. However, where municipal lawn pesticide bylaws exist, such as in Canada, alternatives such as [corn gluten meal](#) and [vinegar](#)-based products are increasingly being used to combat weeds. The [LD₅₀](#) determined in an acute toxicity rat study is 639 mg/kg. Single oral doses of 5 and 30 mg/kg body weight did not cause any acute toxic effects in human volunteers. This chemical has been associated with the risk of [amyotrophic lateral sclerosis](#).

The [amine](#) salt formulations can cause eye damage ([blindness](#)) on contact; [ester](#) formulations are considered non-irritating to the eyes. One study found that occupational exposure to 2,4-D caused male reproductive problems, including dead and malformed [sperm](#). Concerns regarding [neurotoxicity](#) have been voiced with increased sensitivity to [amphetamine](#) and thus concerns of increased risk of [drug addiction](#) among those exposed. It is possible that 2,4-D causes cancer in humans.

Thank You