Lifeline™ herbicide is a new non-selective, post-emergent herbicide providing broad spectrum weed control of some of the most challenging weeds; including control of glyphosate resistant marestail, hairy fleabane, malva, and filaree. Utilizing a unique mode of action, Lifeline inhibits glutamine production in the weeds which leads to a breakdown in photosynthesis. This makes Lifeline an excellent choice when developing your overall weed resistance management strategy.

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Contact your local UPI sales representative or distributor, call 1-800-438-6671 or visit www.upi-usa.com for more information. Doing Things Better.
**Formulation Characteristics**

- **Active ingredients**: Glufosinate ammonium
- **Use At/Uniform**: 2.44 (280 gram/liter)
- **Formulation type**: SL (aqueous solution)
- **Signal word**: CAUTION
- **DOT**: Non-regulated
- **pH**: 4 to 6
- **Flashpoint**: 5 hours after application
- **Appearance**: Magenta Red to Reddish
- **Density**: 1.15 gm/ml @ 20ºC
- **Weight per gallon**: 9.6 lb (without container)
- **Odor**: Mild ammonic-like smell
- **Flammability**: Aqueous liquid >200ºF

**Why Does Lifeline have a “Caution” Label?**

- UPL developed our own glufosinate technical.
- UPL does not source technical from a third party.
- UPL completed product chemistry and tox data packages on UPL developed glufosinate technical.
- UPL glufosinate technical is a pure technical.
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**General Application Information**

Apply to emerged, young, actively growing weeds in broadcast, banded, directed spray, or spot treatments. Uniform, thorough spray coverage is necessary to achieve consistent weed control. Avoid direct spray, drift or mist to desirable vegetation, green bark, stems, or foliage as injury may occur. Do not apply early in or through irrigation systems.

**Application Timing**

- **Warm temperatures, high humidity, and bright sunlight improves the performance of Lifeline herbicide.**
- **Wetted control may be reduced when applications are made to weeds under stress due to drought or cool temperatures.**
- **Weeds under stress, or in dense populations, will require application at the highest specified use rate.**
- **Stressed conditions also include prior treatments of other contact or systemic herbicides - do not re-treat these weeds with Lifeline herbicide until sufficient re-growth has occurred.**
- **To maximize weed control, do not cultivate 5 days before, to 7 days after an application.**
- **Research indicates better weed control will be achieved if Lifeline herbicide is applied during the day.**
- **Between red morning and 2 hours before sunset.**

**Speed of Activity & Symptoms**

- **Injury symptoms 3 to 5 days after treatment.**
- **Longer in cooler temperatures (7-14 days).**
- **Symptoms begin with chlorosis and wilting, followed by necrosis and death.**
- **Perennial weeds are difficult to control.**
- **Due to limited root translocation and uptake.**

**Registered Crops**

**Crop Group**

- **Berries**: Blackberries, Blueberries
- **Citrus**: Grapefruit, Lemon, Lime, Orange
- **Grapes/Climbing Vine**: Grape, Gooseberry, Kiwifruit
- **Olives**: Olive
- **Pome**: Apple, Crabapple, Pear
- **Stone**: Apricot, Cherry, Nectarine, Peach, Plum, Prune
- **Tree Nuts**: Almond, Pecan, Pecan, Pecan, Walnut

**OTHER USES**

- **Farmsteads, Recreational & Public Areas**: Farmstead, building foundations, shelter belts, airports, commercial ponds, storage and lumber yards, educational facilities, fence lines, ditch banks, dry ditches, school, parking lots, park farms, pumping stations, parks, other public areas.

**Use Rates**

<table>
<thead>
<tr>
<th>Crop</th>
<th>Use Rate/Acre</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree Fruit, Tree Nut, Vine, Berries, Olives</td>
<td>PHI = 14 days</td>
<td></td>
</tr>
<tr>
<td>Weeds less than 3” in height</td>
<td>48 fl oz/Acre</td>
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**Potato Vine Desiccation**

**Crop Group**

- **Potato**: Vine desiccation

**Use Rates**

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<tbody>
<tr>
<td>Potato Vine Desiccation</td>
<td>PHI = 9 days</td>
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<tr>
<td>Weeds less than 3” in height</td>
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**Please refer to label for a complete list of: weeds controlled, approved crops, and crop specific application information.**

**Weed Height in Inches**

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### Formulation Characteristics
- **Active ingredients**: Glufosinate ammonium
- **Use At/Gallon**: 2.34 (280 grams/liter)
- **Formulation type**: SL (aqueous solution)
- **Signal word**: CAUTION
- **DOT**: Non-regulated
- **pH**: 4 to 6
- **Rainfastness**: 3 hours after application
- **Appearance**: Magenta Red to Reddish
- **Density**: 1.15 gm/ml @ 20ºC
- **Weight per gallon**: 9.6 lb (without container)
- **Odor**: Mild ammonic-like smell
- **Flammability**: Aqueous liquid >200ºF

### Why Does Lifeline have a “Caution” Label?
- UPL developed our own glufosinate technical.
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- UPL glufosinate technical is a pure technical.
- Product chemistry and tox data placed on UPL glufosinate technical produced the CAUTION category.

### Key Weeds
- **Marestail**
- **Pigweed (redroot)**
- **Barnyardgrass**
- **Hairy Fleabane**
- **Purslane**
- **Malva**
- **Junglerice**
- **Goosegrass**
- **Filaree**
- **Crabgrass**

Please see label for full list of weeds controlled.

### General Application Information
- **Application Timing**
  - Warm temperatures, high humidity, and bright sunlight improves the performance of Lifeline herbicide.
  - Weed control may be reduced when applications are made to weeds under stress due to drought or cool temperatures.
  - Weeds under stress, or in dense populations, will require application at the highest specified use rate.
  - Stressed conditions also include prior treatments of other contact or systemic herbicides - do not re-treat these weeds with Lifeline herbicide until sufficient re-growth has occurred.
  - To maximize weed control, do not cultivate 3 days before, to 7 days after an application.
  - Research indicates better weed control will be achieved if Lifeline herbicide is applied during the day.
  - Between red morning and 2 hours before sunset.

### Speed of Activity & Symptoms
- Injury symptoms 3 to 5 days after treatment
- Longer in cooler temperatures (7-14 days)
- Symptoms begin with chlorosis and wilting, followed by necrosis and death
- Perennial weeds are difficult to control
- Due to limited root translocation and uptake

### Weed Height in Inches Use Rate/Acre Comments
- **Weeds less than 3” in height**
  - 48 fl oz/Acre
  - Do not apply to potatoes grown for seed
  - Do not apply more than 1 application per harvest
  - Water volume 20 - 100 gpa
  - Apply with spray boom as low as possible to achieve thorough coverage of the potato vines

### Registered Crops
<table>
<thead>
<tr>
<th>CROP GROUP</th>
<th>KEY CROPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berries</td>
<td>Blackberries, Blueberries</td>
</tr>
<tr>
<td>Citrus</td>
<td>Grapefruit, Lemon, Lime, Orange</td>
</tr>
<tr>
<td>Olives</td>
<td>Olive</td>
</tr>
<tr>
<td>Peas</td>
<td>Apple, Cranberry, Pear</td>
</tr>
<tr>
<td>Stone</td>
<td>Apricot, Cherry, Nectarine, Peach, Plum, Prune</td>
</tr>
<tr>
<td>Tree Nuts</td>
<td>Almond, Filbert, Pecan, Patachou, Walnut</td>
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### OTHER USES
#### Farmstead, Building Foundations & Public Areas (Do not apply to potatoes grown for seed. Do not apply more than 1 application per harvest. Water volume 20 - 100 gpa. Apply with spray boom as low as possible to achieve thorough coverage of the potato vines.)
- Farmstead, building foundations, shelter belts, airports, commercial plants, storage and lumber yards, educational facilities, fence lines, ditch banks, dry ditches, school, parking lots, tank farms, pumping stations, parks, other public areas.

### Use Rates
#### Tree Fruit, Tree Nut, Vitex, Berries, Olives (PHI = 14 days)
- **Weeds less than 3” in height**: 48 fl oz/Acre
- **Weeds less than 6” in height**: 56 fl oz - 82 fl oz/Acre
- **Weeds greater than 6” in height or grasses that have been tilled**: 56 fl oz - 82 fl oz/Acre

#### Potato Vine Dessication (PHI = 9 days)
- **Weeds less than 3” in height**: 48 fl oz/Acre
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Please refer to label for a complete list of: weeds controlled, approved crops, and crop specific application information.
Formulation Characteristics

- Active ingredients: Glufosinate ammonium
- Lbs AI/Gallon: 2.34 (280 grams/liter)
- Formulation type: SL (aqueous solution)
- Signal word: CAUTION
- DOT: Non-regulated
- pH: 4 to 6
- Rainfastness: 3 hours after application
- Appearance: Magenta Red to Reddish
- Density: 1.15 gm/ml @ 20ºC
- Weight per gallon: 9.6 lb (without container)
- Odor: Mild ammonic-like smell
- Flammability: Aqueous liquid >200ºF

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Key Weeds

- Barnyardgrass
- Crabgrass
- Malva
- Hairy Fleabane
- Purslane
- Foxtail
- Goosegrass
- Filaree
- Filaree
- Barnyardgrass
- Crabgrass

Please see label for full list of weeds controlled.

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- Malva
- Hairy Fleabane
- Purslane
- Foxtail
- Goosegrass
- Filaree
- Crabgrass

Please see label for full list of weeds controlled.

Use Rates

- Use Rates/Acre
- PHI:
- Days

Tree Fruit, Tree Nut, Vine, Berries, Olives

<table>
<thead>
<tr>
<th>Weed Height in Inches</th>
<th>Use Rate/Acre</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Less than 3&quot;</td>
<td>48 fl oz/Acre</td>
<td>14</td>
</tr>
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<td>Less than 6&quot;</td>
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<td>9</td>
</tr>
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Potato Vine Dessication

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Farmstead, Ditches, Recreational & Public Areas

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OTHER USES

- Farmsilos, Ditches, Recreational & Public Areas
- Farmsilos, building foundations, shelter belts, airports, commercial plants, storage and lumber yards, educational facilities, fence lines, ditch banks, dry ditches, school, parking lots, tank farms, pumping stations, parks, public areas.
- Potatoes

Vine Dessication
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Resistance Group
Group 10

Pack Sizes
2 x 2.5 gallon - 30 gallon drums - 250 gallon totes

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Your Reliable Weed Control Solution.

• Consistent, reliable supply
• Quality SL formulation
• Excellent efficacy
• Signal Word – CAUTION

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20 Days After Application
27 Days After Application

CROP: Dormant Vineyard
YEAR: 2014
LOCATION: Two Bees Ag Research, Escalon, CA

CROP: Fallow
YEAR: 2014
LOCATION: N. Cal – B. Hanson U.C. Davis

CROP: Fallow
YEAR: 2014
Pigweed Control
LOCATION: N. Cal – B. Hanson U.C. Davis