**HERBICIDE**

**FLUAZIFOP-P-BUTYLB**

Systemic grass herbicide

Fluaazifop-p-butyl was developed and commercialized by ISK in the 1980’s and has been widely used numerous countries. Fluaazifop-p-butyl is highly effective against annual and perennial grasses and is non-toxic to broadleaf crops such as soybean, peanut, cotton, oil palm, citrus, and vegetable, etc.

**Physico-Chemical Properties**

- **Chemical structure**: aryloxyphenoxypropionate
- **IUPAC name**: butyl (R)-2-{4-[5-(trifluoromethyl)-2-pyridyloxy]phenoxy}propionate
- **Molecular weight**: 383.4
- **Molecular formula**: C19H20F3NO4
- **Vapour pressure**: 4.14x10^-4 Pa (25˚C)
- **Water solubility**: 1.75 mg/L (25˚C)
- **Form**: Pale yellow liquid
- **Development code**: SL-118

**Application**

**Uses**
Fluaazifop-p-butyl is a post-emergence product and provides excellent control of annual and perennial grasses, including wild oat and volunteer cereals. Fluaazifop-p-butyl is non-toxic to broadleaf plants and is therefore registered for use in a variety of broadleaf crops, such as soybean, oilseed rape, sugar beet, fodder beet, potatoes, vegetables, cotton, pome fruit, stone fruit, bush fruit, citrus fruit, vines, pineapples, bananas, strawberries, sunflowers, alfalfa, ornamentals, and other broadleaf crops. Application rate ranges from 125-375 g ai/ha.

**Mode of Action**

**Plant Uptake**
Fluaazifop-P-butyl is quickly absorbed into the leaf surface, hydrolysed to fluazifop-P and translocated through the phloem and xylem, accumulating in the rhizomes and stolons of perennial grasses and the meristems of annual and perennial grasses.

**Symptoms**
Weeds treated with fluazifop-p-butyl stop growing within a few hours, show gradual discolouration on newer growth in 3 to 4 days, and eventually necrosis, desiccation, and plant death occurs within 2 to 3 weeks.

**Selectivity**
Fluaazifop-p-butyl inhibits acetyl CoA carboxylase (ACCase), which is an essential plant enzyme that acts in fatty acid synthesis, and selectivity due to the difference of the enzyme sensitivity between gramineae and non-gramineae plants.

**Product**

<table>
<thead>
<tr>
<th>Trade Names</th>
<th>ONECIDE, NEW ONECIDE, HACHE UNO SUPER, 新薬薬, ウナサイドP, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formulations</td>
<td>15%EC, 17.5%EC</td>
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<tr>
<td>Registered Countries</td>
<td>Asia Cambodia, China, Japan, South Korea, Philippines, Taiwan, Vietnam, etc.</td>
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<tr>
<td></td>
<td>Americas Argentina, Chile, Peru, Uruguay, etc.</td>
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</tbody>
</table>
**Visual Effect of Herbicidal Activity**

2 days after application  
7 days after application  
21 days after application  
Weed: Digitaria ciliaris

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**Characteristics**

- Simple and convenient use instructions
- Selective and systemic post-emergent herbicide
- Controls annual and perennial weeds
- Non-toxic to broadleaf crops
- Resistant to wash-off by rain, due to systemic activity
- Safe to birds, fish, bees, and other beneficial insects

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**Weed Spectrum**

Fluazifop-P-butyl has excellent efficacy against annual and perennial grass weeds.

**Application rate and timing by each weed species**

<table>
<thead>
<tr>
<th>Weed Species</th>
<th>Application Timing (Post-emergence)</th>
<th>Rate (g a.i./ha)</th>
</tr>
</thead>
</table>
| *Setaria viridis*  
*Eleusine indica*  
*Digitaria ciliaris*  
*Echinochloa sp.* | up to 6 leaf-stage | 131 – 175 |
| *Bromus catharticus*  
*Cynodon dactylon*  
*Paspalum thunbergii* | up to 20 cm | 175 – 263 |
| *Imperata cylindrica*  
*Miscanthus sinensis*  
*Lolium perenne* | up to 30 cm | 263 |
| *Phragmites australis* | up to 100 cm | 263 |