



# FODDER BEET SPRAY GUIDE

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|-------|--|
| 04-05 | ORION FODDER BEET PORTFOLIO                    |
| 06    | ORION FODDER BEET SPRAY PROGRAMS               |
| 07    | ORION MOBILE APP                               |
| 08    | PROGRAM 1: EARLY EMERGENCE / LOW WEED PRESSURE |
| 09    | PROGRAM 2: LATE EMERGENCE / HIGH WEED PRESSURE |
| 10-11 | CLAW   |
| 12-13 | ORION METAMITRON                               |
| 14-15 | BETRON PM                                      |
| 16-17 | BETALL PD                                      |
| 18-19 | BBCH CHART                                     |
| 20    | CONTACT INFORMATION                            |



Orion AgriScience's fodder beet portfolio aims to provide field staff and end users with the ability to better tailor recommendations to specific situations while maintaining the option of using standard programs and recommendations if required. To achieve this we have taken ethofumesate out of our formulations and kept it a standalone product called Claw. By setting up our portfolio this way we have more control over the recommendation which has the potential to provide better results and better economic returns for the farmer.

Using the principles above we have developed the following formulations to complete our portfolio:

**Ambush - 5 & 20 L** (475 g/L pirimiphos-methyl and 25 g/L permethrin) – an emulsifiable concentrate of organophosphate and synthetic pyrethroid

- Ground and aerial application
- Use in combination with Synergy Wetter Sticker
- For control of springtails, leaf miner, nysius, aphids, and Argentine stem weevil

**Chlor-P - 5 & 20 L** (480 g/L chlorprifos) – an emulsifiable concentrate of group 1 organophosphate

- Insect control on seedling crops
- For control of nysius, wheat bug

**Dusk - 0.5, 10, 20, & 125 kg** (54 g/kg iron EDTA complex) – a granular bait

- Fast acting
- Broadcast or drill with seeds
- Safe for animals, pets, and birds

**Beetron PM - 10L** (100 g/L phenmedipham and 300 g/L metamitron) - a suspension concentrate of group 5 triazinone and phenyl-carbamate herbicides

- Pre- and Post-crop emergence broadleaf weed control
- Contact and root uptake
- Must be used with Claw

**Beetall PD - 5L & 10L** (160 g/L phenmedipham and 160 g/L desmedipham) – a suspo-emulsion formulation of group 5 phenyl-carbamate herbicides.

- Post emergence broadleaf weed control
- Contact only
- Desmedipham can be hard on young fodder beet

**Claw 20L** (500 g/L ethofumesate) –

a suspension concentrate that enhances the activity of metamitron, phenmedipham and desmedipham.

- Pre and post emergence annual grass and broadleaf weed control
- Pre emergence – taken in by emerging shoots of annual grass weeds and roots of germinating broadleaf weeds
- Post emergence – taken in by foliage followed by root uptake

**Deal 360 - 1, 5, 20, 200 & 1000 L** (360 g/L glyphosate)

**Deal 510RF - 20, 200, & 1000 L** (510 g/L glyphosate)

a soluble concentrate of the group 9 enzyme inhibitor glyphosate as the isopropylamine salt

- Pre-emergent weed control
- Uptake is via leaves and stems
- Ground and aerial application

**Orion Metamitron - 10 L** (700 g/L metamitron) – this product is a superior suspension concentrate which is user friendly.

- Post emergence broadleaf weed control
- Uptake is predominantly via roots, with some leaf uptake
- Some residual activity

**Void 1, 5, and 10 L** (300 g/L clopyralid) – a soluble concentrate of the group 4 pyridine carboxylate clopyralid.

- Post emergence broadleaf weed control
- Uptake is via leaves, stem, and roots
- Ground and aerial application

**Silmaxx - 1, 5, & 20 L** (trisiloxane alkoxyate) – an organosilicone penetrant/surfactant.

- Enhances the penetration and uptake of herbicides
- Aerial and ground application

**Synoil - 5 & 20 L** (trisiloxane alkoxyate) – Non-ionic wetter sticker.

- Enhances the spreading and uptake of herbicides
- Aerial and ground application

**Synergy wetter sticker - 5 L** (alkyl phenol ethoxyate) – white oil and polyglycol fatty acid esters.

- Soil active wetting agent
- Can be used with soil applied insecticides
- Aerial and ground application



Our product range lends itself towards two spray programs that can both be tailored further to provide more specific treatment of individual paddocks when required.

### **Program 1 – Early Emergence and Low Weed Pressure**

Recommendation for use when weed pressure is predicted to be low. Timing is critical with this program and favours growers with their own spray gear. It also favours a settled season in terms of weather to avoid missing application dates. It is best used at early weed emergence and has a high level of crop safety.

### **Program 2 – Late Emergence and High Weed Pressure**

Flexible and robust recommendation for use when the weed pressure is predicted to be high. Favours growers when the weather is unsettled and who rely on contractors by giving a longer window of opportunity between spray applications. It is also the program of choice when weed emergence is late.

### **Hints and Tips**

- Always apply to small actively growing weeds
- Avoid application directly after a rain when the fodder beet waxy cuticle on the leaf is compromised
- Do not apply during the heat of the day - avoid applications during temperatures above 28°C or during a drought
- Use 200 – 300 L/ha water
- 98 day withholding period for grazing after Beetron PM, 56 days for Claw and Beetail PD
- 3 hour rain fastness for Claw and Beetron PD
- Add Ambush or Chlor P if insects are present



*Fodder beet at late cotyledon stage.*

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## EARLY EMERGENCE AND LOW WEED PRESSURE

| Application Timing   | Herbicide & Rates/ha   | Target Weeds   | Comments  |
|--|--|--|---|
| <b>Pre Emerge Immediately after drilling</b>   | 2.0L Claw  | Annual nettle, annual poa, barnyard grass, chickweed, cleavers, cornbind, black nightshade, fathen, fumitory, redroot, shepherd purse, sow thistle, speedwell, spurrey, summer grass, wild potulaco, wild oats, willow weed and wireweed   | *Apply asap after planting to a well prepared moist and firm seedbed<br>*1.5 L Deal 360 can be added up to 3 days after drilling  |
| <b>1st Post Emerge Application dictated by weed emergence irrespective of crop stage</b> | 2.0-2.5 L Beetron PM + 0.4-0.5 L Claw                        | Annual nettle, cleavers, black nightshade, fathen, hairy nightshade, hedge mustard, prostate amaranthus, redroot, shepherd purse, speedwell, stinking mayweed, storksbill, vervain, wild potulaco and willow weed<br>Suppressed: field pansy, twincrest, mallow, verigated thistle and wireweed  | *Apply to fully expanded weed cotyledon (don't let earliest weeds get past 1st true leaf stage)<br>*Rule of thumb is to see green tinge across the paddock<br>*Some weeds may not have emerged at this application<br>*If adding extra Claw wait until crop is past cotyledon stage |
| <b>2nd Post Emerge After crop has 2 true leaves larger than 10mm</b>                     | 1.1-1.9 L Beetall PD + 0.9-1.5 L Metamitron + 1.0-2.0 L Claw | Annual buttercup, annual poa, black nightshade, chickweed, cornbind, fathen, field pansy, fumitory, groundsel, henbit, redroot, shepherds purse, twin cress, willow weed<br>High Rates: annual nettle, cleavers, dandelion, docks, hedge mustard, henbit, plantain, portulaca, prostate amaranthus, volunteer rape, water pepper, speedwell, spurrey, stinking mayweed, storksbill, yarrow, white clover, wild radish and wireweed | *Apply before weeds reach 4 leaf stage<br>*For annual grass weeds, cleavers, sow thistle and wireweed keep Claw rate up<br>*Add 0.5 - 1 L/ha Void for thistles and yarrow before bulb forms   |



## LATE EMERGENCE AND HIGH WEED PRESSURE

| Application Timing   | Herbicide & Rates/ha  | Target Weeds   | Comments  |
|--|---|--|---|
| <b>Pre Emerge Immediately after drilling</b>                         | 2.0L Claw   | Annual nettle, annual poa, barnyard grass, chickweed, cleavers, cornbind, black nightshade, fathen, fumitory, redroot, shepherd purse, sow thistle, speedwell, spurrey, summer grass, wild potulaco, wild oats, willow weed and wireweed   | *Apply asap after planting to a well prepared moist and firm seedbed<br>*1.5 L Deal 360 can be added upto 3 days after drilling   |
| <b>1st Post Emerge When crop has 2 true leaves</b>                   | 1.1 L Beetal PD<br>+ 1.0 L Metamitron<br>+ 1.0 L Claw             | Annual buttercup, annual poa, black nightshade, chickweed, cornbind, fathen, field pansy, fumitory, groundsel, redroot, shepherds purse, twin cress, willow weed   | *Apply before weeds reach 2 - 3 leaf stage<br>*Normally around 10 - 14 days after pre emerge application<br>*Add 0.5 - 1 L/ha Void for thistles and yarrow                                      |
| <b>2nd Post Emerge After crop has 2 true leaves larger than 10mm</b> | 1.1-1.9 L Beetal PD<br>+ 1.0-1.5 L Metamitron<br>+ 1.0-2.0 L Claw | Annual buttercup, annual poa, black nightshade, chickweed, cornbind, fathen, field pansy, fumitory, groundsel, henbit, redroot, shepherds purse, twin cress, willow weed<br>High Rates: annual nettle, cleavers, dandelion, docks, hedge mustard, henbit, plantain, portulaca, prostate amaranthus, volunteer rape, water pepper, speedwell, spurrey, stinking mayweed, storksbill, yarrow, white clover, wild radish and wireweed | *Apply before weeds reach 4 leaf stage<br>*For annual grass weeds, cleavers, sow thistle and wireweed keep Claw rate up<br>*Add 0.5 - 1 L/ha Void for thistles and yarrow before bulb formation |

### GENERAL INFORMATION

Claw is a selective herbicide for the control of barley grass in pasture and weed control in red beet, fodder beet, sugar beet and ryegrass turf. Best results are obtained when weeds are not under stress.

**Weeds Controlled. Susceptible:** Redroot, fumitory, cleavers, chickweed, spurrey, wild portulaca, summer grass, annual poa, sow thistle. **Moderately Susceptible:** Fathen, black nightshade, wireweed, willow weed, speedwells, barnyard grass, wild oats, cornbind, annual nettle, shepherds purse. **Resistant:** Wild radish, dead nettle, galinsoga, ryegrasses, groundsel, perennial weeds. **Controlled Pre-Emergence Only:** Cornbind, annual nettle, shepherds purse.

### APPLICATION METHODS

Non-reinforced PVC tubing may soften and swell after prolonged contact. Use conventional ground spraying equipment. Clean sprayer thoroughly with water and detergent.

### COMPATIBILITY

Do NOT mix with any wetting agents or surfactants. May be tank mixed with products containing phenmedipham and desmedipham. Mixing with phenoxy herbicides for use on pasture is NOT recommended.

### RAINFALL

Do not apply if rain is expected within 3 hours of spraying.

### WITHHOLDING PERIODS

**It is an offence for users of this product to cause residues exceeding the relevant MRL in the Food Notice:**

#### Maximum Residue Levels for Agricultural Compounds.

Pasture - Do NOT graze stock on treated areas for 28 days.

Beet Crops— Do NOT graze stock on treated areas for 56 days.

### DIRECTIONS FOR USE

| Crop        | Weeds Controlled | Rate per Hectare   | Rate for Gun Application | Critical Comments  |
|-------------|------------------|--|--------------------------|--|
| Fodder Beet | Barley grass     | Pre-sowing and Pre-emergence:<br>2 litres/ha in 200-300 litres of water<br><br>Post-emergence:<br>2 litres/ha in 200-300 litres of water | 400 ml/100 litres water  | Apply before crop or weed emergence and before or as soon as possible after drilling. The seedbed needs to be fine, firm and moist. If moisture is limited, shallow (2-5cm) incorporation of pre-sowing treatment may be preferred.<br><br>Make two applications in combination with 1.5 L/ha of Beetal™ PD after the crop has 2 true leaves fully developed. Apply first spray when the weeds are at cotyledon to 2 true leaf stage. Apply the second spray 10 – 14 days later. |
| Sugar Beet  | Barley grass     | Pre-emergence:<br>2-3 litres/ha in 200 - 300 litres water per ha<br><br>Post-emergence:<br>2 litres/ha in 200-300 litres of water        | 400 ml/100 litres water  | Apply before crop or weed emergence and as soon as possible after drilling. The seedbed needs to be fine, firm and moist. Use the highest rate where moisture is limited or the seedbed is less than ideal.<br><br>Make two applications in combination with 1.5 L/ha of Beetal™ PD after the crop has 2 true leaves fully developed. Apply first spray when the weeds are at cotyledon to 2 true leaf stage. Apply the second spray 10 – 14 days later.                         |



**GENERAL INFORMATION**

**Orion Metamitron** is a selective post-emergence herbicide for the control of various weeds in fodder beet, red beet (beetroot), sugar beet and mangolds. Uptake is predominantly via roots, with some uptake via leaves. Some residual activity occurs. Application to small weeds gives best results.

**Weeds Controlled:**

**Susceptible:** Amaranthus spp., annual poa, buttercups (seedling), chickweed, docks (seedling), fathen, galinsoga, groundsel, hawksbeard, henbit, matricaria spp. (stinking mayweed and chamomiles), nettles, pennycress, scotch thistle (seedling), shepherds purse, sow thistle, speedwells, spurrey, twin cress, white clover, wild portulaca, yarrow (seedling).

**Moderately Susceptible:** Black nightshade, field pansy, fumitory, hedge mustard, scarlet pimpernel, thorn apple, wireweed.

**Non-Susceptible:** Californian thistle, cleavers, combind, grasses (most), wild oats.

**DIRECTIONS FOR USE**

**It is an offence for users of this product to cause residues exceeding the relevant MRL in the Food Notice:**

**Maximum Residue Levels for Agricultural Compounds**

| Crop  | Rate                              | Critical Comments   |
|---|-----------------------------------|---|
| Fodder beet, Red beet (Beetroot),<br>Sugar beet, Mangolds | 6 L/ha in 200 –<br>300 L/ha water | Apply early post emergence, when weeds are small, and the crop has fully expanded cotyledons but before the second true leaf stage. |

**APPLICATION METHODS**

**Boom spraying:** Apply using conventional spray equipment with thorough agitation. Nozzles should produce a fine mist. Apply the required rate of Metamitron in 200 - 300 litres water/ha.

**MIXING**

Shake well before use. Add the required quantity of Metamitron to the spray tank partly filled with water, and maintain agitation through filling and spraying.

**RESISTANCE MANAGEMENT****GROUP 5 HERBICIDES**

Orion Metamitron contains metamitron, a group 5 herbicide belonging to the triazinone chemical family. Some naturally occurring weeds may become resistant when excessive use of the same herbicide occurs. To prevent or delay the development of resistance, use in tank mixes and/or rotate use with herbicides with a different mode of action. Consult <http://resistance.nzpps.org/index.php> for alternative modes of action and details of resistance management strategies (if any) for the crops listed on the label.



**GENERAL INFORMATION**

Beetron PM is a post-emergence selective herbicide for broadleaf weed control in fodder beet, red beet (beetroot) and sugar beet. Beetron PM must be used in conjunction with Claw. By applying in conjunction with Claw, the 3-way active ingredient combination provides knockdown and short term residual control of a number of weed species. This active combination is absorbed through the roots and leaves of the weeds, and is translocated to the target site where it disrupts the weed metabolism. Weeds show yellowing after 3 – 5 days, before rapidly dying off.

**Susceptible Weeds:**

Black nightshade, cleavers, fatten, hairy nightshade, hedge mustard, scrambling speedwell, stinging nettle, prostrate amaranth, stinking mayweed, shepherds purse, redroot, storksbill, vervain, wild portulaca, willow weed. The following weeds will only be suppressed: field pansy, small flowered mallow, twincrest, variegated thistle, wireweed and any weeds listed growing from root chips.

**APPLICATION METHODS**

**Boom spraying:** Apply in a minimum of 200 litres water/ha.

**MIXING**

Shake well before use. Add the required quantity of Beetron PM to the spray tank partly filled with water, and maintain agitation through filling and spraying. Only mix enough spray for immediate use, and avoid storing mix for later use.

**COMPATIBILITY**

Beetron PM is compatible with chloridazon and clopyralid containing products. If using with insecticides or fungicides, avoid tank mixes before the crop has reached the 4 true leaf stage. Do NOT mix Beetron PM with any other adjuvants, surfactants or oils unless crop safety has been verified.

**RAINFALL**

Do not spray if rainfall is expected within 3 hours of spray drying on the foliage.

**WITHHOLDING PERIOD**

**It is an offence for users of this product to cause residues exceeding the relevant MRL in the Food Notice:**

**Maximum Residue Levels for Agricultural Compounds**

Fodder Beet, Sugar Beet                    98 days  
Red Beet (Beetroot)                        49 days

**DIRECTIONS FOR USE**

Always apply in combination with Claw.

**Fodder Beet, Red Beet (Beetroot) and Sugar Beet**

| Situation                             | Rate   | Critical Comments   |
|---------------------------------------|--|---|
| Pre-Crop Emergence                    | 2 - 3 L/ha<br>In combination with<br>400 – 600 mL/ha Claw.   | Apply any time after sowing. Use the low rate only in light soils or where weeds pressure is expected to be low. Always follow up with a post emergence spray programme.  |
| Post Crop Emergence to Canopy Closure | 1.5 – 2.5 L/ha<br>In combination with<br>300 – 500 mL/ha Claw.<br>Do Not apply more than<br>7.5 L/ha in any one season | Apply when weeds are actively growing. Adequate soil moisture before and after application will improve control. Use up to 4 applications at 7 – 14 day intervals as weeds emerge (irrespective of crop stage). Use the lower rate on weeds at cotyledon – 2 true leaf stage, and the higher rate when weeds are larger or the weed population is dense. Weeds beyond the 6 leaf stage will require repeat treatments, and only suppression may be achieved. Avoid application where crops are stressed, e.g., drought, or following frost, as crop damage may occur. |



### GENERAL INFORMATION

Beetall PD is a post-emergence selective herbicide for broadleaf weed control in fodder beet. Beetall PD works best in good growing conditions, and herbicidal activity will be slowed down in cool weather.

Ingredients: Beetall PD contains 160 g/L phenmedipham and 160 g/L desmedipham as the active ingredients, and 4% of fatty alcohol polyglycol ether as a surfactant.

#### Weeds Controlled:

As seedlings – Chickweed, fathen, fumitory, groundsel, nettle, redroot, shepherds purse, spurrey, twin cress Up to 4 leaf stage – Black nightshade, corn bind, willow weed

#### Resistant Weeds:

Mature annual broad leaf weeds, grass weeds, perennial weeds, wireweed

### APPLICATION METHODS

**Boom spraying:** Apply in 200 – 300 litres water/ha. Apply as a broadcast or band treatment. For band treatment, ensure that the use rate per ha is consistent with the label recommendation.

#### MIXING

Add the required quantity of Beetall PD to the spray tank partly filled with water, and maintain agitation through filling and spraying.

#### COMPATIBILITY

Do NOT mix Beetall PD with any foliar nutrients or surfactants.

#### RAINFALL

Do not spray if rainfall is expected before the spray has dried on foliage.

#### WITHHOLDING PERIOD

**It is an offence for users of this product to cause residues exceeding the relevant MRL in the Food Notice:**

#### Maximum Residue Levels for Agricultural Compounds

Fodder Beet 56 days

Do NOT graze stock on treated areas for 56 days after spraying.

### RESISTANCE MANAGEMENT

|              |           |                  |
|--------------|-----------|------------------|
| <b>GROUP</b> | <b>C1</b> | <b>HERBICIDE</b> |
|--------------|-----------|------------------|

Beetall PD contains phenmedipham and desmedipham, group 5 herbicides belonging to the phenyl-carbamate chemical family. Some naturally occurring weeds may become resistant when excessive use of the same herbicide occurs. To prevent or delay the development of resistance, use in tank mixes and/or rotate use with herbicides with a different mode of action. Consult <http://resistance.nzpps.org/index.php> for alternative modes of action and details of resistance management strategies (if any) for the crops listed on the label.

#### WARRANTY

This formulation is warranted to contain the specified active ingredient within accepted analytical tolerance when packed. The user bears the risk for damage resulting from factors beyond the manufacturer's control. The manufacturer declines all liability for damage resulting from improper storage or use of the product.

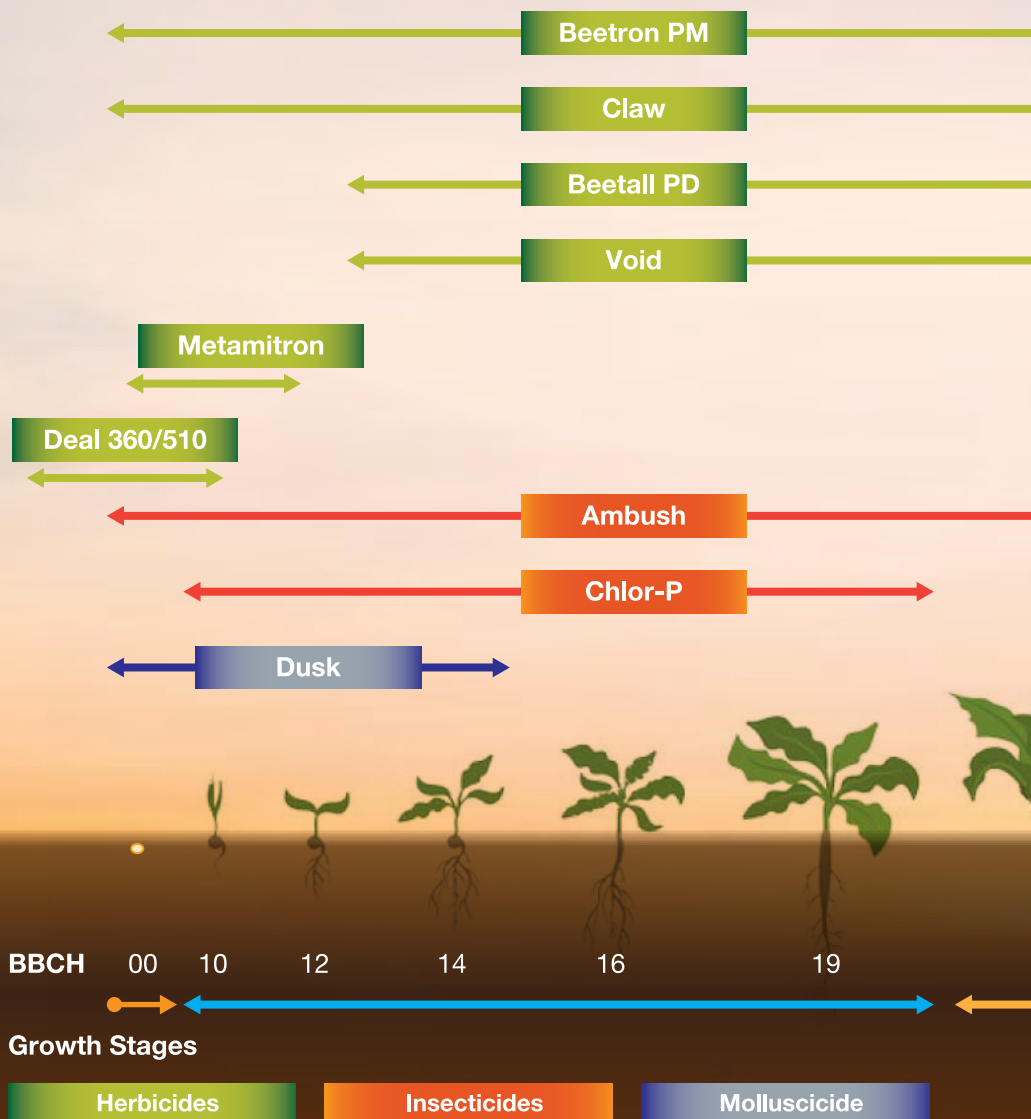
### DIRECTIONS FOR USE

| Crop        | Rate     | Timing                                       | Critical Comments  |
|-------------|----------|--|--|
| Fodder Beet | 1.5 L/ha | After crop has 2 true leaves fully developed | Apply in combination with 2 L/ha of Claw™. Apply first spray when the weeds are at cotyledon to 2 true leaf stage. Apply the second spray 10 – 14 days later.<br>Note: Best results are obtained in a spray programme using Claw pre-emergence.<br>Do NOT apply if the air temperature is likely to rise above 29°C. |





# Protecting your fodder beet every step of the



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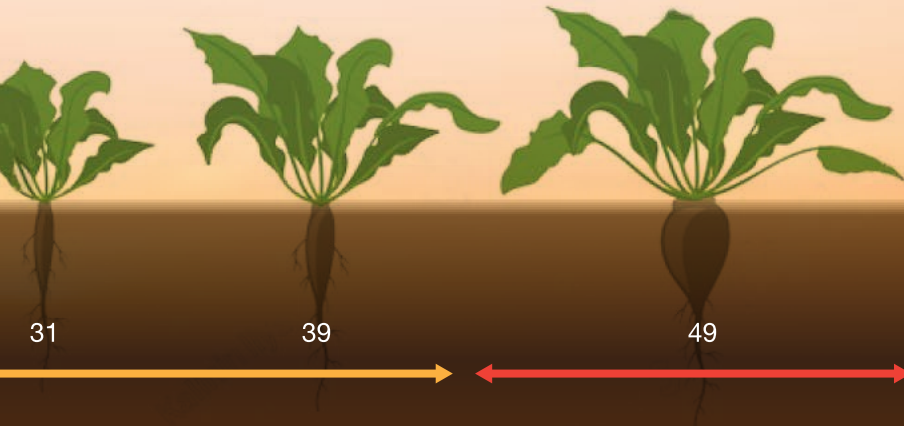
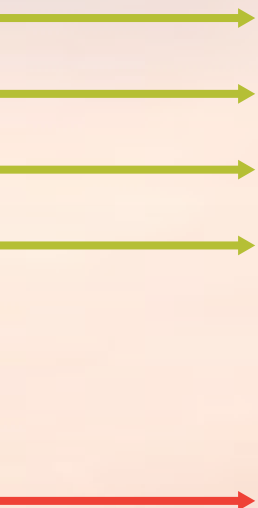
Growth Stages

Herbicides

Insecticides

Molluscicide

way





## CONTACT INFORMATION

|  |                     |              |
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