OVERDOSE. Spraying needless or excess amount of herbicide and diluent on treatment zone, the use of one-sided treatment when Streamline™ treatment is sufficient and creating huge wrap on treated stems are all examples of potential overdose.

SOLUTIONS: Do not spray up and down during one-sided treatments or back and forth during Streamline™ treatments. Use one-pass treatments, use a short and quick trigger pull (i.e. flick and let go), change nozzle to one size down (i.e. from 0.3 to 0.2).

EMULSIFICATION. Emulifier present in Release XRT, Garlon RTU or Garlon XRT is activated by “free” water on the stem. The diluent/herbicide mixture is now an emulsion (oil droplets encased in water) and can no longer penetrate bark, so spray turns milky and runs down the stem instead of creeping around the stem.

SOLUTIONS: Wait for stems to dry; move treatment zone up to avoid “free water” on the base caused by melting frost, wet snow, or rain.

VOLATILITY. If mineral oil diluent is used in daytime temperatures above 25°C, or on a south exposed area where “an oven” environment could occur, chemical instability of oil could lead to poor efficacy and could risk off-target damage to desirable plants.

SOLUTIONS: Change to a more appropriate diluent.

VAPORIZATION. If a backpack sprayer is over pressured, the spray solution comes out as very small particles and turns to a gas before hitting the target. A common warning sign is sprayer operators may change to a more appropriate diluent.

When mixing with diluent oils, read and follow the use directions and precautions on the product label prepared by the oil manufacturer.

Garlon RTU does not require any mixing.

Basal bark applications provide effective, highly selective control of trees and brush for industrial and forestry uses, such as conifer release or thinning. Dow AgroSciences supplies specialized vegetation management herbicides ideally suited to basal bark application:

• Garlon® RTU- Ready to Use for industrial vegetation management, forestry and range & pasture uses.

• Garlon XRT for industrial vegetation management and range & pasture uses.

• Release® XRT for forestry uses.

The active ingredient (triclopyr) readily penetrates through the bark and enters the cambium layer of target species. From the cambium, it moves throughout the nutrient and water movement systems of the plant, even into the roots to prevent re-sprouting.

ADVANTAGES

• Effective year-round, for selective control of trees and brush.

• Can be applied at any time of the year, including the winter months, except when snow or water prevents spraying at the desired height above ground level.

• Year-round usage allows efficiency in crew allocation and supervision.

• Can be used where foliar applications aren’t convenient, such as on steep or uneven terrain.

• Applications are targeted, greatly reducing the potential for injury to off-target vegetation.

• Minimized impact on environmentally sensitive or erosion prone areas.

HOW BASAL BARK TREATMENTS WORK

Young bark is lipophilic, meaning its structure acts like an open lattice, and allows fatty substances to move readily within it. That is why Release XRT or Garlon XRT mixed with an oil carrier is able to move within and through young bark tissue. Garlon RTU is formulated with an oil carrier and is ready to use with no mixing required. Basal bark treatments work best on young tender bark.

This inward movement reaches and penetrates the cambium (conductive tissue) and results in the herbicide creating a chemical girdle of the stem. Complete control depends on the stem being entirely encircled – termed “wrap.” Once the chemical girdle is formed, it acts like a physical girdle to prevent downward movement of nutrients to the roots, thus eventually killing the treated plant.

FACTORS AFFECTING TREATMENT

Optimal results are achieved when applications are made to young vigorously growing stems which have not developed the thicker bark characteristic of slower growing older trees. “Free water” on stems resulting from melting frost, wet snow or rain, causes emulsification and failure to penetrate bark. Emulsified herbicide runs down the treated stem like water, showing no evidence of “wrap.” If the wetting front formed by the oil in the bark does not wrap, then control is likely to be incomplete.

FROST. If no emulsification occurs (dry frost), then the solution is working. If the oil solution does not penetrate the frost (ice), shut down the application.

Watch for frost as temperature rises above 0°C and penetrate the frost (ice), shut down the application.

POTENTIAL SPRAY DRIFT. Keep application pressure low to prevent vapour drift. Small quantities of vapour drift, which may not be visible, can seriously injure susceptible plants and sensitive non-target vegetation.

RAIN. Basal bark and cut stump applications cannot be made to wet stumps or emulsification may occur and the target trees will not be controlled. However, rain immediately after an application will not affect the efficacy of the product as it will have already entered the bark.

SNOW. When snow prevents access to ground line at the base of target trees, one-sided application should be stopped. Two-sided Streamline™ application should be used on larger stems to assure wrap.

TEMPERATURE. Do not apply Garlon XRT and Release XRT when the temperature is below –10°C. Slight coagulation may form, which can plug spray nozzles. Garlon RTU can be applied at temperatures below –10°C, but applicators need to stop operations if coagulation begins to occur.
APPLICATION METHODS

STREAMLINE
This method is excellent for prevention of re-sprouting. It also reduces the need for repeated cutting of large diameter stump specimens that sprout from the base or sucker from roots. Applications may be made to both old and freshly cut stumps. This provides more consistent results than treating stumps with glyphosate, which must be applied immediately after the cut is made.

- For Garlon XRT and Release XRT, use 13 to 19 litres of herbicide in enough diluent to make 100 litres of spray solution (13 to 19 percent). Use the 19 percent solution for harder-to-control species such as hardwood trees, or when applying in the dormant season.
- For Garlon RTU there is no need for mixing with a diluent. Simply pour into the backpack or spray tank.
- Achieving complete “wrap” of the solution around the root collar.
- For stems less than 15 cm basal diameter, treat with a band 5 cm wide on two sides of each stem (Two-sided Streamline).
- With sufficient volume, the treated zone should widen to encircle the entire stem circumference within 30 minutes.

CUT STUMP
This method is excellent for prevention of re-sprouting. It also reduces the need for repeated cutting of large diameter stump species that sprout from the base or sucker from roots. Applications may be made to both old and freshly cut stumps. This provides more consistent results than treating stumps with glyphosate, which must be applied immediately after the cut is made.

- For Garlon XRT and Release XRT, use 13 to 19 litres of herbicide in enough diluent to make 100 litres of spray solution (13 to 19 percent). Use the 19 percent solution for harder-to-control species such as hardwood trees, or when applying in the dormant season.
- For Garlon RTU there is no need for mixing with a diluent, simply pour into the backpack or spray tank.
- Achieving complete “wrap” of the solution around the root collar.
- Make a single, smooth treatment pass.
- Speed and ease of monitoring by the sprayer are greatest with Streamline application.
- Switch from streamline to one-sided treatment if treating a few, scattered larger stems among large numbers of smaller stems, or when treating conifers.
- Use Two-Sided Streamline when many larger (> 6 –12 cm diameter) stems are being treated or if any portion of the lower 30 cm of target stems have free ground or snow on them.
- Use minimum effective concentration for the target species and season of application.
- Only spray once – no back and forth or up and down.
- Do NOT pull gun “full on”.
- NO Drips. Use a positive shutoff spray gun.
- Know what “wrap” is and how to use it to judge treatment effectiveness.

REQUIRED SPRAY EQUIPMENT

LOW PRESSURE BACKPACK SPRAYER: Piston pump pressure control system with atack, vicon or nitride seals (i.e. Hardi K-15, YardmasterTM 189). Use separate sprayers for basal bark applications to prevent emulsion from water in the backpack. Basal bark sprayers require a positive shutoff to eliminate drips and different nozzles than those for foliar applications. Many foliar sprayers also have pump pressure too high for basal bark application.

WAND: Spray gun with a light trigger, shutoff at nozzle, having teflon or nitride seals, and a length suited to method of treatment. One-sided treatment requires wands of 16 –18”, while wands of 12 – 16” are appropriate for Streamline treatment.

NOZZLES: Flat fan pattern, stainless steel, narrow angle (15° to 25°), large orifice (0.2 or 0.3) such as SS1502, SS1503, SS2502, or SS2503. On larger trees (> 8 cm dbh) where One-Sided or Cut Stump treatments are being performed, a wider angle, large orifice nozzle (2503) should be used. On smaller trees (< 5 cm dbh) where Streamline treatment is being performed, a narrow angle, small orifice nozzle (1502 or 1503) should be used.

SETTINGS FOR EFFECTIVE APPLICATION

- Lowest possible pressure to generate a straight stream “braided trickle”.
- Nozzle 2 – 4 cm from target point on stem.

CARE AND MAINTENANCE OF EQUIPMENT

- Use filter when filling.
- Tighten pump clamp ring twice daily.
- Wipe outside of pack with dry cloth/paper towel after each fill.
- Replace a main flack seal on pump every other year.
- Replace shut-off valve seat on spray gun as soon as a drip occurs.
- Install higher quality braided hose on backpack immediately upon purchase.
- Support first 10 cm of hose with outer case of larger diameter hose.

MAXIMIZING EFFECTIVENESS OF BASAL BARK TREATMENTS

- Achieving complete “wrap” of the solution around the root collar.

- For stems less than 8 cm basal diameter.
- For stem less than 15 cm basal diameter.
- Save results than treating stumps with glyphosate, which must be applied immediately after the cut is made.

- Streamline treatment: fan vertical.
- One-Sided treatment: fan horizontal.
- Nozzle 2 –4 cm from target point on stem.
- Use minimum effective concentration for the target species and season of application.
- Only spray once – no back and forth or up and down.
- Do NOT pull gun “full on”.
- NO Drips. Use a positive shutoff spray gun.
- Know what “wrap” is and how to use it to judge treatment effectiveness.

- For Carlon XRT and Release XRT, use 13 to 19 litres of herbicide in enough diluent to make 100 litres of spray solution (13 to 19 percent). Use the 19 percent solution for harder-to-control species such as hardwood trees, or when applying in the dormant season.
- For Carlon RTU there is no need for mixing with a diluent, simply pour into the backpack or spray tank.
- Achieving complete “wrap” of the solution around the root collar.
- For stems less than 15 cm basal diameter, treat with a band 5 cm wide on two sides of each stem (Two-sided Streamline).
- With sufficient volume, the treated zone should widen to encircle the entire stem circumference within 30 minutes.

For stem less than 15 cm basal diameter.
Best results on stems less than 8 cm basal diameter.