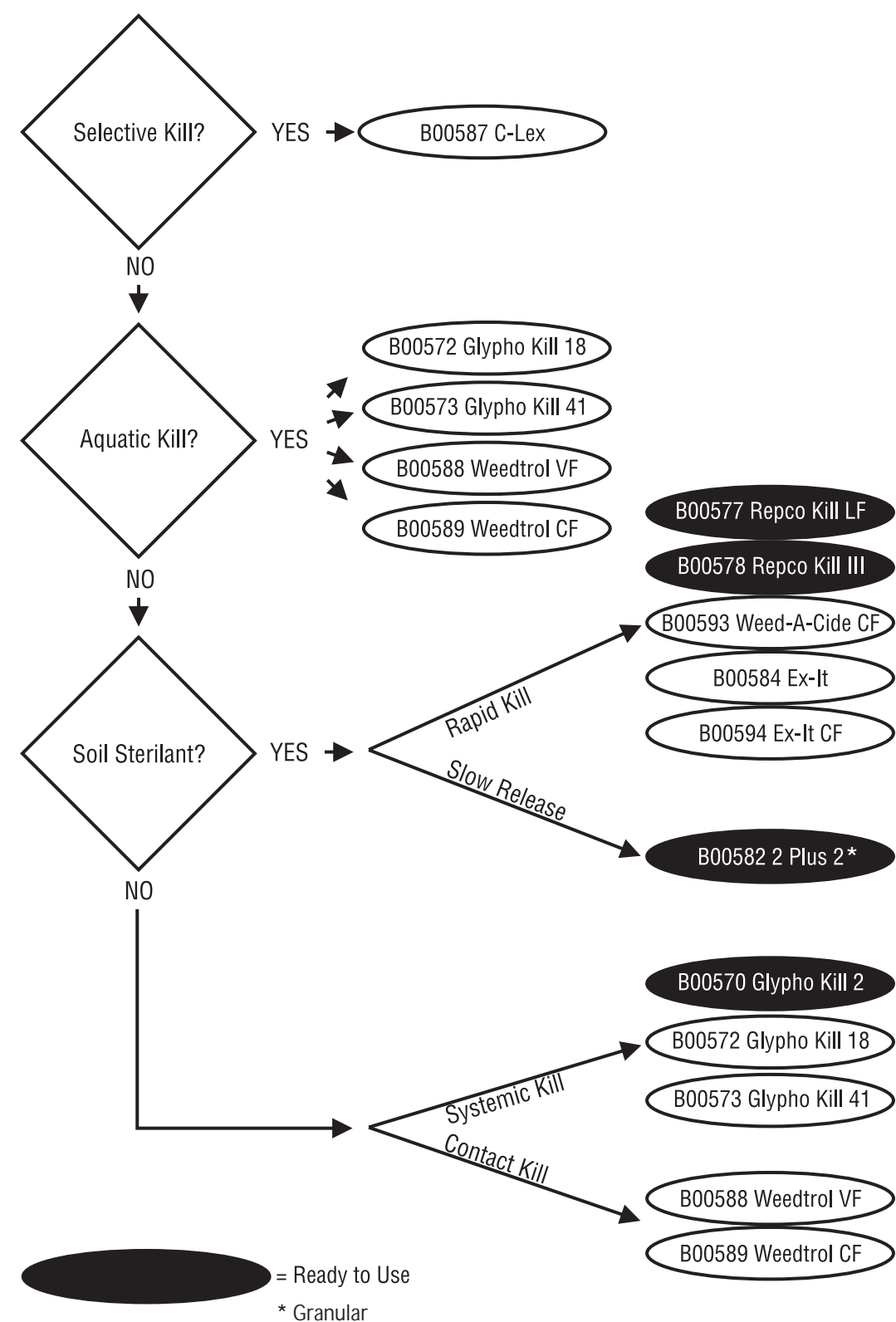


Product Decision Tree



Glossary

Annuals: A plant that lives and grows for one year; the plant completes its life cycle within a single growing season.

Biannual: Plant which lives and grows for two years. Usually biannuals develop a leaf cluster and root system the first year. The second year yields flowers and seeds, then the plant dies.

Broadleaf Weeds: Weeds such as Dandelions, Wild Onion & Garlic, Red Sorrel, and Plantain; characterized by their large leaf surface and susceptibility to certain types of herbicides such as 2,4-D.

Bromacil: An excellent soil sterilant used as a pre- and post-emergent herbicide. It is a substitute uracil compound that must be carried to the root system through moisture and absorption before killing action results. Although it is slow acting, bromacil is noncorrosive and nonvolatile.

Burndown: The effect is usually a fairly rapid wilting, withering, and browning of the plant upon coming in contact with the herbicide. Burndown may or may not be related to the plant actually dying. Desiccation or dehydration are also captured as burndown symptoms.

Contact Kill: Herbicides must directly contact portions of the plant above ground to be effective.

Desiccate: A term used for "drying" or "withering" of leaves.

2,4-Dichlorophenoxyacetic acid (2,4-D): 2,4-D is a selective weed killer. While it is used as a post-emergent weed killer, it can also be used in some applications as a pre-emergent weed killer. 2,4-D is referred to as a hormone-type herbicide which will act as a natural plant growth hormone. The use of this product will actually cause the plant to rapidly grow itself to death. 2,4-D does not effect animals and has a very low mammalian toxicity throughout the plant. 2,4-D is highly volatile and can affect adjacent plants. This herbicide is more effective against broadleaf weeds than against cereals and grasses.

Diquat dibromide: A contact, non-selective herbicide and plant desiccant, applied post-emergent. This herbicide is used as a general contact weed killer which doubles as an aquatic weed killer. When used in non crop areas, the plant foliage should be completely covered. When used as an aquatic herbicide, water should be clear with no suspended silt and flow should be very slow or still. Diquat is very effective in small doses. Rapid killing is visible in just a few days. It is inactivated immediately upon contact with the soil. Diquat has been found to be more effective on broadleaf plants. In order for this herbicide to perform its killing action, sunlight and oxygen must be present.

Diuron: As a member of the group of soil sterilants known as substituted ureas, diuron is grouped with other sterilants such as Monuron, Linuron and Fenuron. This herbicide is persistent and is valuable as a total weed killer. While it is a slow dissolver and stays near the surface, the use of this herbicide may prevent weed germination for as long as one year. Diuron kills the plant by interfering with the

photosynthesis, thus depriving the plant of food. This herbicide is easily absorbed from the soil by plant roots and is rapidly translocated to the stems and leaves.

Drift: Carry-over of the herbicide spray during application due to wind and/or temperature. When applying contact kill or nonselective herbicides, care must be taken to prevent wind currents and/or overspray from accidentally spraying desired plants.

Glyphosate: Nonselective, nonsterilant herbicide active ingredient that works to inhibit the enzyme essential to the formation of a plant-specific amino acid (protein). Effective on over 110 different annual and perennial weeds and grasses this material is one of the most widely used actives today in retail, agricultural, and lawn & garden applications. Ideally suited for widespread use, the translocation type herbicide is absorbed by leaves and stems and produces browning and kill of the entire plant. Rate of kill is directly proportional to metabolism of plant in growth. Replanting can occur usually after just seven days making the treatment-replant cycle very short.

Herbaceous Plants: Plants having tops (above ground portion) that die each year and do not develop woody tissue.

Hydrocarbon: Solvents commonly used as the carrier for oil-based herbicides (see phytotoxic oil).

Leaching: The "flushing" of active herbicide (usually a sterilant) into an area where the weed killer was not applied. The "run off" is the result of either irrigation or rain water flushing the active ingredient out of the treated area.

Nonselective: A general herbicide formulated to kill any plant.

Perennial: Plant that grows for three or more seasons. The top dies back each year while the underground roots or stems live through the winter. New stems and leaves develop the next season.

Photosynthesis: The process of converting water, sunlight, and carbon dioxide to carbohydrates and oxygen by the chlorophyll of green plant life.

Phytotoxic Oil: A term used to describe the kill mechanism of an oil which penetrates and disrupts the plasma membranes in a plant.

Post-emergence: Term used to describe the phase growth for a plant that has or is developing its "above ground" structures (see also pre-emergence).

Pre-emergence: Term used to describe the phase of growth for a plant that has not begun development of its "above ground" structures. More specifically, this is the seed and/or a germinating seed. 2,4-D has unusual properties in that it is capable of killing a wide variety of plants in the pre-emergence stage, but is selective for broad leaf plants when applied as a post-emergent.

Prometon: Formulated in 1957 by Ciba-Geigy Corp., this is a non-selective herbicide that is applied to both pre-emergent and post-emergent weeds for total vegetation and brush control in non-crop areas. This herbicide should be applied either at

weed emergence or 2 or 3 months afterwards. In most cases, it will control weed growth for a full season or longer.

Root Kill: Refers to the effect produced by herbicide formulations upon the root system. Root Kill is important for preventing weed regrowth from the root system after herbicide treatment.

Selective: Herbicide that kills only certain plants. Example: Tri-Kill and C-Lex are selective weed killers in that they target broad leaf plants when sprayed on foliage.

Sterilant: These weed killers are non-selective herbicides and, as the name implies, affect the soil such that no plants will grow in the treated area for one growing season (or more). This type of weed control chemical is particularly suited for industrial, commercial and other non-crop, non-agricultural land treatment.

Succulent: Refers to plants using high volumes of water for survival.

Surfactant: See Wetting Agent.

Systemic Kill: Usually associated with herbicide formulas made effective by the absorption through leaves or roots and translocation of the material throughout the plant for an overall "system" kill.

Top Kill: Describes the effect of herbicide formulas on the part of the plant above the ground surface.

Translocation: The internal transfer of materials (food, water, poisons) from one part of a plant to another. This concept is important especially if complete kill (including roots) is desired by using a contact herbicide.

Triazines: When you see the word "atrazine" or "simazine" in the ingredients statement, you will know you are dealing with a triazine. These z-i-n-e compounds are soil sterilants. The primary disadvantage of these materials is that they do not kill as many plant species as do some of the other products. They are considered to have a limited spectrum of activity.

Turf: A number of different types of grasses typically used for lawn and grounds cover and characterized by tightly knit growth. Bermuda, Fescue, and Zoysia are examples of turf grasses.

Wettable Powder: A physical form of an herbicide that is purchased as a powder, then mixed with water. The wettable powder does not dissolve but rather is dispersed in water. The solution must be agitated frequently.

Wetting Agent: A surface acting agent that allows water to flow better by lowering its surface tension. A small amount of wetting agent added to water allows the soil to absorb water more readily. Wetting agents aid in the coating of vegetation more evenly when an herbicide is applied. Also referred to as surfactant.

Woody Plants: Perennial plants whose stems as well as roots live from season to season. The tissue structure is hard and fibrous.



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HERBICIDES

