Herbicide Guidelines

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Overview Of Herbicides Registered For Use In Saskatoon Orchards		
Herbicide	**Registered Use**	**Timing**
Glyphosate (Round Up)	Non-selective control of annual and perennial weeds	Used prior to planting, or as a directed spray away from crop plants, or as a spot application to individual weeds
Sethoxydim (Poast Ultra)	Annual and perennial grasses	Varies with stage of weed development; should not be applied within 30 days of harvest
Dichlobenil (Casoron 4G)	Germinating broadleaf weeds, grasses and shallow-rooted perennials	Applied to established orchards in late-fall (more than 9 months before harvest)
Linuron (Afolan F; Linuron 480; Lorox DF)	Germinating broadleaf weeds	Pre-emergent; applied in early-spring or late-fall to established plantings
Trifluralin (Bonanza 400; Rival; Treflan EC)	Germinating broadleaf weeds and grasses	Pre-plant; applied three weeks to immediately before transplanting in the spring
Trifluralin/Metribuzin (Treflan EC + Sencor Solupak 75 DF)	Broad spectrum - broadleaf weeds and grasses	Pre-plant; applied as a tank mix from three weeks to immediately before transplanting in the spring to saskatoons in shelterbelts

Caution - The following information is solely meant as a guide. Application of all pesticides must be in accordance with the instructions on the product label as prescribed under the Pest Control Products Act. Always refer to label.

Guidelines To The Use Of Casoron

Manufacturer - United Agri Products.

Trade Names - Casoron 4G.

Formulation - Granular herbicide containing 4% dichlobenil.

Weeds Controlled - Germinating broadleaf weeds, grasses, and shallow-rooted perennials. Weeds controlled include annual bluegrass, bindweed, Canada thistle, chickweed, couchgrass, crabgrass, dandelion, foxtail, groundsel, horsetail, knotweed, kochia, lamb's quarters, mustard, pigweed, purslane, shepherd's purse, smartweed, stinkweed, and wild buckwheat.

Timing Of Application - Casoron 4G is registered for saskatoon orchards established for 1 or more years. Apply before freeze-up in late-fall. Application must not be made within 9 months of harvest.

Application Rate & Guidelines - Casoron 4G in granular form is broadcast before freeze-up in late-fall at a rate of 110-175 kg per hectare. Casoron 4G should not be applied within 9 months of harvest. Apply with a granular applicator or spreader.

Points To Note - Dichlobenil is readily absorbed by leaves and roots. The mode of action of dichlobenil is to inhibit germination by disrupting growing points and root tips. Dichlobenil is volatile and must be applied during periods when air temperatures will not exceed 10ºC. Dichlobenil must not be applied to light, sandy soil. This herbicide is relatively expensive but effective and may provide 2 to 3 years of control.

Calculating Amount Of Herbicide Required - Recommended rates are volume or weight per hectare, that is, the entire orchard area. Most herbicides are applied in bands alongside the rows. Consequently, the area where herbicide is to be applied must be calculated as follows:

1) Multiply width of application band (including both sides of row) by row length (both measured in metres), then multiply this by the number or rows.

2) Divide this result by 10,000 (which is the number of sq m per ha).

3) The result is the total application area in hectares.

4) Multiply this figure by the application rate to obtain the total amount of Casoron required.

Guidelines To The Use Of Glyphosate

Manufacturer - Monsanto.

Trade Names - Roundup.

Formulation - Glyphosate, 356 g acid equivalent/L present as an isopropylamine salt.

Registered Use - Control of annual and perennial weeds. Weeds controlled include alfalfa, barnyard grass, blue grass, brome grass, Canada thistle, cattail crabgrass, cotton top, curled dock, dandelion, downy brome, fall panicum, field bindweed, foxtail (giant, green & - yellow), foxtail barley, hemp dogbane, hoary cress, knotweed (Japanese), milkweed (common), persian darnel, Pennsylvania smartweed, prickly lettuce, poison ivy, purple loosestrife, quackgrass, ragweed, redroot pigweed, Russian thistle, shepherd's purse, smooth pigweed, sowthistle (annual & perennial), stinkweed, toad flax, velvet leaf, volunteer

barley, volunteer canola, volunteer corn, volunteer flax, volunteer wheat, wild mustard, wild oats, wild tomato, wormwood and yellow nutsedge.

Timing Of Application - Varies depending on weed type and stage of weed development. It is recommended that a preplant application of glyphosate be used to control annual weeds.

Application Rate & Guidelines - Application of glyphosate is restricted to directed sprays; avoid contact with green shoots and leaves of crop plant. Rates vary with target weed. Users must refer to label for specific rates.

Points To Note - Open wounds and fresh pruning cuts facilitate absorption of glyphosate. Extreme care should be taken to avoid contact of spray with such regions. The Roundup label makes no specific reference to the use of this product in saskatoon orchards, however according to Monsanto, glyphosate may be used with a saskatoon orchard when applied as a directed spray away form saskatoon plants. Other glyphosate products are available, however the manufacturers of these products should be contacted prior to use.

Guidelines To The Use Of Linuron

Manufacturers - AgrEvo Canada Inc. (Afolan F); Dupont Canada Inc. (Lorox DF); United Agri Products (Linuron 480).

Trade Names - Trade names for linuron include Afolan F, Linuron 480, and Lorox DF.

Formulation - Afolan F - 480 g/L linuron as a liquid; Linuron 480 - 480 g/L linuron as a liquid; Lorox DF - 50% linuron as a dry flowable solid.

Weeds Controlled - Germinating broadleaf weeds: annual sowthistle, barnyard grass (suppresses), chickweed, crabgrass, green foxtail (suppresses), knotweed, lamb's quarters, purslane, ragweed, redroot pigweed, shepherd's purse, smartweed, stinkweed, and wild buckwheat.

Timing Of Application - Linuron is applied as a pre-emergent herbicide in early-spring or late-fall when saskatoons are dormant. It should be applied only to established plantings at least 1 year old. Linuron should not be applied more than once per season, nor within 50 days of harvest.

Application Rate & Guidelines - Afolan F: 4.2 to 6.3 L/ha in 200 to 400 L water/ha; Linuron 480: 4.2 to 6.3 L/ha in 225 to 326 L water/ha; use lower rate for coarse-textured soil with less than 2% organic matter; Lorox DF - 4 to 6 kg/ha in 225 to 325 L water/ha; use lower rate for coarse-textured soil with less than 2% organic matter. Apply as a directed, basal spray to uniformly cover the soil surface and emerged weeds without contacting the crop foliage. Apply before weeds reach 10 cm in height. Rainfall or sprinkler irrigation is necessary within 10 days of application to incorporate linuron into the germination zone of the soil. Once linuron has been applied, the soil should not be cultivated because this will disrupt the action of the herbicide.

Points To Note - Linuron is absorbed by plant roots and foliage; it acts to disrupt

photosynthesis. This herbicide can slightly burn and discolor lower leaves if contacted by the herbicide, but linuron does not appear to affect the plant in any other way. Weed control is best when temperatures are moderate, soil moisture is adequate, and relative humidity is high. Established perennials are not controlled.

Guidelines To The Use Of Sethoxydim

Manufacturer - BASF.

Trade Names - Poast Ultra.

Formulation - 450 g/L sethoxydim.

Weeds Controlled - Annual and perennial grasses including barnyard grass, crabgrass, fall panicum, foxtail (green and yellow), persian darnel, proso millet, volunteer corn, volunteer barley, volunteer wheat, witchgrass, wild oats.

Timing Of Application - Most annual grasses are controlled if Poast Ultra is applied between the 1 and 6 leaf stages. Poast Ultra is most effective on quackgrass when applied between the 1 and 3 leaf stages.

Application Rate & Guidelines - Rates per hectare range from 4.7 - 1.1 litres of concentrate in 100 - 200 litres of water. Users should add Merge® adjuvant at the rate of 1% of the water volume. Poast Ultra may be applied around non-bearing saskatoons at any time but must not be applied within 30 days of harvest in fruit-producing shrubs.

Points To Note - Risk of damage to crop plants is minimal since saskatoons are tolerant of this herbicide. For best coverage, use an 80º to 110º flat fan nozzle, angled forward at 45º. According to the Poast Ultra label, quackgrass growth can be suppressed by applying 0.47 L/ha of concentrate at the 2 - 5 leaf stage and controlled using 1.1 L/ha concentrate at the 1 - 3 leaf stage.

Guidelines To The Use Of Trifluralin

Manufacturers - AgrEvo - Rival 500 EC; Dow AgroSciences Canada Inc. - Treflan EC; United Agri Products - Bonanza 400.

Trade Names - Bonanza 400, Rival, Rival 500 EC, Treflan EC.

Formulation - Bonanza 400 - 400 g/L trifluralin as an emulsifiable concentrate; Rival 500 EC - 500 g/L trifluralin as an emulsifiable concentrate; Treflan EC - 480 g/L trifluralin as an emulsifiable concentrate.

Weeds Controlled - Germinating broadleaf weeds and grasses: barnyard grass, carpetweed, chickweed, crabgrass, green foxtail, knotweed, lamb’s quarters, pigweed, purslane, wild oats, yellow foxtail.

Timing Of Application - Trifluralin products can be applied from three weeks to immediately before transplanting in the spring.

Application Rate & Guidelines - Application rates vary with soil texture and organic matter content. Bonanza 400: 2 L/ha for light soils, 2.75 L/ha for medium to

heavy soils; Treflan EC and Rival 500 EC: rates vary from 1.7 (light soils) to 2.3 L/ha (medium to heavy soils) for soils with 2 to 6% organic matter, and 2.3 L/ha for soils with 6 to 15% organic matter content. A water volume of 100 L/ha is required. The higher application rates are used on heavier soils.

Points To Note - For effective weed control, trifluralin must be incorporated into the zone where weed seeds germinate (the upper layer of soil). The mode of action of trifluralin is to inhibit seedling development following germination. Trifluralin products must be incorporated into the soil in two directions to a depth of 10 cm. The soil must not be crusted, lumpy or wet. Trifluralin is somewhat volatile and subject to decomposition by sunlight. Members of the mustard family are resistant to trifluralin.

Guidelines To The Use Of Trifluralin/Metribuzin Tank Mix

Manufacturers - Dow AgroSciences Canada Inc. - Treflan EC; Bayer - Sencor Solupak 75 DF.

Trade Names - Treflan EC; Sencor Solupak 75 DF.

Formulation - Treflan EC - 480 g/L trifluralin; Sencor 75 DF - 75% metribuzin (water-dispersible granular herbicide).

Weeds Controlled - Broad spectrum; barnyard grass, carpetweed, chickweed, cow cockle, crabgrass, green foxtail, green smartweed, hemp nettle, knotweed, lady's thumb, lamb's quarters, Persian darnel, pigweed, purslane, Russian thistle, shepherd's purse, stinkweed, wild buckwheat, wild mustard, wild oats, witch grass.

Timing Of Application - Pre-plant. Treflan EC/Sencor 95 DF Tank Mix can be applied from three weeks to immediately before transplanting in the spring.

Application Rate & Guidelines - Mix 5.2 L of Treflan EC and 400 g Sencor 95 DF in 100 - 225 litres of water/ha. Incorporation is the same as for trifluralin products, except this mix should be incorporated to a depth of 7 cm.

Points To Note - It is important to follow the correct sequence when mixing Sencor with Treflan (refer to pesticide label). This mix is not for use on soils with less than 5% organic matter.

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