New Herbicides for Weed Control in Vineyards
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Weed management and control is part of an overall vineyard management system in and is essential for the establishment of newly planted vines. Weeds have negative effects on the crop by competing for light, water, and nutrients. They can reduce the quality and/or yield as well as cause problem during crop harvest and serve as hosts to insects and diseases. A successful weed management and control program can improve the growth and yield of established vines. There are many tools, including chemical and non-chemical, available to the growers to achieve successful weed control in their vineyards. Therefore weed management and control is of outmost importance for grape growers. There are many important factors to consider in chemical weed control in vineyards. Probably one of the most factors to consider is site preparation which should start at least 2 years before planting. Knowing the crop, weed, and herbicide history before planting can be very useful for making the right decisions for site preparation. The field must be tilled to break any dormancy in rhizomes and/or rootstocks. Then herbicides such as glyphosate and stinger can be used to control the regrowth of weeds. Inter-row cover crop such as tall fescue and in-row planting of perennial rye grass is highly recommended. The right herbicide must be chosen and applied at the appropriate time using the correct rate. Eradicating perennial weeds should also start 12 to 18 months before planting. PRE and POST herbicides for broad spectrum weed control after transplanting can also be used to prevent re-infestation. Keep in mind that for a successful weed management and control program you must incorporate other herbicides in year 2 and beyond and also develop and implement a comprehensive cleanup plan. Here we summarize some recent registrations that will be part of a complete herbicide program for vineyards. None of the herbicides mentioned below will control all weeds, and must be part of a broader program.

Zeus XC:
Zeus XC is a selective soil-applied herbicide for the control of susceptible broadleaf (i.e. redroot pigweed, common purslane, common lambsquarters), grass (i.e. green and yellow foxtail, large crabgrass) and sedge (i.e. purple and yellow nutsedge) weeds. It should be applied as a uniform broadcast soil application to vineyard floors or as a uniform band application directed to the base of the trunk in vines to provide preemergence control of weeds listed in the label. For broadcast applications, a single application of Zeus XC should be made at 8-12 fl oz per acre (0.25-0.375 lb ai/A). When applied as a banded treatment (50% band or less), refer to the formula in the label for rate and volume. Zeus XC may be applied twice per year. Do not apply more than 12 fl oz product per acre (0.375 lb ai/A) on a broadcast application basis per year. Zeus XC should only be applied to crops that have been established for 3 growing seasons and are in good health and vigor. For best control, Zeus XC should be applied before weeds emerge. If weeds are present, tank mix with a postemergence herbicide to eliminate emerged weeds. Avoid direct or indirect spray contact with crop foliage and fruit. Any contact of the
spray solution on the green bark of trunks of young vines must be avoided by wrapping the trunk with a nonporous wrap, grow tubes, or wax containers.

**Zeus Prime XC:**
This is a selective herbicide that provides postemergence contact and soil residual weed control. It may be applied as a burndown and or preemergence application before or after weed emergence for control of susceptible broadleaf weeds. Zeus Prime XC is a 3.5 pound per gallon containing the active ingredients carfentrazone-ethyl and sulfentrazone. Zeus Prime XC should be applied as a uniform broadcast soil application to vineyard floors or as a uniform band application directed to the base of the vines (avoid contact with green foliage) to provide preemergence control of weeds listed in the label. For broadcast applications, a single application of Zeus Prime XC should be made at 7.7 to 15.2 fl oz per acre (0.21 to 0.41 lb ai/A). Do not apply more than 15.2 fluid ounces (0.41 lb ai) per acre per twelve month period. Zeus Prime XC should only be applied to crops that have been established for two growing seasons and are in good health and vigor. For improved weed management, Zeus Prime XC can be applied in a tank mixture with other preemergence and postemergence herbicides.

**Alion:**
This is a preemergence herbicide for control of annual grasses and broadleaf weeds in grapes. This herbicide may be applied to the soil as a uniform broadcast or band application for the prevention of new weed emergence. Alion is 1.67 lbs per gallon containing the active ingredient indaziflam. A single application of Alion should be made at 3.5 to 5 fl oz per acre (0.045 to 0.065 lb ai/A). Do not apply more than a total of 5.0 fl oz product/A (0.065 lbs ai/A) per year or in a 12 month period. Only use this herbicide in established vineyards at least five years after the vines have been planted and exhibiting normal growth and good vigor. Ensure that the grapes have been planted at least 12 inches deep or that there is 12 inches of soil barrier (berm) between the soil surface and the major portion of the root system prior to using Alion Herbicide or injury may occur.

**Venue:**
This is a nonselective contact herbicide for vine crops. Venue is 0.17 lbs per gallon containing the active ingredient pyraflufen ethyl. For broadleaf weed control when applied at postharvest, dormant, or prebloom stage of the crop application should be made at 1.0 to 4.0 fl oz per acre and no more than 3 applications per season. When applied in-season for broadleaf weed control, it should be applied at the same rate but no more than 2 applications per season. Keep in mind that a minimum of 30 days between applications is required. Avoid contact with green, uncallused bark of young vines, established less than one year, unless protected from spray contact by nonporous wraps, grow tubes, or waxed containers.

**Snapshot:**
This is a selective preemergence herbicide for control of certain broadleaf weeds and annual grasses in non-bearing vineyards. Snapshot 2.5 TG is 1.25 lb per 50 lb bag containing the active ingredient trifluralin. Applications should be made at 100 to 200 lb per acre. This herbicide must be applied using a drop or rotary-type spreader designed to apply granular herbicides. Calibrate application equipment prior to use according to manufacturer’s directions.