



Current Report

Oklahoma Cooperative Extension Service • Division of Agricultural Sciences and Natural Resources
Oklahoma State University

Suggested Herbicides for Roadside Weed Problems

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Right-of-way vegetation management is a very important part of the overall roadside maintenance program. The vegetation adjacent to the road surface is a functional part of the road. In addition to mechanical methods, herbicides are used for managing right-of-way vegetation. When used correctly, herbicides can selectively control undesirable weeds and leave nearby beneficial plants unharmed.

This current report summarizes herbicide(s), rate(s) of application per acre, water carrier rates, timing of application, and important comments for programs intended to control johnsongrass, annual grasses and broadleaves, silver bluestem, and brush along roadside right-of-ways in Oklahoma.

Please remember these are only suggestions and the following information is for preliminary planning. Be sure to follow the manufacturer's directions, not withstanding the information contained in this current report. Read and follow all label directions.

Johnsongrass (Postemergence)

Herbicide: Roundup® + Oust®.
Rate: 1 to 1.5 pints product + 1 to 2 ounce(s) product per acre.
Carrier: 20 to 40 gallons of water per acre.
Timing: May (see comments).
Comments:

1. Spray equipment must be properly calibrated to insure desirable johnsongrass control and minimal bermudagrass injury.
2. Application should be made after bermudagrass has broken dormancy and is green and actively growing.
3. Add Roundup® to the tank mixture first, and then add the Oust®.

4. Applications should not be made to areas which have little or no bermudagrass to release.
5. Applications should not be made on newly sprigged or seeded areas.
6. It is important to maintain the proper ground speed to prevent over application. Using the stock speedometer on most spray trucks is not adequate. Use of some type of digital speed monitoring device will allow the applicator to maintain the correct ground speed.
7. Spray pattern width should be continually monitored throughout the application. Spray pattern bending because of high ground speeds (13 mph or more) or wind will quickly shorten spray widths and cause over application. To reduce pattern distortion carrier rates may be increased, thus reducing the ground speed of the spray rig. Also be aware of wind speeds and direction.
8. Maintain an accurate spray record sheet by filling it out completely for each tank load of herbicide that is applied.
9. Regardless of right-of-way width, always leave an untreated buffer zone. If spray equipment cannot be adjusted to leave a buffer zone on a narrow right-of-way, then the area should be treated using a more appropriate method.
10. Do not apply if rainfall will occur within six hours. Rainfall will wash the Roundup® from the plants and reduce the level of control.

Herbicide: MSMA (6 lbs. a.i./gal) or DSMA (3.6 lbs. a.i./gal).
Rate: 1/2 or 1 gallon per acre.
Carrier: 20 to 40 gallons of water per acre.
Timing: April through October.

Comments:

1. Best results are obtained if the first application is made with MSMA when air temperatures are cooler (70 to 80°F).
2. Two or three applications per year will be required to control johnsongrass. Treatments should start when johnsongrass reaches 8 to 12 inches in height and retreatments should be made when regrowth is 8 to 12 inches tall (retreatments usually will be made on 3 to 4 week intervals).
3. Maintain an accurate spray record sheet by filling it out completely for each tank load of herbicide mixture that is applied.
4. Never apply MSMA or DSMA to standing water, creeks, rivers, or ponds. Be sure to shut off spray rigs when passing over bridges.
5. Regardless of right-of-way width, always leave an untreated buffer zone.

Annual Grass and Broadleaf Weeds (Preemergence)

- Herbicide:** Aatrex 4L® or Aatrex Nine-O®.
- Rate:** 2 qts. product per acre or 2.2 lbs. product per acre.
- Carrier:** 20 to 40 gallons of water per acre.
- Timing:** November 15 through February (see comments).

Comments:

1. For use by Oklahoma Department of Transportation and Oklahoma Turnpike Authority personnel certified in Pesticide Applicator Category 6 (Right-of-Way) only.
2. Apply only once per year.
3. Early applications, November 15 through December, may be used if the area will be treated the following May with Roundup® + Oust®. If the area will not be treated with Roundup® + Oust® then applications should be made in January or early February.
4. Application should be made on dormant bermudagrass.
5. Applications should never be made to frozen soils.
6. Applications should not be made on newly sprigged or seeded areas. These areas need at least one full growing season to produce mature plants that will be tolerant to a herbicide application.
7. Regardless of right-of-way width, always leave an untreated buffer zone. This product should not be applied within 66 feet of the points where field

surface water runoff enters perennial or intermittent streams or rivers or within 200 feet around natural or impounded lakes or reservoirs.

8. Maintain an accurate spray record sheet by filling it out completely for each tank load of herbicide that is applied.
9. A 24-C, Special Local Needs label must be in the possession of the applicator during the application.

- Herbicide:** Karmex 80DF®.
- Rate:** 3 pounds product per acre.
- Carrier:** 25 to 40 gallons of water per acre.
- Timing:** November 15 through February (see comments).

Comments:

1. Karmex 80DF® is used instead of Aatrex 4L® or Aatrex Nine-O® only when the area to be treated is infested with Kochia.
2. Apply only once per year.
3. Early applications, November 15 through December, may be used if the area will be treated the following May with Roundup® + Oust®. If the area will not be treated with Roundup® + Oust® then applications should be made in January or early February.
4. Application should be made on dormant bermudagrass.
5. Applications should never be made to frozen soils.
6. Regardless of right-of-way width, always leave an untreated buffer zone.
7. Maintain an accurate spray record sheet by filling it out completely for each tank load of herbicide mixture that is applied.
8. A 24-C, Special Local Needs label must be in the possession of the applicator during the application.

Annual Grass and Broadleaf Weeds (Postemergence)

- Herbicide:** Campaign® (Roundup + 2, 4-D).
- Rate:** 3-4 pints product per acre.
- Carrier:** 30 gallons of water per acre.
- Timing:** February 15 through April 15.

Comments:

1. Apply to dormant bermudagrass. Applications made to bermudagrass which is beginning to green-up will result in temporary discoloration and slight green-up delay.

2. Targeted weeds must be actively growing.
3. This product is for the control of emerged weeds only, there is no preemergent control of weeds with this treatment.
4. Precautions should be taken to avoid drift to susceptible non-target plants. Areas with hormone-type herbicide restrictions may require earlier treatment dates. Consult your copy of the Oklahoma Pesticide Applicators Law for restricted areas and dates.
5. This product may be used as an alternative to atrazine near surface water areas sensitive to pesticides.

Broadleaf Weeds Including Kochia (Postemergence)

Herbicide: Banvel®.
Rate: Refer to Label.
Carrier: 25 to 40 gallons of water per acre.
Timing: April through July.

Comments:

1. One application per year should control most broadleaf weeds.
2. Refer to the herbicide label for susceptible species.
3. Late April or May treatments should be used to control Kochia.
4. Banvel will damage broadleaf crops (i.e., alfalfa, soybeans, peanuts, cotton, etc.), so untreated buffer zones are very important around these sensitive areas. Do not spray when drift is likely.
5. Maintain an accurate spray record sheet by filling it out completely for each tank load of herbicide mixture that is applied.
6. This product may not be applied to hormone-type restricted areas during certain times of the year. Consult your copy of the Oklahoma Pesticide Applicators Law for restricted areas and dates.

Musk Thistle (Postemergence)

Herbicide: Transline®.
Rate: 1/3 to 2/3 pints product per acre.
Carrier: 100 gallons of water per acre with a handgun or 25 to 50 gallons of water per acre as a broadcast application.
Timing: March through April.

Comments:

1. Applications should be made to actively growing thistles prior to bolting (flowering).

2. Extreme growing conditions such as drought or near freezing temperatures prior to, at, and following time of application may reduce thistle control.
3. A non-ionic surfactant should be used in spray mixtures at 1 to 2 quarts (0.25 to 0.5% V/V) per 100 gallons of spray mixture.
4. Do not contaminate irrigation ditches or water used for irrigation or domestic purposes.
5. Precautions should be taken to avoid drift to susceptible non-target plants. Areas with hormone-type herbicide restrictions may require earlier treatment dates. Consult your copy of the Oklahoma Pesticide Applicators Law for restricted areas and dates.

Silver Bluestem (Postemergence)

Herbicide: Roundup®.
Rate: 1.5 - 2 pints product per acre.
Carrier: 20 to 40 gallons of water per acre.
Timing: May (prior to seedhead formation).

Comments:

1. Sprayer equipment must be properly calibrated to insure desirable silver bluestem control and minimize bermudagrass injury.
2. Roundup®, alone, is used in areas where there is little or no previous history of johnsongrass. In areas where there is a history of johnsongrass, Oust® should be added to the Roundup® treatment. If Oust® is not added to the treatment in areas where there are johnsongrass seeds in the soil, the seeds could germinate and create an even bigger problem than the silver bluestem that was controlled. This is because Roundup® has no soil or pre-emergent activity.
3. Do not apply Roundup® if rainfall will occur within six hours. Rainfall will wash the Roundup® off the plants and reduce the level of control.
4. Maintain an accurate spray record sheet by filling it out completely for each tank load of herbicide mixture that is applied.
5. Regardless of right-of-way width always leave an untreated buffer zone.

Herbicide: Roundup® + Oust®.
Rate: 1.5 pints product + 2 ounces product per acre, respectively
Carrier: 20 to 40 gallons of water per acre.
Timing: May (prior to seedhead formation).

Comments:

1. Roundup® + Oust® should be used in areas where there is a past history of johnsongrass problems. If the history of an area is not known, then it is best to add the Oust® to the Roundup® treatment. The Oust® is soil active and will help prevent johnsongrass seeds from emerging.
2. Spray equipment must be properly calibrated to insure desirable silver bluestem control and minimal bermudagrass injury.
3. Application should be made after bermudagrass has broken dormancy and is green and actively growing.
4. Add Roundup® to the tank mixture first, then add the Oust®.
5. Applications should not be made to areas which have little or no bermudagrass to release.
6. Applications should not be made on newly sprigged or seeded areas.
7. It is important to maintain the proper ground speed to prevent over application. Using the stock speedometer on most spray trucks is not adequate. Use of some type of digital speed monitoring device will allow the applicator to maintain the correct ground speed without having to guess.
8. Spray pattern width should be continually monitored throughout the application. Spray pattern bending because of high ground speeds (13 mph or more) or wind will quickly shorten spray widths and cause over application. To reduce pattern distortion carrier rates may be increased, thus reducing the ground speed of the spray rig. Also be aware of wind speeds and direction.
9. Maintain an accurate spray record sheet by filling it out completely for each tank load of herbicide that is applied.
10. Regardless of right-of-way width, always leave an untreated buffer zone. If spray equipment cannot be adjusted to leave a buffer zone on a narrow right-of-way, then the area should be treated using a more appropriate method.
11. Do not apply if rainfall will occur within six hours. Rainfall will wash the Roundup® from the plants and reduce the level of control.

Brush

- Herbicide:** Tordon K® + Garlon 4®.
- Rate:** Refer to Label.
- Carrier:** 100 gallons of water per acre with a handgun or 50 gallons of water per acre as a broadcast application.

Timing: June (see comments).

Comments:

1. Refer to herbicide labels for susceptible target species.
2. Handgun applications should be made on a spray-to-wet basis (Refer to Roadside Vegetation Management Manual, Circular E-885).
3. Most brush species are susceptible to this treatment, extreme caution should be used to prevent off-target movement of fine spray particles.
4. Always use a quality drift control additive to reduce the number of fine spray particles. This will help reduce the hazard of off-target drift.
5. Follow label rates for the specific brush species you are targeting.
6. Maintain an accurate spray record sheet by filling it out completely for each tank of herbicide mixture that is applied.
7. Use extreme caution when treating near any ground water. Leave a buffer zone around all ground water sources.
8. These products may not be applied to hormone-type restricted areas during certain times of the year. Consult your copy of the Oklahoma Pesticide Applicators Law for restricted areas and dates.

Herbicide: Krenite S® + Crop Oil.

Rate: 3 gal. product + 1.5 qts. product per acre, respectively.

Carrier: 100 gallons of water per acre with a handgun or 50 gallons of water per acre as a broadcast application.

Timing: August through October (see comments).

Comments:

1. Refer to herbicide label for susceptible species.
2. Handgun applications should be made on a spray-to-wet basis (Refer to the Roadside Vegetation Management Manual, Circular E-885).
3. Thorough coverage of the entire target plant is necessary for complete control of susceptible species.
4. Do not Apply Krenite S® if rainfall will occur anytime during the day of application. The Krenite S® will be washed off the leaves and reduce the level of control.
5. Little or no foliage brownout will occur after treatment. Leaves will drop off the tree in a normal

fashion and the following spring the tree will not produce any new leaves.

6. Applications made in October should be made before fall leaf discoloration.
7. Always use a quality drift control additive to reduce the hazard of off-target spray particle drift.

Herbicide: Roundup®.
Rate: 1.5 gallons product per acre.
Carrier: 100 gallons of water per acre with a handgun only!
Timing: August through October.

Comments:

1. Do not broadcast this treatment using an off-center nozzle equipped spray rig.
2. This treatment should be applied as a spot treatment using a hand-gun applicator only.
3. Apply the herbicide mixture on a spray-to-wet basis (refer to the Roadside Vegetation Management Manual, Circular E-885).
4. At this rate of application the grass understory will be killed.
5. Do not apply Roundup® if rainfall will occur within six hours. Rainfall will wash the Roundup® off the plant and reduce the level of control.
6. Refer to the herbicide label for susceptible target species.
7. Always use an accurate quality drift control additive to reduce the hazard of off-target spray drift.
8. Maintain an accurate spray record sheet by filling it out completely for each tank of herbicide mixture that is applied.

Bermudagrass Encroachment (Postemergence)

Herbicide: Arsenal®.
Rate: 4 pints product per acre.
Carrier: 40 gallons of water per acre.
Timing: May through July.

Comments:

1. Application is to be made to actively growing bermudagrass.
2. In areas which have not been treated with Roundup® + Oust®, a herbicide such as Oust® (2 ounces of product per acre) or Karmex® (3 pounds product per acre) may be needed to control weeds which germinate from seed.
3. In areas which have been treated with Roundup® + Oust® for johnsongrass or silver bluestem control, Arsenal® may be applied alone.
4. Maintain an accurate spray record sheet by filling it out completely for each tank of herbicide mixture that is applied.
5. Do not apply directly to water or wetlands.
6. Do not treat irrigation ditches.
7. Do not apply, drain or flush equipment on or near desirable trees or other plants, or onto areas into which their roots may extend, or into locations where the chemical may be washed or moved into contact with their roots.
8. Prevent drift to desirable plants.

The pesticide information presented in this publication was current with federal and state regulations at the time of printing and is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Cooperative Extension Service is implied. The user is responsible for determining that the intended use is consistent with the label of the product being used. Use pesticides safely. Read and follow all label directions.

(Aatrex 4L® - atrazine, Ciba-Geigy Corporation)
(Aatrex Nine-O® - atrazine, Ciba-Geigy Corporation)
(Arsenal® - imazapyr, American Cyanamid Company)
(Banvel® - dicamba, Sandoz Crop Protection Corporation)
(Campaign® - glyphosate + 2, 4-D, Monsanto Agricultural Company)
(Garlon 4® - triclopyr, DowElanco)
(Karmex 80DF® - diuron, E.I. du Pont de Nemours & Co., Inc.)
(Krenite S® - fosamine, E.I. du Pont de Nemours & Co., Inc.)
(Oust® - sulfometuron, E.I. du Pont de Nemours & Co., Inc.)
(Roundup® - glyphosate, Monsanto Agricultural Company)
(Tordon K® - picloram, DowElanco)
(Transline® - clopyralid, DowElanco)

The Oklahoma Cooperative Extension Service

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- It provides practical, problem-oriented education for people of all ages. It is designated to take the knowledge of the university to those persons who do not or cannot participate in the formal classroom instruction of the university.
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