



Preparing Non-Native Cool-Season Grasses for Conversion to
Wildlife-Friendly Vegetation
Conservation Practice Information Sheet (IS-MO645C)

The key to establishing native grasses and wildflowers or wildlife-friendly cool-season grasses and legumes is to prepare a seedbed free of plant competition. Here are three recommended methods of eradicating undesirable cool-season grasses from a field that will be converted to native warm-season grasses and wildflowers or wildlife-friendly cool-season grasses and legumes. Certain conservation programs may restrict some of the recommended activities described in this information sheet. Do not begin any work without prior approval.



CONVERTING COOL-SEASON GRASSES:

Option 1. A fall herbicide application followed with another application in the spring to eradicate undesirable cool-season grasses before planting is usually sufficient for simple conversions. This method is the most popular way of establishing native warm-season grasses. Avoid using this technique if planting wildlife-friendly cool-season grasses and legumes.

1. If possible, in early May burn, graze, hay or mow the field to reduce the amount of undesirable cool-season grass seed produced. Burning in early May will also set back the cool-season grasses that year and possibly release native plants that have been suppressed.
2. In August burn, graze, hay or mow the field again before the fall herbicide application to improve herbicide effectiveness.
3. Spray a broad spectrum herbicide (for example - glyphosate, glyphosate + imazapic, sulfosulfuron, or other equivalent products) at the labeled rate in September through November when the cool-season grasses are 6 to 10 inches tall and actively growing. Add a broadleaf herbicide (2,4-D ester) at the labeled rate if clover or undesirable broadleaf plants (perennials) are a problem.
4. Burn the field in late winter to remove the duff if more than 75% of the ground is covered with dead vegetation. If steps 1 & 2 were followed, there is a good chance burning will not be necessary.
5. Spray the following spring - April or May with a broad-spectrum herbicide (for example - glyphosate, glyphosate + imazapic, sulfosulfuron or other equivalent products) at the labeled rate to eradicate any remaining undesirable vegetation. Vegetation should be at least 6 inches tall and actively growing.
6. Seed the field during the spring seeding dates.

NOTE:

- Make sure to eradicate undesirable vegetation underneath trees and shrubs, and along fencerows, roads and trails. Avoid leaving cool-season grass field borders for fire lines, as the grass will eventually spread into the field.
- Avoid disking if no-till seeding equipment will be used.
- **Read and follow all herbicide and adjuvant label directions.**

Option 2. The following site preparation method has worked well in weedy old fields or for prairie restoration projects. **This method should only be used on fields with no existing desirable vegetation.** This method also works well when reestablishing wildlife friendly cool-season grasses and legumes in undesirable cool-season grass fields since it allows for fall seedings, and with three herbicide treatments, reduces the chances of



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undesirable grasses invading the field later on. This method may not work well on highly erosive fields, unless a cover crop is seeded.

1. In March or April burn, graze, hay or mow the field to remove the residual vegetation.
2. In early May, spray the field with a broad-spectrum herbicide (for example - glyphosate, glyphosate + imazapic, sulfosulfuron or other equivalent products) plus a broadleaf herbicide (2,4-D ester) at the labeled rates. This treatment will eradicate most of the cool-season grasses and broadleaf plants, like white clover, sweet clover, tall goldenrod and horse nettle. These and other broadleaf plants can be very aggressive in new seedings. Omit the broadleaf herbicide if broadleaf plants are not a problem.
3. In late June or July, spray the field with a broad-spectrum herbicide (for example - glyphosate, glyphosate + imazapic, sulfosulfuron or other equivalent products) at the labeled rate to kill any remaining annual grasses. A broadleaf herbicide (2,4-D ester) can also be added if undesirable broadleaf plants are a problem.
4. A third herbicide application should occur when seeding the field using one of the following techniques:
 - A. If a dormant seeding is planned, spray the field with a broad spectrum herbicide (for example - glyphosate, glyphosate + imazapic, sulfosulfuron or other equivalent products) at the labeled rate (if needed) to control winter annuals and any remaining cool-season grasses in late October through November while plants are still actively growing. In December or early January, seed the field with native grasses and forbs. A dormant seeding is the preferred method for prairie and savanna recreation projects. The third application can also be made in early spring (March). Even if a dormant seeding was completed, the herbicide can be applied in March without injuring the native seeds. The herbicide application should be sprayed on a warm, sunny day in March and must be completed before the native seeds start to germinate – **complete before April 1st**.
 - B. If planting a wildlife-friendly cool-season grass and legume mix in the fall, spray the field in September or early October with a broad spectrum herbicide if broadleaf weeds or undesirable grasses are growing (for example - glyphosate, sulfosulfuron or other equivalent products) at the labeled rate. Seed the field after spraying.
 - C. If planting native warm-season grasses, legumes and forbs in the spring, delay the final herbicide application until April or May before seeding. Spray a broad-spectrum herbicide (for example - glyphosate, glyphosate + imazapic, sulfosulfuron or other equivalent products) at the labeled rate.

NOTE:

- Make sure to eradicate undesirable vegetation underneath trees and shrubs, and along fencerows, roads and trails. Avoid leaving cool-season grass field borders for fire lines (unless mowed or hayed to prevent seed production) as the grass will eventually spread into the field.
- Avoid disking if no-till seeding equipment will be used.
- A glyphosate + imazapic application is most beneficial if only applied in the spring or late winter as the active ingredient does provide pre-emergent weed control. Do not apply a glyphosate + imazapic mixture on sites being converted to wildlife-friendly cool-season grasses.
- **Read and follow all herbicide and adjuvant label directions.**

Option 3. If possible, establish row crops for one or two years. The benefit to cropping a field is the herbicide applications during the cropping season that will eliminate most of the undesirable vegetation. Income from the crop may help offset some of the herbicide cost or lost production during conversion.

1. In March or April burn, graze, hay or mow the field to remove the residual vegetation.
2. Spray the field before planting with a broad-spectrum herbicide (for example - glyphosate, sulfosulfuron or other equivalent products) at the labeled rate.
3. Crop the field for one or two years, doing so will eliminate most of the undesirable vegetation.
4. After the final harvest use one of the following methods:



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- B. If planting a wildlife-friendly cool-season grass and legume mix in the fall, spray the field in September or early October with a broad spectrum herbicide if broadleaf weeds or undesirable grasses are growing (for example - glyphosate, sulfosulfuron or other equivalent products) at the labeled rate. Seed the field after spraying.
- C. If planting native warm-season grasses, legumes and forbs in the spring, delay the final herbicide application until April or May before seeding. Spray a broad-spectrum herbicide (for example - glyphosate, glyphosate + imazapic, sulfosulfuron or other equivalent products) at the labeled rate.

NOTE:

- If possible, avoid disking the field since the crop residue will not affect germinating native grass and forb seedlings. Disking only increases soil erosion and exposes more weed seeds.
- Avoid using imazaquin herbicides on soybeans, which will have a residual affect on native grasses and wildflowers.
- A glyphosate + imazapic application is most beneficial if only applied in the spring or late winter as the active ingredient does provide pre-emergent weed control. Do not apply a glyphosate + imazapic mixture on sites being converted to wildlife-friendly cool-season grasses.
- Make sure to eradicate undesirable vegetation underneath trees and shrubs, and along fencerows, roads and trails. Avoid leaving cool-season grass field borders for fire lines (unless mowed or hayed to prevent seed production) as the grass will eventually spread into the field.
- **Read and follow all herbicide and adjuvant label directions.**

PRIMARY CONSIDERATIONS for CONVERSION:

- Provide habitat for wildlife.
- Develop/restore rare and declining natural communities
- Restore degraded native plant communities

For additional information on converting non-native cool-season grasses to wildlife-friendly vegetation, contact your local USDA Service Center or Missouri Department of Conservation office.

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