

Criteria for Working Lands Buffer Seeding, Establishment, and Maintenance

Seeding & Establishment

- Forage plantings must include two species, including at least one cool season grass specie.
 - Cool season grass specie(s) must be planted at 50% pure stand seeding rate minimum.
 - Cool Season Grasses include: Kentucky bluegrass, Meadow fescue, Orchardgrass, Perennial ryegrass, Smooth bromegrass, Tall fescue, & Timothy
- Soil tests are necessary for any phosphorus fertilizer application at the time of establishment. Applications of nutrients shall be limited to the Ohio Agronomy Guide 15th Ed. recommendations for legume-grass mixtures for establishment. Recent soil test shall be 3 years or less, if fertilization is requested or needed.
- For Forage stands that are more than 35 percent legumes, nitrogen should not be applied. Refer to Ohio Agronomy Guide 15th Edition for recommendations
- Follow recommendations for planting rates, methods and dates obtained from Ohio Agronomy Guide 15th Ed. – Forage Management.
- Seeding rates will be calculated on a pure live seed (PLS) basis.
- Plant seed at a depth appropriate for the seed size or plant material. Seed should assume uniform contact with soil.
- Prepare the site to provide a medium that does not restrict plant emergence.
- Plant when soil moisture is adequate for germination and establishment.
- All seed and planting materials will meet state quality standards.
- Do not plant federal, state, or local noxious species.
- When planting legumes, use pre-inoculated seed or inoculate with the proper viable strain of Rhizobia immediately before planting.
- Select forage species based on the intended use, level of management, realistic yield estimates, maturity stage, and compatibility with other species. Verify plant adaptation to the area prior to planting. Refer to Ohio Agronomy Guide 15th Ed., Table 7-1 – 7-3 for additional guidance on forage species recommendations.

Maintenance

- Applications of phosphorus are not allowed during the maintenance period unless approved by ODA. Applications of nutrients shall be limited to the Ohio Agronomy Guide 15th Ed. recommendations for legume-grass mixtures.
- Residual forage height must be a minimum of 4" height by September 15th each year. Residual forage must be maintained during the non-growing season.
- Refer to Ohio Agronomy Guide 15th Ed. For weed, insect and disease management during maintenance period.

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Seeding Rates

Table 7-8: Suggested Seeding Dates for Forages Grown in Ohio.

Forage species	Northern Ohio	Southern Ohio
Legumes		
Alfalfa	4/1 - 5/1 or 8/1 - 8/15	3/20 - 4/25 or 8/1 - 8/30
Alsike clover ¹	2/1 - 5/1 or 7/20 - 8/10	2/1 - 4/25 or 8/1 - 8/20
Annual lespedeza	NR ²	2/15 - 4/15
Birdsfoot trefoil	4/1 - 5/1	3/20 - 4/25
Red clover ¹	2/1 - 5/1 or 7/20 - 8/10	2/1 - 4/25 or 8/1 - 8/20
White clover ¹	2/1 - 5/1 or 7/20 - 8/10	2/1 - 4/15 or 8/1 - 8/20
Perennial Grasses and Forbs		
Festulolium	3/20 - 5/1 or 8/1 - 8/20	3/5 - 4/20 or 8/1 - 8/30
Kentucky bluegrass	3/20 - 5/1 or 8/1 - 8/30	3/5 - 4/15 or 8/10 - 9/15
Meadow fescue	3/20 - 5/1 or 8/1 - 8/20	3/5 - 4/20 or 8/1 - 8/30
Orchardgrass	3/20 - 5/1 or 8/1 - 8/20	3/5 - 4/20 or 8/1 - 8/30
Perennial ryegrass	3/20 - 5/1 or 8/1 - 8/20	NR ²
Reed canarygrass	3/20 - 5/1 or 8/1 - 8/15	3/5 - 4/20 or 8/1 - 8/25
Smooth bromegrass	3/20 - 5/1 or 8/1 - 8/20	3/5 - 4/20 or 8/1 - 8/30
Tall fescue	3/20 - 5/1 or 8/1 - 8/20	3/5 - 4/20 or 8/1 - 8/30
Timothy	3/20 - 5/1 or 8/1 - 10/5	3/1 - 4/20 or 8/1 - 10/15
Big bluestem	4/20 - 5/15	4/15 - 5/15
Eastern gamagrass	4/20 - 5/15	4/15 - 5/15
Indiangrass	4/20 - 5/15	4/15 - 5/15
Switchgrass	4/20 - 5/15	4/15 - 5/15
Chicory	4/1 - 5/1 or 8/1 - 8/20	3/15 - 4/20 or 8/1 - 8/30

Seeding Dates

Table 7-4: Seeding Rates of Pure Live Seed (PLS) for Forages Grown in Ohio.

Species	Approximate Seeds/lb (x 1000)	Pure Stand Seeding Rate		Proportional Seeding Rates for Mixtures ¹				
		(seeds/ ft ²)	(lb/ac)	3/4	1/2	1/3	1/4	1/8
----- lb/ac -----								
Perennial Legumes								
Alfalfa	227	80	15	12	8	5	4	2
Alsike clover	700	150	9	7	5	3	2	1
Birdsfoot trefoil	375	80	9	7	5	3	2	1
Red clover	275	70	11	8	6	4	3	1.5
White clover	860	100	5	4	3	2	1	0.5
Perennial Grasses and Forbs								
Festulolium	227	130	25	19	12	8	6	3
Kentucky bluegrass	2200	500	10	7	5	3	2	1
Meadow fescue	220	80	16	12	8	5	4	2
Orchardgrass	590	130	10	7	5	3	2	1
Perennial ryegrass	237	130	24	18	12	8	6	3
Reed canarygrass	550	130	10	8	5	3	2.5	1
Smooth bromegrass	137	50	16	12	8	5	4	2
Tall fescue	227	80	15	12	8	5	4	2
Timothy	1230	220	8	6	4	3	2	1
Big bluestem	150	40	12	9	6	4	3	1
Eastern gamagrass	7.4	1.5	9	7	4	3	2	1
Indiangrass	175	50	12	9	6	4	3	1.5
Switchgrass	370	80	9	7	5	3	2	1
Chicory	375	50	6	4	3	2	1.5	1

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Fertilizer Recommendations for Establishment & Maintenance

Table 7-6: Annual Phosphate (P_2O_5) Recommendations for Forage Legume or Legume-Grass Mixtures. Includes Maintenance Plus Four-Year Buildup to the Critical Level Where Needed.

Soil P Test Level ppm (lb/ac)	Yield Potential (ton/ac)		
	4	6	8
	-----lb P_2O_5 per ac-----		
10 (20) ¹	130	160	190
15 (30)	100	135	160
20 (40)	75	110	135
25-40 (50-80) ²	50	85	110
45 (90)	25	45	50
50 (100)	0	0	0

¹ Values in parentheses are pounds per acre.

² Maintenance recommendations are given for this soil test range.

Table 7-7: Annual Potassium (K_2O) Recommendations for Forage Grass Only, Legume Only and Legume-Grass Mixtures. Includes Maintenance and Four-Year Buildup to the Critical Level Where Needed.

Soil Test K Level ppm (lb/ac)	CEC	Yield Potential (ton/ac)		
		4	6	8
		-----lb K_2O per ac-----		
		-----10 meq/100 g-----		
75 (150) ¹		260 ²	300	300
100-130 (200-260) ³		220	300	300
140 (280)		40	60	80
150 (300)		0	0	0
		-----20 meq/100 g-----		
100 (200)		270	300	300
125-155 (250-310) ³		220	300	300
165 (330)		40	60	80
175 (350)		0	0	0
		-----30 meq/100 g-----		
125 (250)		280	300	300
150-180 (300-360) ³		220	300	300
190 (380)		40	60	80
200 (400)		0	0	0

¹ Values in parentheses are pounds per acre.

² Maximum potassium rate recommended is 300 pounds K_2O per acre.

³ Maintenance recommendations are given for this soil test range.

Table 7-9: Examples of Nitrogen Rates Recommended for Perennial Cool-Season Grass Forages.

Crop, Percent Legume	Yield Potential, ton/ac		
	4	6	8
	Annual Application (lb N/ac ¹)		
Tall grass, less than 20% legume	100	140	180
Mixed tall grass-legume, 20 to 35% legume	50	90	130
Mixed tall grass-legume, greater than 35% legume	0	0	0

¹ Make split applications of nitrogen in the early spring and after first harvest. Liquid nitrogen should be applied in early spring or immediately following foliage removal.