



New York Conservation Practice Job Sheet

Forage and Biomass Planting (512)

Client Name:	Date :
USDA/New York State Program Name:	Program Sign-up Number (if applicable):



Forage and Biomass Planting is establishing grass and/or legume forage species for livestock nutrition needs or herbaceous species suitable for biomass production. Other benefits are:

- Improved soil tilth
- A reduction in soil erosion
- Improved water quality
- Reduces soil compaction
- A hay planting interrupts plant pests if incorporated into a Conservation Crop Rotation

1. FORAGE AND BIOMASS SEEDING INFORMATION

- (a) Certified seed will be used. Legumes will be mixed with the proper, viable rhizobium inoculum before planting.
- (b) Selected forage seed mixtures will be tolerant of soil drainage and site conditions and the expected level of management provided by the producer. Selected plant species will meet the desired nutritional needs (quantity and quality) for the kind and class of livestock.
- (c) All seedings will be planted at depths between ¼” and ½”.
- (d) The seeding mixture(s) selected from Tables 1 or 2 shall consist of:

Farm #	Tract #	Field(s)	Soil Drainage	Livestock	Hay or Pasture or Biomass	Seed Mixture # or Species and Rate	Seed No Later Than

2. FERTILIZER REQUIREMENTS

- (a) Is fertilizer required? Yes No
- (i) Soil test(s) results will be available before establishment. Apply all plant nutrients according to soil tests. Legume and legume/grass mixtures do not require nitrogen amendments. Supplemental N will encourage grass development at the expense of legume growth. Pure grass mixtures require N for establishment. All seedings benefit from phosphorous fertilization. This will ensure a strong start and encourage root development. Fertilizer should be applied at time of seeding. Fertilizer shall be applied at a rate of ____ lb/ac of ____ or equivalent.

3. LIME REQUIREMENTS

(a) Is lime required? Yes No

(i) Soil test(s) recommendations should be available 1 yr. before establishment because a low pH will require adequate time for liming materials to react with the soil. Apply lime according to soil test recommendations. If pH is below 5.8, apply lime one year to six months before the seeding date. Lime, if required, will be applied at a rate of _____ ton/ac, (lb /1000 sq. ft) 100% ENV.

(ii) Will lime be incorporated? Yes No

(iii) Soil pH requirements for selected plant materials:

Species to Plant	pH Requirement
Alfalfa or alfalfa/grass mixture	6.6-7.2
Trefoil and grasses	6.5 (for maximum trefoil yield)
Grasses	6.0
Clover and Grass Mixtures	6.3

4. HAY AND PASTURE MIXES

(a) Seed mixtures that are most commonly used for hayland and pastures are included in Tables 1 and 2. They will be seeded no later than the dates shown to ensure successful establishment during the first growing season. Hay seed mixtures, seeding rates and soil drainage conditions are based on the 2010 Cornell Guide for Integrated Field Crop Management. Pasture and seeding mixtures and rates are based on the 2010 "Cornell Guide for Integrated Field Crop Management".

Table 1 Hayland Seed Mixtures

Soil Drainage	Livestock	Seed Mixture	Rate (lb/ac)	Mixture #	Latest Seeding Dates	
					Spring: Seed grasses or grass/legume mixtures as soon as field conditions permit. Finish seeding by May 1. Pure alfalfa seeding may be established up to May 30.	Late Summer: Seed grasses in August. Seed any mixture with alfalfa eight weeks before the first killing frost. Seed mixtures with clover before August 15.
Well drained	Dairy Beef Sheep Horses	Alfalfa	12-15	1	X	X
Well drained	Dairy Beef Sheep Horses	Alfalfa AND timothy	8-12	2	X	X
		OR Bromegrass	4-6	3	X	X
		OR Orchardgrass	5-8	4	X	X
		OR Reed canary grass ¹	4-6	5	X	Do not seed late summer
Well drained to moderately well drained	Dairy Beef Sheep Horses	Alfalfa AND Timothy	12-15	6	X	X
		OR Bromegrass	4-6	7	X	X
Well drained to moderately well drained	Dairy Beef Sheep Horses	Timothy	8	8	X	X
		OR Orchardgrass	10	9	X	X
		OR Reed canary grass	10	10	Seed by late July	Do not seed late summer
Variable drainage with spots in field too wet for alfalfa	Dairy Beef Sheep Horses	Alfalfa AND Birdsfoot trefoil ²	6	11	X	Do not seed late summer
		AND Timothy	4			
		OR Reed canary grass	6	12	X	Do not seed late summer
Poorly drained to well drained soils, short term hay for 1 to 2 years	Dairy Beef Sheep Horses	Red clover ³ AND	6-8	13	X	X
		Timothy	6			

Table Notes:

- ¹ Reed canary grass – Sheep may find this forage unpalatable.
- ² Birdsfoot trefoil – Use upright variety to facilitate haying.
- ³ Red clover – Some tests have indicated that phytoestrogens in red clover can retard ovulation in ewes.

Table 2 Pasture Seed Mixtures

Soil Drainage	Livestock	Seed Mixture	Rate (lb/ac)	Mixture #	Latest Seeding Dates			
					Spring: Seed grasses or grass/legume mixtures as soon as field conditions permit. Finish seeding by May 1.	Late Summer: Seed grasses in August. Seed any mixture with alfalfa eight weeks before the first killing frost. Seed mixtures with clover before August 15.		
Well drained	Dairy Beef Sheep	Alfalfa	10	14	X	X		
		AND Bromegrass	8					
Well drained to moderately well drained	Dairy Beef Sheep	Ladino white clover	2	15	X	X		
		AND Timothy	5					
		OR Bromegrass	11				16	X
		OR Orchardgrass	7				17	X
		OR Kentucky bluegrass	8	18	X	X		
Well drained to moderately well drained	Dairy Beef Sheep	Birdsfoot trefoil	8	19	X	Do not seed late summer		
		AND Timothy	4					
		OR Orchardgrass	3				20	X
		OR Bromegrass	5	21	X	Do not seed late summer		
Well drained to moderately well drained	Dairy Beef Sheep	Smooth bromegrass	6	22	X	X		
		AND Orchardgrass	5					
Well drained to moderately well drained	Dairy Beef Sheep Horses	Festulolium	12	23	X	Do not seed late summer		
		AND Orchardgrass (late maturing)	5					
		AND Ladino white clover	2					
Well drained to moderately well drained	Dairy Beef Sheep Horses	Perennial ryegrass	8	24	X	X		
		AND Ladino white Clover	2					
		AND Red clover	3					
Somewhat poorly drained	Dairy Beef Sheep	Birdsfoot trefoil	8	25	X	Do not seed late summer		
		AND Timothy	4					
Somewhat poorly drained	Dairy Beef Sheep	Ladino white clover	1	26	X	X		
		AND Timothy	4					
		OR Kentucky bluegrass	6				27	X

Soil Drainage	Livestock	Seed Mixture	Rate (lb/ac)	Mixture #	Latest Seeding Dates	
Well drained to somewhat poorly drained	Horses	Ladino white clover	2	28	X	X
		AND Kentucky bluegrass	3			
		AND Timothy	2			
		OR Orchardgrass	2	29	X	X
Well drained to somewhat poorly drained	Horses	Birdsfoot trefoil	8	30	X	Do not seed late summer
		AND Kentucky Bluegrass	4			
		AND Timothy	2			
		OR Orchardgrass	2	31	X	Do not seed late summer

5. SEEDBED PREPARATION

Operation	# Passes	Time of year
Plow or chisel		
Disk		
Harrow		
Field cultivator		
Field aerator		
Cultipacker or roller		
Other (explain)		

- (a) Identified weed problems will be controlled prior to seeding. Weed competition is typically more of a problem for spring rather than late summer seedings. Weeds can be controlled by clipping or herbicide control. Herbicide selection must be made by a private Certified Crop Advisor or qualified Extension Specialist with appropriate state pesticide applicator certification. Application shall be in accordance with the manufacturer's label.
- (b) Avoid seedbed preparation when the soil moisture content is too high to prepare a satisfactory seedbed or would cause excessive soil compaction. A firm seedbed is essential to obtaining a successful emergence. Germination depends on good seed to soil contact that will allow uptake of moisture and nutrients.

6. SEEDING METHOD

Conventional drill	<input type="checkbox"/>	No-till drill	<input type="checkbox"/>
Planting with a conventional drill followed by roller or cultipacker	<input type="checkbox"/>	Cultipacker seeder	<input type="checkbox"/>
Other (explain)			

7. INTERSEEDING OF HAY OR PASTURE SPECIES

- (a) Will the seed mixture be interseeded? Yes No
- (b) If soil erosion is a resource concern, interseeding into a small grain nurse crop such as winter wheat or spring oats will reduce erosion impacts on steeper slopes.

8. OPERATION AND MAINTENANCE REQUIREMENTS

- (a) Early seeded legumes, for hay, and legumes with grasses can be harvested the seeding year. Cornell Cooperative Extension recommends that the first year harvest begin 10-12 weeks after seeding. Allow 6-7 weeks before the next harvest. A stand of perennial grasses for hay (no alfalfa) will be harvested at different intervals. Cut grasses before they head out and allow a 30-40 day rest period.
- (b) Periodic topdressing with fertilizer/lime may be necessary between cuttings of pure grass stands. Periodic soil testing is recommended to help identify needed nutrients and/or amendments and the needed requirements.
- (c) Pasture species may be grazed lightly during the first year. If the establishment has been successful allow livestock to graze vegetation to a 4-6 inch height after grasses form a canopy and shade legume seedlings. Pastures seeded to grass should be grazed when an 8 inch height is reached. Only allow livestock on pasture if soils are not saturated and avoid excessive trampling of plants. After the first year of seeding establishment, follow the prescribed grazing management plan.
- (d) Weed competition is typically more of a problem for spring seedings than late summer seedings. Weeds can be controlled by clipping or herbicide control. Herbicide selection must be made by a private Certified Crop Advisor or qualified Extension

Specialist with appropriate state pesticide applicator certification. Application shall be in accordance with the manufacturer's label.

9. SPECIAL REQUIREMENTS

10. **MAP/SKETCH AND ADDITIONAL DOCUMENTATION:**

Attach additional documentation such as photos, sketch, or maps as needed.

A large grid of dashed lines, consisting of 12 columns and 12 rows, intended for drawing or sketching. The grid is empty and occupies the central portion of the page.

CONSERVATION PRACTICE JOB SHEET CERTIFICATION

I certify that this practice has been planned with the landowner/producer participant and meets NRCS Practice Standards and Specifications for Forage and Biomass Planting (512). I further certify that the practice details as presented on this job sheet reflect the landowner's/participant's decisions as reflected in the agreed to conservation plan.

Conservation Planner Signature _____ Date _____

I agree to follow the recommendations, seeding requirements, and other items checked. I have participated in the planning of, and made the decision to, implement this practice.

Landowner/Participant _____ Date _____

CONSERVATION PRACTICE INSTALLATION CERTIFICATION

I certify that I have made an on-site inspection of this practice as appropriate to the practice extent to ensure that the conditions reflect those found in the entire practice area. I further certify that the practice is successfully established and meets NRCS Practice Standards and Specifications and is within my assigned job approval authority.

Conservation practice checked by: Please print your name _____

Conservation Planner Certification Signature _____ Date _____

- This practice meets the NRCS-NY Standard and Specification for Forage and Biomass Planting (512).
- This practice does not meet the NRCS-NY Standard and Specification for Forage and Biomass Planting (512).

Notes:

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