

## **405 KAR 5:070. Revegetation.**

RELATES TO: KRS 350.010(2), 350.240, 350.300

STATUTORY AUTHORITY: KRS Chapter 13A, 350.028, 350.029, 350.240, 350.300

NECESSITY, FUNCTION, AND CONFORMITY: KRS Chapter 350 in pertinent part, requires the cabinet to promulgate administrative regulations pertaining to noncoal mineral operations to minimize their adverse effects on the citizens and the environment of the Commonwealth. This administrative regulation sets forth provisions for the reestablishment of vegetation on noncoal mineral operations.

Section 1. General. (1) Each mineral permittee shall establish on all lands disturbed during the course of the mineral operation, a condition which will result in a permanent vegetative cover, effective in controlling erosion, and which supports the approved postmining land use.

(2) Plant species for revegetation shall be selected on the basis of:

(a) Their ability to achieve the approved postmining land use;  
(b) Their ability to control erosion, both in the short term and in the future, but which will allow for plant succession for areas to be returned to forest land or fish and wildlife habitat;

(c) Their ability to promote soil rebuilding; and

(d) Their benefit to wildlife.

(3) Regraded areas shall be seeded or planted as soon as possible; however, the seeding or planting shall be conducted during the appropriate time of year for the plant materials selected in accordance with accepted agricultural or reforestation practices.

(4) Experimental seeding or stocking of trees or shrubs, not typically used, may be allowed if no more than twenty (20) percent of the permit area is seeded or planted with these species; except that, any species used shall meet the requirements of subsection (1) of this section, shall not be in violation of applicable state and federal introduced species statutes, and are not considered poisonous or noxious.

(5) Roads shall be seeded to legumes and perennial grasses only, unless the cabinet determines that the roadway will not contribute to significant off site damage to the public, the environment, or adjacent property owners if left unreclaimed.

(6) If conditions warrant, the cabinet may allow exceptions to this administrative regulation, if the exceptions are consistent with 405 KAR Chapter 5.

Section 2. Soil Stabilization and Amendments. Liming, fertilization, mulching and related practices shall be conducted in accordance with 405 KAR 5:060, Section 4. If there is a problem in reestablishing vegetation, soil tests shall be performed to determine necessary remedial measures.

Section 3. Revegetation Success. (1) Success of revegetation shall primarily be determined on the basis of ground cover, and if applicable, tree and shrub stocking.

(2) Ground cover.

(a) For establishing ground cover for the various postmining land uses, at least four (4) grass and legume species shall be seeded, one (1) of which may be a quick cover species. At least one (1) permanent legume species, in addition to two (2) or more permanent grasses, shall be required for the pastureland postmining land use.

(b) At least one (1) quick cover grass or legume species shall be seeded. However, annual grasses and small grains shall be considered only as a tool in establishing temporary vegetative cover for restoration, and shall not be included in the evaluation of revegetation success.

(c) Ground cover shall be at least ninety (90) percent for areas where the postmining land use is pastureland, or where the area will be seeded to grasses and legumes under the cropland land use.

(d) Ground cover shall be at least eighty (80) percent for all other postmining land uses.

(e) For the selection of ground cover species, the mineral permittee shall consider, but not necessarily be limited to, the seeding mixtures listed in Appendix A of this administrative regulation.

(3) Tree and shrub stocking.

(a) For areas to be reforested, at least 300 trees or shrubs shall be present per acre, including volunteers, during the success evaluation required under Section 4 of this administrative regulation; except, where a greater stocking rate is required for shrub plantings for wildlife pursuant to paragraph (d) of this subsection. A lesser stocking rate may be approved by the cabinet if the tree or shrub planting is only for cosmetic purposes or for similar reasons.

(b) At least four (4) species of trees or shrubs shall be stocked for areas to be reforested with each of the four (4) principal species comprising at least ten (10) percent of the total stocking, of which none shall exceed fifty (50) percent of the total stocking. A lesser diversity may be approved by the cabinet if tree or shrub planting is only for cosmetic purposes or for similar reasons. Only one (1) species of tree is required if a commercial pine plantation is established.

(c) Of the four (4) or more species referenced in paragraph (b) of this subsection, at least one (1) conifer species and at least one (1) hardwood or mast producing species shall be selected for the forest land and fish and wildlife land uses. For forestland, at least fifty (50) percent of the woody plants shall be trees.

(d) For areas within the permit boundary where shrubs, and no trees, are stocked for wildlife a stocking rate of 600 stems per acre shall be required.

(e) If used, black locust (*Robinia pseudoacacia*) shall not exceed twenty-five (25) percent of the woody plant mixture; and European black alder (*Alnus glutinosa*) shall not exceed fifty (50) percent of the total woody plant mixture.

(f) Black locust seed shall be scarified, except if used in fall and spring seeding.

(g) All trees and shrubs counted for success shall be alive and healthy.

(h) Only canopy forming trees shall be stocked for a postmining land use of forest land.

(i) Tree and shrub stocking for wildlife may include border plantings, clump plantings, or strip plantings.

(j) For areas to be reforested, the use of competitive ground cover species such as KY 31 tall fescue (*Festuca arundinaria*), crown vetch (*Coronilla varia*), alfalfa (*Medicago* spp.), and the nonprostate, highway variety of sericea lespedeza (*Lespedeza cuneata*) shall be limited.

(k) The area above the highwall on any water impoundment shall be planted with trees in order to provide a protective barrier and screen.

(l) On very stony areas that cannot be hand planted without difficulty, direct seeding of woody species will be permitted; otherwise, woody species shall be hand planted, except for black locust.

(4) The cabinet may approve a seeding mixture other than those established in Appendix A of this administrative regulation if the mineral permittee submits adequate justification to the cabinet.

(5) Bare areas within the revegetated area shall not exceed one-fourth (.25) acre in size.

(6) Where a seam or stratum of solid rock at the surface makes revegetation impractical, none shall be required.

Section 4. Inspection and Reporting Procedures. (1) When planting is completed a planting report shall be filed with the cabinet. The division's planting report form shall be used for compiling this information.

(2) Inspection and evaluation for vegetation success shall be made during appropriate seasons in order to determine if satisfactory vegetation has been established. In no instance shall this inspection be made until after the completion of two (2) growing seasons. The appropriate report forms shall be used for compiling this information.

(3) The following form is hereby incorporated by reference: Noncoal Planting Report, NCR-18,

February 2017.

(4) This form may be reviewed or obtained at the Department for Natural Resources, 300 Sower Boulevard, Frankfort, KY 40601, Monday through Friday, 8 a.m. to 4:30 p.m.

APPENDIX A OF 405 KAR 5:070 RECOMMENDED HERBACEOUS MIX- TURES FOR REVEGETATION	
Note: A species enclosed in parenthesis may be substituted for the species to the left. Its seeding rate is enclosed in parenthesis.	
Species Mixture	Seeding Rate (Pounds/ acre PLS)
Spring - February 15 to May 15	
1. Orchardgrass	10
White or Ladino clover	2
Red clover	6
2. Orchardgrass	10
White or Ladino clover	1
Red clover	4
Korean or Kobe lespedeza or mix of these	10
3. Orchardgrass	10
Birdsfoot trefoil (Alfalfa)	8 (15)
Red clover	6
4. Wheat (Spring oats)	25 (32)
Switchgrass	10
Indiangrass	10
Big bluestem	5
Little bluestem	5
Birdsfoot trefoil	6
Except for mixture 4, add one (1) of the following quick cover species to the selected permanent spring seeding mixture:	
Wheat (before April 15)	30
Spring oats (before April 15)	32
Balbo rye (before April 15)	30
Perennial ryegrass	10
Annual ryegrass	5
Weeping lovegrass (after April 1)	2
Summer - May 15 to August 1	
Orchardgrass	10
Korean or Kobe lespedeza or	15

mix of these	
Red clover	4
White clover (Birdsfoot trefoil)	1 (6)
Alfalfa	12
Add one (1) of the following quick cover species to the permanent summer seeding mixture:	
Sorghum	20
Foxtail (German) millet	12
Japanese millet	15
Soybeans	40
Cowpeas	40
Pearl millet	10
Fall - August 1 to October 1	
1. Orchardgrass	10
White or Ladino clover	2
Red clover	6
2. Orchardgrass	10
Alfalfa (Birdsfoot trefoil)	15 (8)
Red clover	6
3. Deertongue	12
Birdsfoot trefoil	8
Red clover	6
Add one (1) of the following quick cover species to the selected permanent fall seeding mixture:	
Winter wheat	30
Balbo rye or Winter rye	30
Winter oats	32
Perennial ryegrass	10
Annual ryegrass	5
Mixtures for Wet or Poorly Drained Areas and Pond Borders	
Spring - February 15 to May 15	
Japanese millet	10
Redtop (Reed canarygrass)	3 (15)
Alsike clover	4
Common annual lespedeza (quick cover species)	10
Fall - August 1 to October 1	
Redtop	3
Reed canarygrass	15
Alsike clover	6
Common annual lespedeza (quick cover species)	10
Mixture for Areas to be Stocked With Woody Plants	

Spring or Fall Seeding	
Redtop	3
Perennial ryegrass	5
Birdsfoot trefoil (Appalow lespedeza)	10 (20)
Foxtail millet (quick cover species)	5
If both Appalow lespedeza and birdsfoot trefoil are used, cut their seeding rates in half.	

Note: Seeding Rates are for Pure Live Seed. Seeding rates of the permanent species can be increased if desired, but do not exceed the seeding rate of the temporary species.

Use only one (1) of the temporary species at the rates shown. If more than one (1) are used, reduce the seeding rates of each temporary species appropriately. (21 Ky.R. 765; 1136; 2114; eff. 2-22-1995; TAm eff. 8-9-2007; TAm eff. 7-6-2016; TAm eff. 6-27-2017; Crt eff. 7-3-2018.)