

# **APPENDIX**

# **A**

# **SEED MIXES**

## PURE LIVE SEED CALCULATIONS

Pure Live Seed (PLS) is the percentage of seed (good viable seed) that has the potential to germinate within a measured weight of any seed lot. PLS provides a baseline for comparing the quality of seed lots of the same species that differ in purity and germination.

The seed analysis tag will provide you with all the information needed to calculate %PLS and application rates. Species (kind), variety, lot number, origin (state), germination (germ), purity (pure seed), hard seed (HS), dormant seed (dorm)

$\% \text{ Total Purity} = \% \text{ Purity} + \% \text{ Coating Material.}$

$\% \text{ Total Germination} = \% \text{ Germination} + \% \text{ Hard Seed \{for Legumes\} +}$   
 $\% \text{ Dormant Seed \{for Natives\}}$

$\% \text{ Pure Live Seed} = (\% \text{ Total Germination Rate} \times \% \text{ Total Purity}) / 100)$

**Seed Required** = Application Rate / % Pure Live Seed x 100

\* As shown % figures assume whole number, not decimal format (e.g. 80% is 80 not 0.8)

### Example

#### Seed Analysis Tag:

• 1402 WEST MAIN STREET • LOUISVILLE, KY 40203 • AMS • 1690

KIND: LADINO CLOVER	NET WT 50			
VARIETY: SEMINOLE				
LOT NO: L113-15-C2				
ORIGIN	GERM	HS	DORM	TESTED
OR	70.00	15.00	.00	2/16
PURE SEED: 98.00				
CROP: .50				
INERT: 1.25				
WEED SEED: .25				

Memo  
Treatments

NOXIOUS WEEDS PER LB:

In this example we have a 50lb bag of Ladino Clover (Seminole variety), that originated from Oregon. The seed was tested on 2/2016 and has 98.00% purity. When calculating purity for legumes you may have to include the coating % as well. To calculate Total Germination you need to add % germination and % Hard seed (legumes) or % Dormant Seed (natives).

$$\% \text{ Total Purity} = \% \text{ purity} + \% \text{ coating material}$$

In this instance the % Total Purity = 98.00% purity + 0.00% coating material = 98.00%

$$\% \text{ Total Germination} = \% \text{ germination} + \% \text{ Hard seed (Legumes)} + \% \text{ Dormant Seed (Natives)}$$

% Total Germination = 70.00% germination + 15% hard seed + 0% dormant = 85.00%

$$\% \text{ Pure Live Seed} = \% \text{ Total Purity} \times \% \text{ Total Germination} / 100$$

% PLS = 98.00% Total Purity x 85.00% Total Germination / 100 = 83.3%

This tells you that out of every bulk pound of seed from this lot of Ladino Clover; only 83.3% would be good viable seed. If you purchased a bag of this seed and it weighed 50 pounds, you would only be purchasing 41.65 pounds of good viable seed.

To apply this calculation for field uses when inspecting the seed mixing process, we simply divide the Application rate by the % PLS

$$\text{Seed Required} = \text{Application Rate} / \% \text{ Pure Live Seed}$$

Seed Required = 80 lbs/acre PLS Application Rate / 83.3% PLS X 100 = 96.04 lbs

You would need to mix 96 lbs/acre to achieve the 580 lbs of PLS seed required.

### **HYDROMULCH & HYDROSEEDING (Major Incidentals)\***

The COMMONWEALTH will only pay for the use of a hydroseeder when used to apply hydromulch on project areas specified in the Drawings, Special Conditions, and on all areas where soil material has been removed to bedrock. No seedbed preparation or netting is required on these areas.

**The equipment, hydromulch, seed, lime, fertilizer, and tack are all incidental to the bid item.**

Ag-lime or rock dust meeting the requirements of this section and 100% shall pass through a U.S. Standard # 50 sieve shall be applied at a rate of 1 ton per acre and is not incidental.

### **RESIDENTIAL SEEDING (Major Incidentals)\***

In areas around houses, lime, fertilizer, and seeding rates will vary and additional seedbed preparation work will be required for revegetation of residential areas. Additional seedbed preparation shall be required including hand raking and tilling.

**Residential Seeding includes seedbed preparation, lime, seed, fertilizer, straw only mulch and any other material or items necessary to complete the required work.**

\*For more information about this item refer to the “Revegetation” section of these Technical Specifications.

## SEEDING DATES

The following seeding dates will apply to all seed mixtures.

### Eastern Zone

START DATE	END DATE	SEASON
March 1 <sup>st</sup>	June 15 <sup>th</sup>	Spring
June 16 <sup>th</sup>	August 15 <sup>th</sup>	Cover Crop Only
August 16 <sup>th</sup>	November 15 <sup>th</sup>	Fall
November 16 <sup>th</sup>	February 28 <sup>th</sup> (29 <sup>th</sup> )	Cover Crop Only

### Western Zone

START DATE	END DATE	SEASON
March 1 <sup>st</sup>	May 30 <sup>th</sup>	Spring
June 1 <sup>st</sup>	August 31 <sup>st</sup>	Cover Crop Only
September 1 <sup>st</sup>	November 15 <sup>th</sup>	Fall
December 1 <sup>st</sup>	February 28 <sup>th</sup> (29 <sup>th</sup> )	Cover Crop Only

**GENERAL RECLAMATION MIXTURE**

On slide areas replace Yellow sweet Clover with Crown Vetch

<b>SPRING</b>	
	Lbs/acre PLS
KY 31 Tall Fescue	20
Switchgrass	10
Redtop	5
Orchardgrass	10
Birdsfoot Trefoil	10
Korean Lespedeza (Hulled)	10
Yellow Sweet Clover	5
Ladino Clover	5
Alsike Clover	5
	80 LBS.

<b>FALL</b>	
	Lbs/acre PLS
KY 31 Tall Fescue	20
Switchgrass	10
Orchardgrass	15
Timothy	10
Redtop	5
Ladino Clover	5
Medium Red Clover	5
Yellow Sweet Clover	5
Korean Lespedeza	5
	80 LBS.

**ACIDIC CONDITIONS MIXTURE**

<b>SPRING</b>	
	Lbs/acre PLS
KY 31 Tall Fescue	20
Switchgrass	10
Redtop	5
Deer Tounge	10
Unhulled Bermudagrass	5
Birdsfoot Trefoil	5
Korean Lespedeza (Hulled)	10
Flat pea	10
Alsike Clover	5
	80 LBS.

<b>FALL</b>	
	Lbs/acre PLS
KY 31 Tall Fescue	20
Switchgrass	10
Orchardgrass	10
Timothy	5
Redtop	5
Alsike Clover	5
Flat Pea	10
Yellow Sweet Clover	10
Korean Lespedeza	5
	80 LBS.

**HAYLAND MIXTURE**

<b>SPRING</b>	
	Lbs/acre PLS
Tall Fescue	30
Orchardgrass	20
Timothy	5
Ladino Clover	5
Medium Red Clover	10
Birdsfoot Trefoil	10
	80 LBS.

<b>FALL</b>	
	Lbs/acre PLS
Tall Fescue	25
Perennial Ryegrass	10
Orchardgrass	15
Redtop	5
Ladino Clover	5
Birdsfoot Trefoil	10
Medium Red Clover	10
	80 LBS.



**PASTURE MIXTURE**

<b>SPRING</b>	
	Lbs/acre PLS
Kentucky Bluegrass	30
Orchardgrass	20
Redtop	5
Ladino Clover	5
Medium Red Clover	10
Alfa- Graze alfalfa	10
	80 LBS.

<b>FALL</b>	
	Lbs/acre PLS
Kentucky Bluegrass	25
Perennial Ryegrass	10
Orchardgrass	15
Redtop	5
Ladino Clover	5
Birdsfoot Trefoil	10
Medium Red Clover	10
	80 LBS.

**WILDLIFE MIXTURE**

<b>SPRING</b>	
	Lbs/acre PLS
Switchgrass	15
Sideoats Gramma	15
Orchardgrass	20
Timothy	5
Ladino Clover	5
Medium Red Clover	10
Korean lespedeza	10
	<b>80 LBS.</b>

<b>FALL</b>	
	Lbs/acre PLS
Switchgrass	10
Perennial Ryegrass	10
Orchardgrass	20
Timothy	10
Redtop	5
Alfalfa	10
Ladino Clover	5
Medium Red Clover	5
Korean lespedeza	5
	<b>80 LBS.</b>