



**The Wildland Seed Collecting Industry: The Challenges
we Face, and Why Buy Wildland-Collected?**

Justin Dean, CEO and Owner

What We Do



- Hand/Machine Harvesting Native Plants
- Machine-Clean and Hand-Clean Western Native Seed





 Premier Seed

What We Do



- More Recently Began growing Western Native Plants and Native Plant Plugs on Contract for State and City municipalities.

Showy Milkweed



Who are our customers?

- Bureau of Land Management
- State DWR's/ Wildlife Refuges
- Forest Service
- Municipalities/Hydro-seeders/DOT's
- Solar/Wind Projects
- Mining Companies
- Land Restoration Companies
- Wholesale Seed Companies



Challenges We Face

MAIN CHALLENGES

- Expenses
- Risk/Variance
- Waste
- Crop Failures



Expenses

- Tagging Fees/Permits
- Garbage Service
- Seed Purchases
- Scouting/Timing of Seed Collections
- Hotels/Housing of Workers
- Insurance/Performance Bonds



Expenses

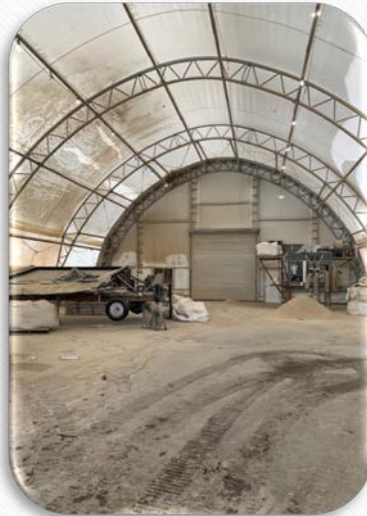
Labor

Testing Fees

- Spent \$25,000 on seed testing last year



Expenses



Gasoline

- We spend nearly \$60,000 a year on gasoline for collecting, scouting, and running gas powered equipment.

Equipment

- Invest Hundreds of Thousands of Dollars into Vehicles and Equipment each year.

Expenses

Buildings

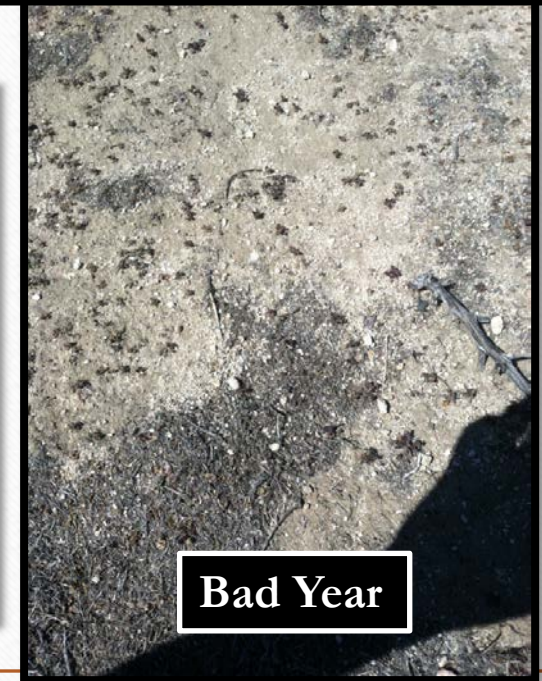
- Hundreds of thousands of dollars in property used to store, dry, grow, clean, prepare, and ship all of our products to our customers that require utilities.
- Our plant grow operations costs us ~\$2000 per month per house in gas to keep our greenhouses warm in the wintertime



Risk/Variance

Crop Failures

- Seed is promised to be delivered on contract
- Insect damage/Wind/lack or rain etc.
- Short Collecting window
- Short shelf life for some seeds
- Permits are wasted
- Opportunity (economic) Cost





FEAST



FAMINE

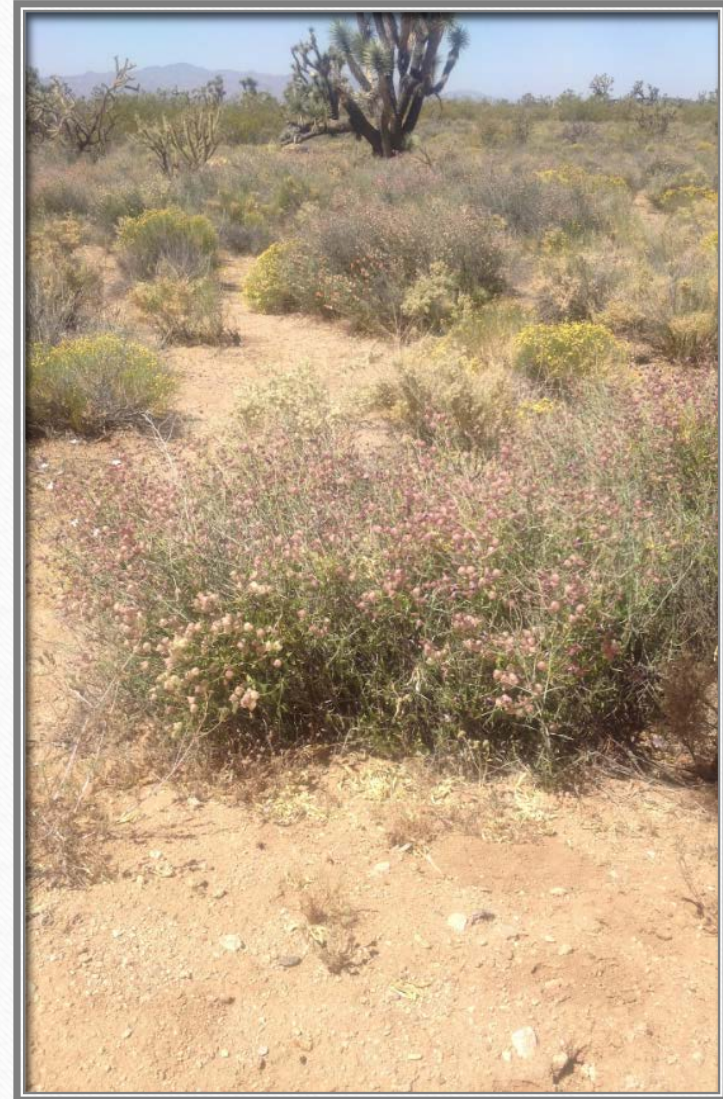


Insect Damage

Difficult Collection Year-Over-Year

Some Seeds such as Mexican Bladdersage (Pictured) are difficult to collect regardless of what year it is due to the plants' natural characteristics.

Learning curve on new species (we have collected over 200 unique species and each one is completely different)





Collecting is HARD, Exhausting Work!



Risk/Variance

Seed Testing Variance

- The Test is supposed to show us what we **can't** see from a visual examination in the warehouse
- Test is meant to determine viability beyond a visual level.
- Sometimes we send in the same Lot of seed to different labs and this is what we see....
- Here is an example of Wyoming Big Sage
- There was a 17.86% spread between best and worst test rating.

LAB	Private Lab 1	State Lab 1	State Lab 2
PURITY	32.95	26.00	36.28
TZ	55.00	29.00	70.00
PLS%	18.12%	7.54%	25.40%

State Lab 1

USAPlants ID	Date Received	Date Completed	Lab Number
000K9J	12/11/2019	12/19/2019	B2019C2088

Description:



Treated With: None Given

Lot Number: 415

Sampled Date:

Test Date:

Seed: Variety	Origin
WY Big Sagebrush : Artemisia tridentata subsp wyomingensis	None Given

Interstate Noxious Weed Test		Grams Used: 1.001
Interstate Noxious Weeds Found		State
None Found		Nbr:LB

Purity Test		Grams Used: 0.1000
Seed Kind : Variety	Pure %	
WY Big Sagebrush : Artemisia tridentata subsp wyomingensis	26.00	
Crop Seed %	Inert Matter %	Weed Seed %
0.00	74.00	0.00
Coating %		
0.00		

Purity Test		Grams Used: 0.1000
Weed Seeds	Crop Seeds	
None Found	None Found	

Tetrazolium Test			
Seed Kind : Variety	Seeds	Viable	Hard Seed %
WY Big Sagebrush : Artemisia tridentata subsp wyomingensis	200	29	0

Notes

Sample pulled by UT Crop Improvement Assn.
 Inert material consists of broken seed, chaff and plant material.
 Noxious weed seed exam done for all USA states except AK and HI.

Visit nmg.nmsu.edu/USAPlants to obtain information on your Lab Samples.
 (Your USAPlants ID:000K9J and your Pin:14381)

WARRANTY: We warrant that the purity and germination test results reported on this form have been carried out in accordance with AOSA rules unless otherwise specified. Test results reflect the condition of the submitted sample and may not reflect the condition of the seed lot from which the sample was taken. Alteration or erasure of any information on this report is in violation of the Federal Seed Act and the New Mexico Seed Law 76-10-11 to 76-10-22, NMSA 1978. Penalties and misdemeanor charges can be levied for each alteration or erasure. Verification of the information on this report can be obtained by contacting NMCA.

Donated use for testing was in accordance with the Specifications of Official Seed Analyst (SPCA) when where available, unless otherwise stated.

State Lab 2

BLM - Boise
 Regional Seed Warehouse
 1962 Commerce Ave
 Boise, ID 83705

Account No.	Date Received	Date Completed	Lab Number
1021	12/26/19	01/08/20	S20-2528

Information Provided by Sender

Variety	Variety Not Stated
Kind	Sagebrush, Wyoming big
Genus/Species	Artemisia tridentata wyomingensis
Lot Number	415
Class	Service
Weight: 3.440 lbs	
BRSW: 1753-19-2.3-000084	SSID# 1753

Purity Analysis		Viability Analysis					
Component	in 0.8281 grams	Pure	Germ Date	Germ	Dormant	Hard	Viable
Sagebrush, Wyoming big wyomingensis	Artemisia tridentata	36.28%	-N-	-N-	-N-	-N-	-N-
Weed seed		0.00%					
Crop seed		0.00%					
Inert matter		63.72%					

Other Crop Seeds	None Found	Noxious Weed Seeds	None Found
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Weed Seeds	None Found	Other Determinations	70 %
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Remarks
 Western States Noxious includes: ID, UT, NV, CA, WY, CO, MT, OR, NM, AZ, WA. Excludes Orobanche spp. and Striga spp.
 Sampler: Gentry
 Vendor: Native Harvest Seed
 Inert Matter: Broken seed, chaff, plant debris and stones.

Tests Requested: Purity, Purity - Other, TZ test. No other tests requested.
Services Requested: Rush

WARRANTY: We warrant that the purity and germination test results reported on this form have been carried out in accordance with AOSA rules unless otherwise specified. Test results reflect the condition of the submitted sample and may not reflect the condition of the seed lot from which the sample was taken. Alteration or erasure of any information on this report is in violation of the Federal Seed Act and the New Mexico Seed Law 76-10-11 to 76-10-22, NMSA 1978. Penalties and misdemeanor charges can be levied for each alteration or erasure. Verification of the information on this report can be obtained by contacting NMCA.

DISCLAIMER OF WARRANTIES: WE MAKE NO OTHER WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY

Private Lab 1

Sender Information
 Boise RSW-BLM
 1962 Commerce Ave
 Boise, ID 83705

Date Received: 01/02/2020
 Date Completed: 01/03/2020
 Date of Report: 01/03/2020
 Sample Number: 117328

Kind of Seed: Wyoming Big Sagebrush
 Variety: Seed Source Identified
 Lot Number: 415-R

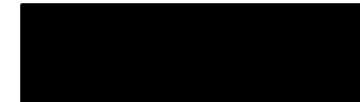
Purity Results in		Other Crops	# Found	Per Pound
Wyoming Big Sagebrush (Artemisia tridentata)	32.95 %	* NONE FOUND		
Other Crops:	0.00 %			
Inert Material:	66.92 %			
Weed Seeds:	0.13 %			
	100.00 %			
0.80 grams tested				
Weed Seeds		# Found	Per Pound	
tumble mustard (Sisymbrium spp.)		1	571	

Wyoming Big Sagebrush (Artemisia tridentata)	Germ%	Hard%	Dorm%	Viable%	# Tested	Test Days	Temp	PLS	TZ%
								55	

Noxious Weeds (All States Noxious)	# Found*	Per Pound	Additional Comments
Not Requested			SSID# 1753-R2& R3 VENDOR: Native Harvest Seed

Special Noxious Weeds	# Found	Per Pound	UGS	# Found	Per Pound
* NONE FOUND			Not Requested		
8.30 grams tested					
WESTERN STATES NOXIOUS					

Dormancy determination was not conducted in accordance with the AOSA rules for testing seeds. Viability of un-germinated seed is to be determined at the end of the prescribed test period. Dormancy on this report was determined as the difference between the Viable Tetrazolium percentage and the Normal germination percentage.





Risk/Variance



Waste



- Spend nearly \$38,000 year on garbage services
- Seed which goes bad or unsold is thrown out
- Seed which comes in with too low of a test is re-cleaned producing twice to three times as much garbage per pound of product produced.

Prices

In the past 20 years, actual seed prices have stayed nearly the same
Adjusting for inflation, seed is much cheaper now than before.

Price Raisers

- Labor and equipment cost more, driving price up
- More regulations in the market, driving price up

Price Droppers

- Increased competition in market drives price down
- Automation and technology drives price down



Prices

- Is it really more expensive?
- Cost benefit analysis on in house collections compared to commercially purchased seed.
- Seed counts



SQUIRRELTAIL TEST DATA ANALYSIS

PLS% (TZ) = 87.51
SEED COUNT/LB = 136,080
136,080 * .8751 = 119,083 viable seeds

PLS% (TZ) = 94.06
SEED COUNT/LB = 158,760
158,760 * .9406 = 149,329 viable seeds

Treated With: None Given		COMMERCIAL	
Lot Number: ELEL-COM			
Sampled Date:		Seed: Variety	Origin
Test Date:		Squirreltail : Elymus elymoides	None Given
Interstate Noxious Weed Test		Grams Used: 90.10	
Interstate Noxious Weeds Found		State	Nbr/LB
None Found			
Purity Test		Grams Used: 9.110	
Seed Kind : Variety	Pure Seed %	Crop Seed %	Inert Matter %
Squirreltail : Elymus elymoides	98.33	0.00	1.16
		Weed Seed %	Coating %
		0.51	0.00
Purity Test		Grams Used: 9.110	
Weed Seeds		Crop Seeds	
Brome, Soft : Bromus hordeaceus		None Found	
Barnyard Grass : Echinochloa crusgalli			
Germination Test			
Seed Kind : Variety	Seeds	Germ %	Abnormal %
Squirreltail : Elymus elymoides	400	69	4
		Dormant %	Hard %
		27	0
Tetrazolium Test			
Seed Kind : Variety	Seeds	Viable %	Hard Seed %
Squirreltail : Elymus elymoides	200	89	0
Notes			
<i>Inert material consists of broken seed, chaff and plant material.</i>			
<i>VENDOR/GROWER INFORMATION: seed count = 136080/lb.</i>			
<i>Noxious weed seed exam done for all USA states except AK and HI.</i>			

Treated With: None Given		WILDLAND COLLECTED	
Lot Number: ELEL-N			
Sampled Date:		Seed: Variety	Origin
Test Date:		Squirreltail : Elymus elymoides	None Given
Interstate Noxious Weed Test		Grams Used: 90.06	
Interstate Noxious Weeds Found		State	Nbr/LB
None Found			
Purity Test		Grams Used: 8.976	
Seed Kind : Variety	Pure Seed %	Crop Seed %	Inert Matter %
Squirreltail : Elymus elymoides	95.98	0.00	2.98
		Weed Seed %	Coating %
		1.04	0.00
Purity Test		Grams Used: 8.976	
Weed Seeds		Crop Seeds	
Bulbous Bluegrass : Poa bulbosa		None Found	
Brome, Soft : Bromus hordeaceus			
Germination Test			
Seed Kind : Variety	Seeds	Germ %	Abnormal %
Squirreltail : Elymus elymoides	400	88	5
		Dormant %	Hard %
		7	0
Tetrazolium Test			
Seed Kind : Variety	Seeds	Viable %	Hard Seed %
Squirreltail : Elymus elymoides	200	98	0
Notes			
<i>Inert material consists of broken seed, chaff and plant material.</i>			
<i>VENDOR/GROWER INFORMATION: Seed Count 158760/lb</i>			
<i>Noxious weed seed exam done for all USA states except AK and HI.</i>			

PLS ONLY: $94.06/87.51 = 1.07$ COMMERCIAL LB = 1 WILDLAND LB
 PLS AND SEED COUNT: $149,329 / 119,083 = 1.25$ COM LB = 1 WILDLAND LB

YET, SEED COUNT IS RARELY USED AS A METRIC IN THE INDUSTRY

Treated With: None Given
 Lot Number: ELEL-COM
 Sampled Date:
 Test Date:

Seed: Variety	Origin
Squirreltail : Elymus elymoides	None Given

Interstate Noxious Weed Test Grams Used: 90.10

Interstate Noxious Weeds Found	State	Nbr/LB
None Found		

Purity Test Grams Used: 9.110

Seed Kind : Variety	Pure Seed %
Squirreltail : Elymus elymoides	98.33

Purity Test Grams Used: 9.110

Crop Seed %	Inert Matter %	Weed Seed %	Coating %
0.00	1.16	0.51	0.00

Purity Test Grams Used: 9.110

Weed Seeds
Brome, Soft : Bromus hordeaceus
Barnyard Grass : Echinochloa crusgalli

Purity Test Grams Used: 9.110

Crop Seeds
None Found

Germination Test

Seed Kind : Variety	Seeds	Germ %	Abnormal %	Dead %	Dormant %	Hard %
Squirreltail : Elymus elymoides	400	69	4	27	0	0

Tetrazolium Test

Seed Kind : Variety	Seeds	Viable %	Hard Seed %
Squirreltail : Elymus elymoides	200	89	0

Notes

Inert material consists of broken seed, chaff and plant material.
VENDOR/GROWER INFORMATION: seed count = 136080/lb.
 Noxious weed seed exam done for all USA states except AK and HI.

Treated With: None Given
 Lot Number: ELEL-N
 Sampled Date:
 Test Date:

Seed: Variety	Origin
Squirreltail : Elymus elymoides	None Given

Interstate Noxious Weed Test Grams Used: 90.06

Interstate Noxious Weeds Found	State	Nbr/LB
None Found		

Purity Test Grams Used: 8.976

Seed Kind : Variety	Pure Seed %
Squirreltail : Elymus elymoides	95.98

Purity Test Grams Used: 8.976

Crop Seed %	Inert Matter %	Weed Seed %	Coating %
0.00	2.98	1.04	0.00

Purity Test Grams Used: 8.976

Weed Seeds
Bulbous Bluegrass : Poa bulbosa
Brome, Soft : Bromus hordeaceus

Purity Test Grams Used: 8.976

Crop Seeds
None Found

Germination Test

Seed Kind : Variety	Seeds	Germ %	Abnormal %	Dead %	Dormant %	Hard %
Squirreltail : Elymus elymoides	400	88	5	7	0	0

Tetrazolium Test

Seed Kind : Variety	Seeds	Viable %	Hard Seed %
Squirreltail : Elymus elymoides	200	98	0

Notes

Inert material consists of broken seed, chaff and plant material.
VENDOR/GROWER INFORMATION: Seed Count 158760/lb
 Noxious weed seed exam done for all USA states except AK and HI.

Why Buy Wildland Collected Seed?

- Best seed stands are selected from within Provisional Seed Zones, yielding consistent, high-quality seed.
- Prices have remained the same for decades due to competition and automation in the industry.
- Regulations have gone up, ensuring seed is accurately sourced for revegetation in specific climates.
- Seed can be custom collected; readily available

Importance of Purchasing from Well-Established Companies

- Performance bonds
- Large insurance policies
- Years of experience with obscure species
- Large inventories
- Relationships within the industry

