

Western Larch Ten-Year Response to Weed/Feed Treatments



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And

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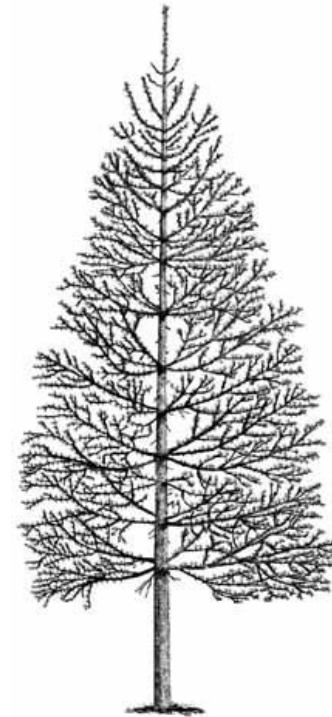
**IFC Annual Meeting
Moscow, ID., March 29, 2016**



Tornilla and Gold Creek Weed/Feed Demos

Treatments

TRT	Formulation	Name
1	Control (No fertilizer, No herbicide)	Control
2	200 N (lbs./ac)	Nitrogen Only
3	Herbicide 15 GPA equivalent: Chopper (2 lb. Imazapyr 24oz/ac.) Razor (Glyphosate 2.0 qt/ac)	Herbicide Only
4	200 N plus Herbicide	N plus Herbicide
5	200 N, 170 K, 90 S, 3 B	Best
6	200 N, 170 K, 90 S, 3 B plus Herbicide	Best plus Herbicide
7	200 N, 170 K, 90 S, 10 Cu, 3 B, 10 Mg, 10 Zn, 3 Fe	Complete
8	200 N, 170 K, 90 S, 10 Cu, 3 B, 10 Mg, 10 Zn, 3 Fe plus Herbicide	Complete plus Herbicide



Dr.
Death!

Tornilla and Gold Creek Weed/Feed Demos

Non-Replicated Study Design

<p>Plot 1 Best Estimate Nutrient Blend Plus Herbicide ----- 66 ft -----</p>		<p>Plot 2 Nitrogen Only ----- 66 ft -----</p>		<p>Plot 3 Herbicide Only ----- 66 ft -----</p>		<p>Plot 4 Nitrogen Plus Herbicide ----- 66 ft -----</p>
10 Ft Buffer		10 Ft Buffer		10 Ft Buffer		10 Ft Buffer
<p>Plot 5 Best Estimate Nutrient Blend</p>	10 Ft Buffer	<p>Plot 6 Control – No Treatment</p>	10 Ft Buffer	<p>Plot 7 Full Multi-nutrient Blend</p>	10 Ft Buffer	<p>Plot 8 Full Multi-nutrient Blend Plus Herbicide</p>



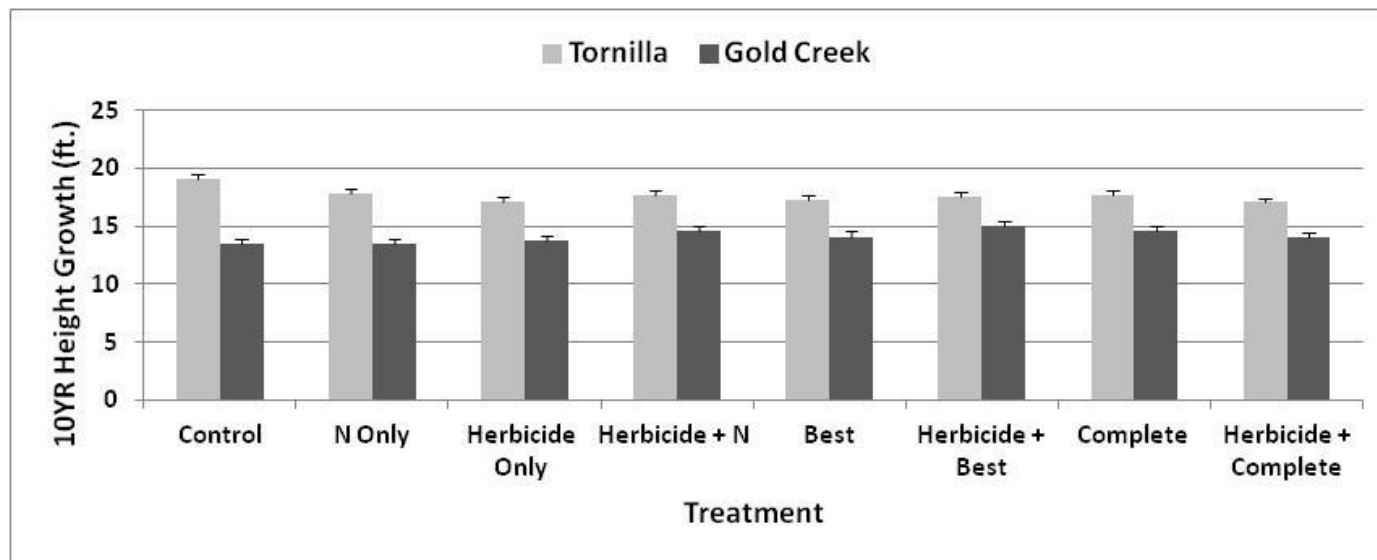
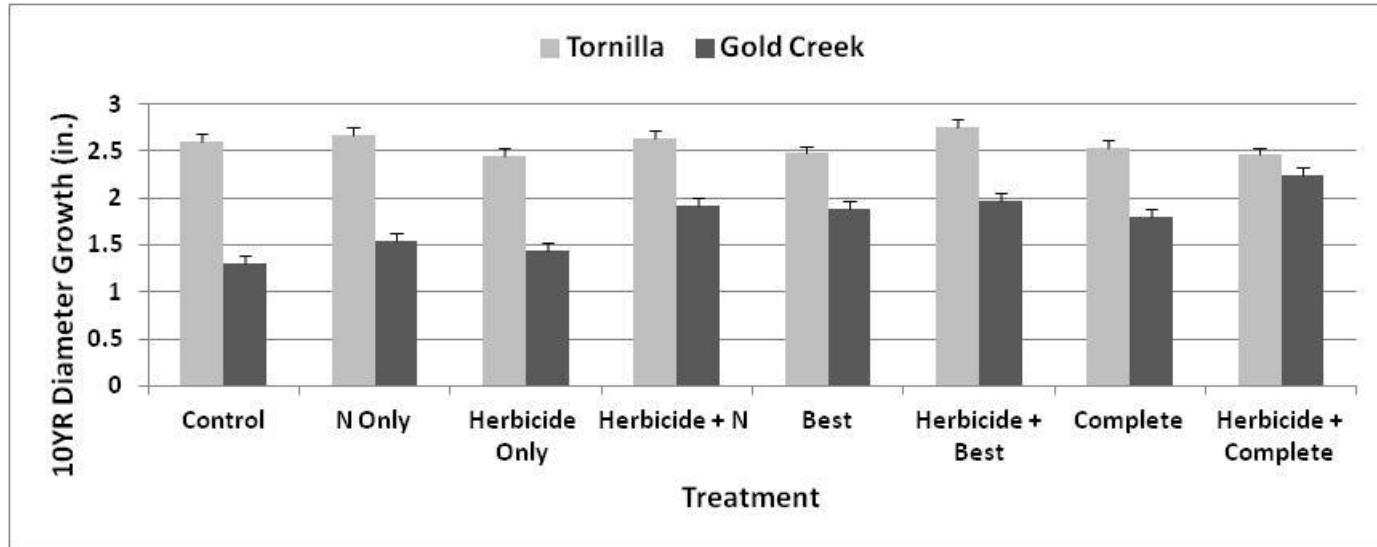
Tornilla and Gold Creek Weed/Feed Demos

Site and Stand Characteristics

Site	Soil Parent Material				Vegetation Series			Elevation	
TORNILLA	Ash/Till – Carbonate-Sedimentary (Waldbillig ashy sil)				W. Red Cedar (warm moist)			3646'	
GOLD CREEK	Ash/Till – Metasedimentary (Waldbillig-Holloway gr sil)				Subalpine Fir (cool moist)			4772'	
Initial YR0 - Average per acre condition for all plots									
Site	QMD (inches)	Site Height (feet)	Trees Per acre	BA (ft ² /a)	Relative Density	Volume (ft ³ /a)	SDI	Max SDI	% Max SDI
TORNILLA	4.4	32	283	30	14	293	76	395	19
GOLD CREEK	5.8	35	248	46	19	560	104	476	22
YR10 - Average per acre condition for all plots									
Site	QMD (inches)	Site Height (feet)	Trees Per acre	BA (ft ² /a)	Relative Density	Volume (ft ³ /a)	SDI	Max SDI	% Max SDI
TORNILLA	6.9	51	283	74	28	1159	155	395	39
GOLD CREEK	7.7	50	248	81	29	1401	163	476	34

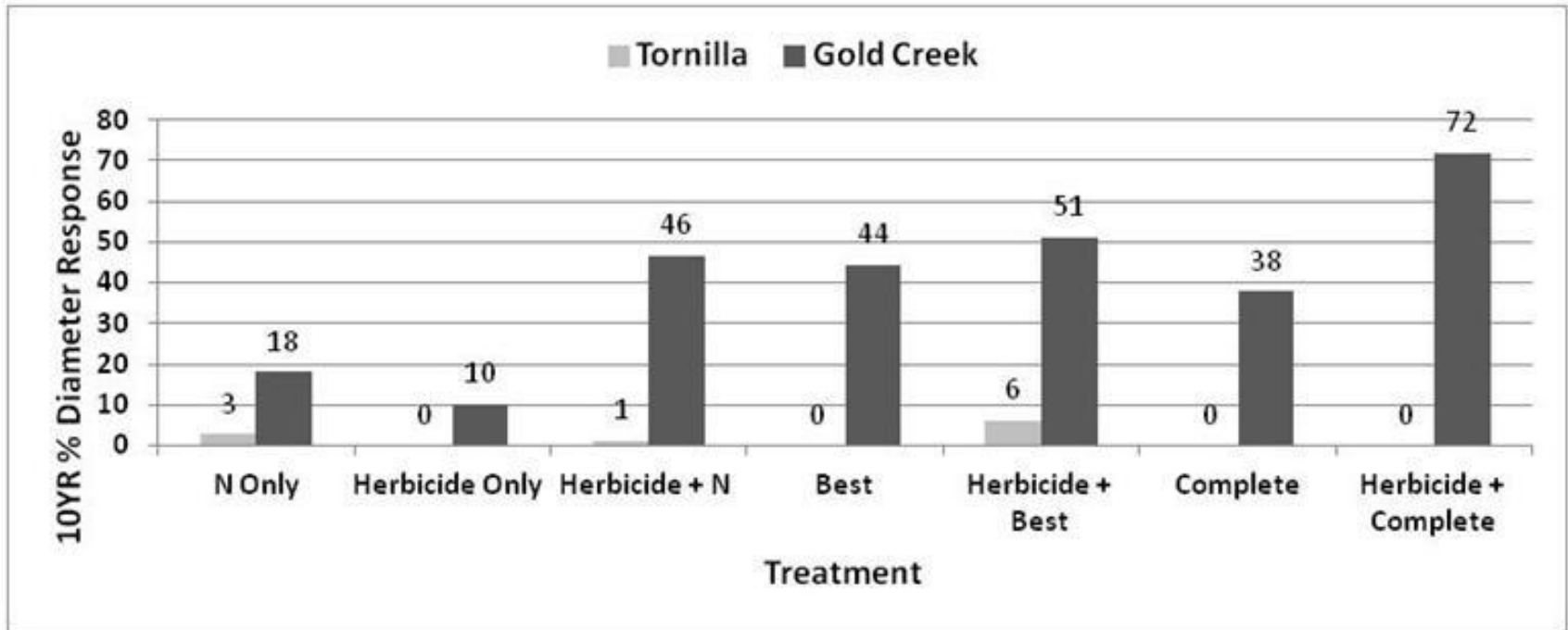
Tornilla and Gold Creek Weed/Feed Demos

Ten-Year Individual Tree Diameter and Height Growth



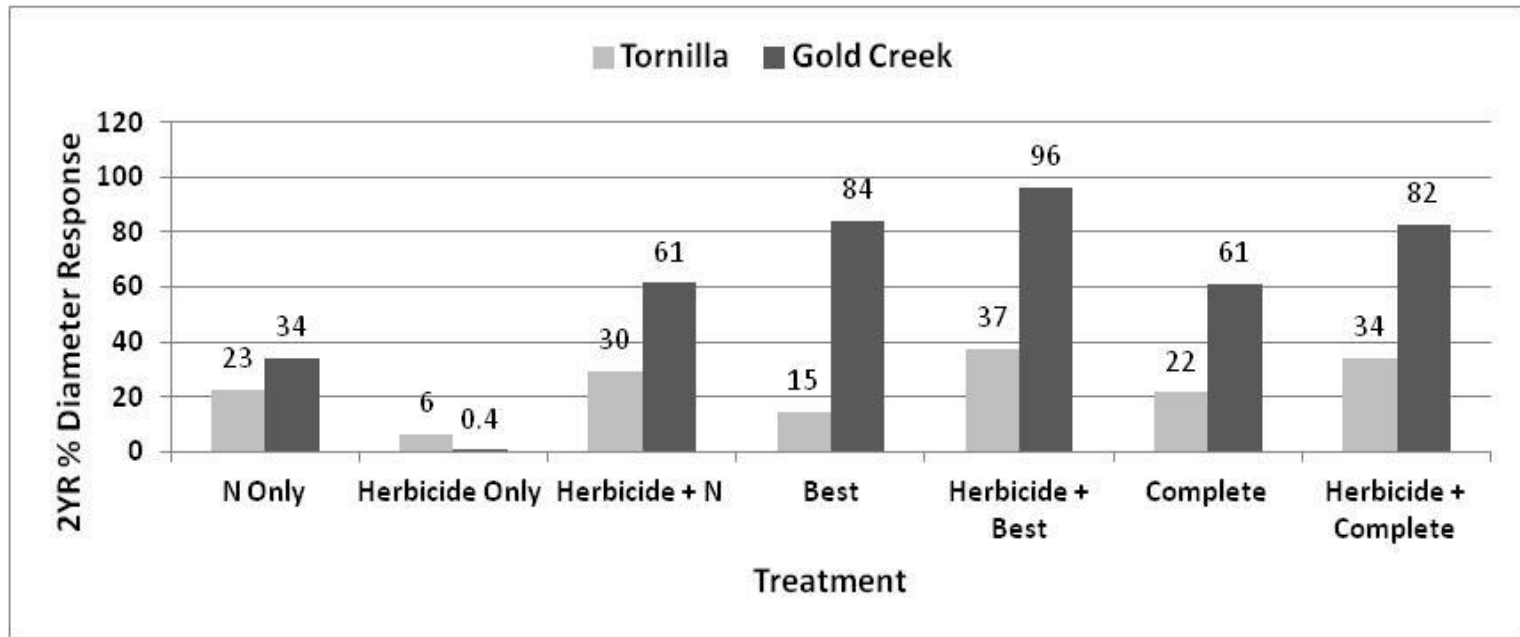
Tornilla and Gold Creek Weed/Feed Demos

Ten-Year Individual Tree Diameter Growth Response



Tornilla and Gold Creek Weed/Feed Demos

Two-Year Individual Tree Diameter and Height Growth



Why did Tornilla Stop Responding??

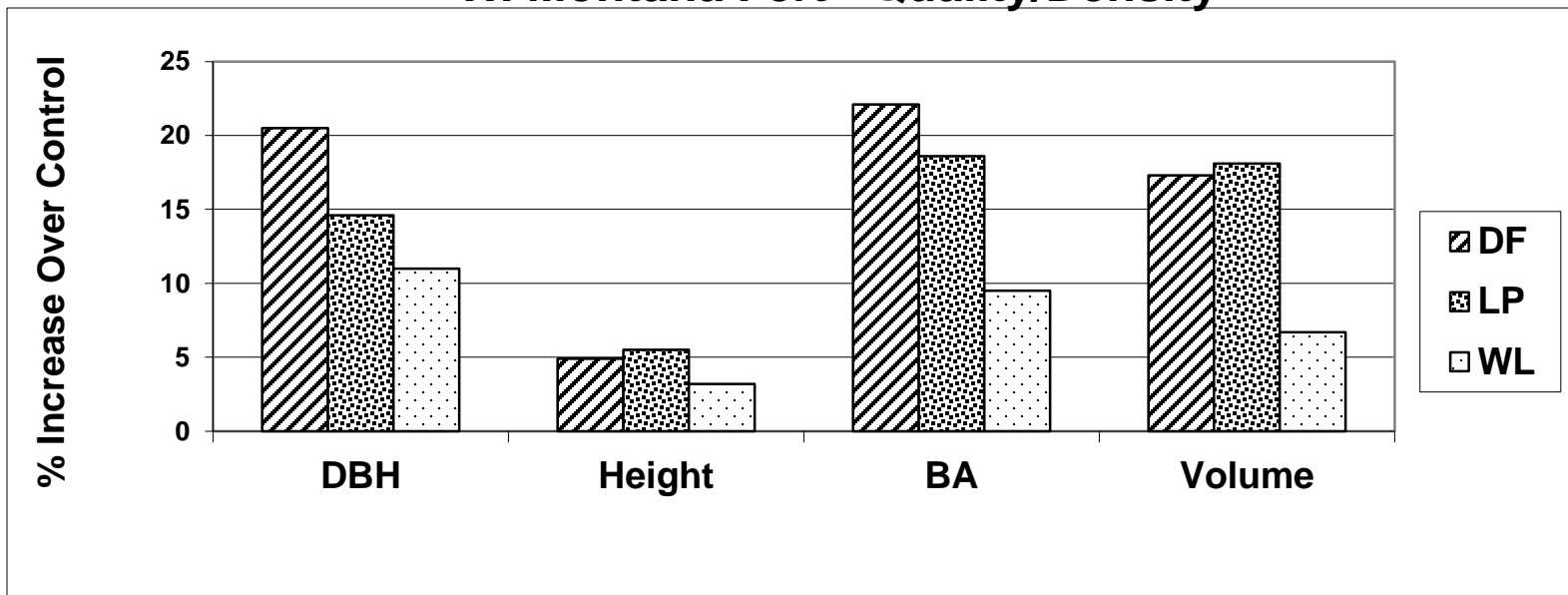
- Non-Replicated Study?
- Treatments - Herbicide or Fertilizer?
- Site Factors?
 - Soils and Rock content
 - Soil Parent Material
 - Logging Disturbance
- Western Larch Response?
- Was it Dr. Death!!!!?



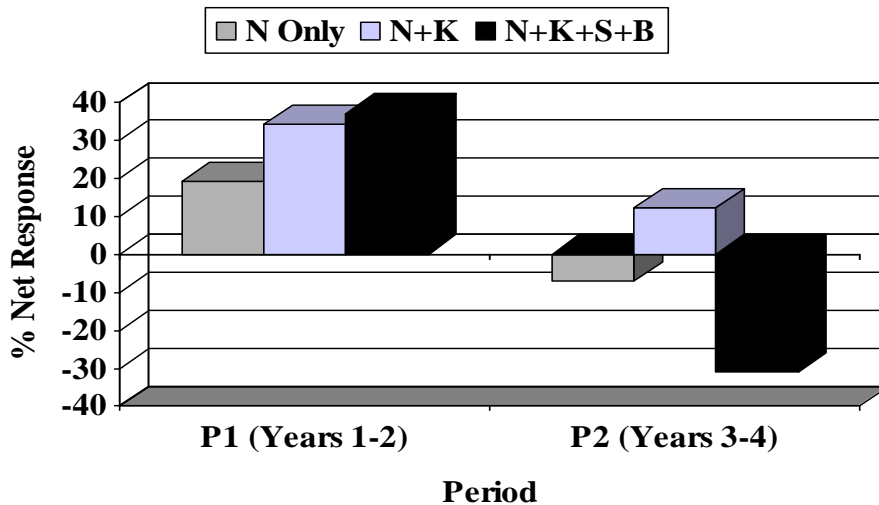
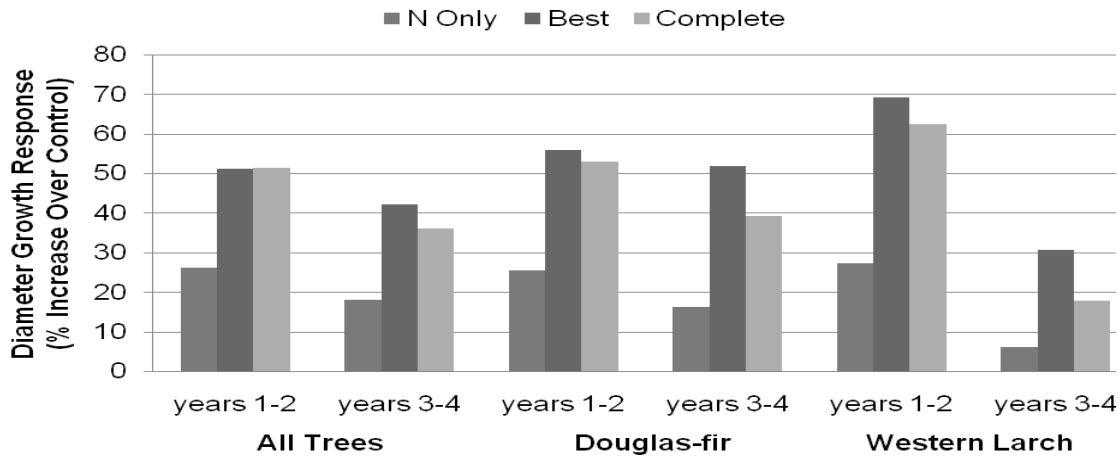
Western Larch Weed/Feed Response

Treatment	W. Montana - Western Larch Screening Trials 2-YR Response Multipliers		
	P1BA	P2BA	BAM (Tornilla)
N-Only	1.23	1.12	1.19 (1.30)
Weed-Only	0.97	1.17	1.06 (1.13)
N+Weed	1.21	1.58	1.37 (1.46)
Multi+Weed	1.07	1.35	1.19 (1.74)

W. Montana Fert - Quality/Density



NEWA Western Larch Feed Response



Clark Lake



Living Larch on Skid Row
by Phil Cannon



Vanstone

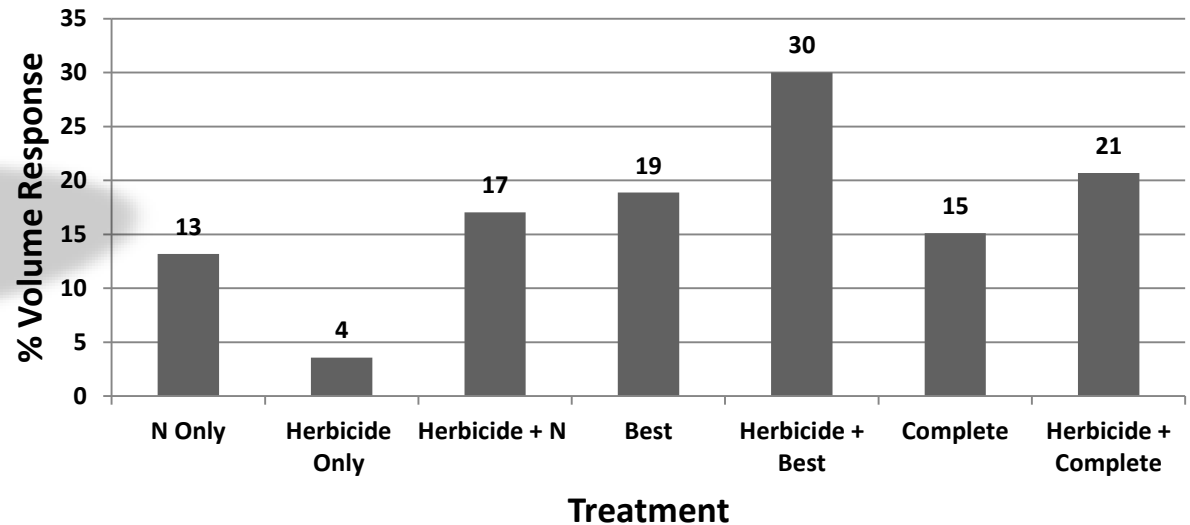
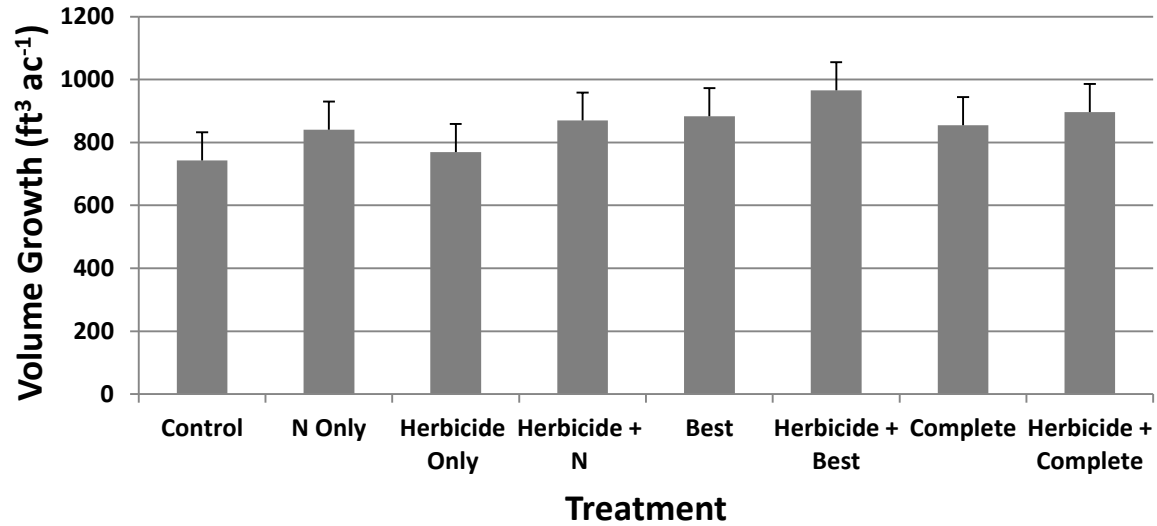
Photo by Ben Rost

Thin soils and heavily disturbed site (“Skid Row”). Is it possible that fertilized trees grew faster than the site was capable of supporting?

Drought conditions were in effect throughout most of the four years under study. This combined with thin soils and site disturbance probably exacerbated growth/response issues.

Tornilla and Gold Creek Weed/Feed Demos

Combined Ten-Year Stand (Plot) Volume Growth and Response





University of Idaho
Intermountain Forestry Cooperative