



Alberta Forage Industry

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Alberta Forage Industry

What are Forages?

Forage is a term used to describe the vegetation from grass and legume plants that serves as a source of feed for domestic or wild animals through grazing or by mechanical harvesting.

For stored feed, this typically involves the removal of the majority of the above ground biomass, while for seed, the majority of the biomass is left in the field.

Forage plants also provide valuable ecological services through providing biodiversity, erosion control and the protection of water quality

Alberta Forage Industry



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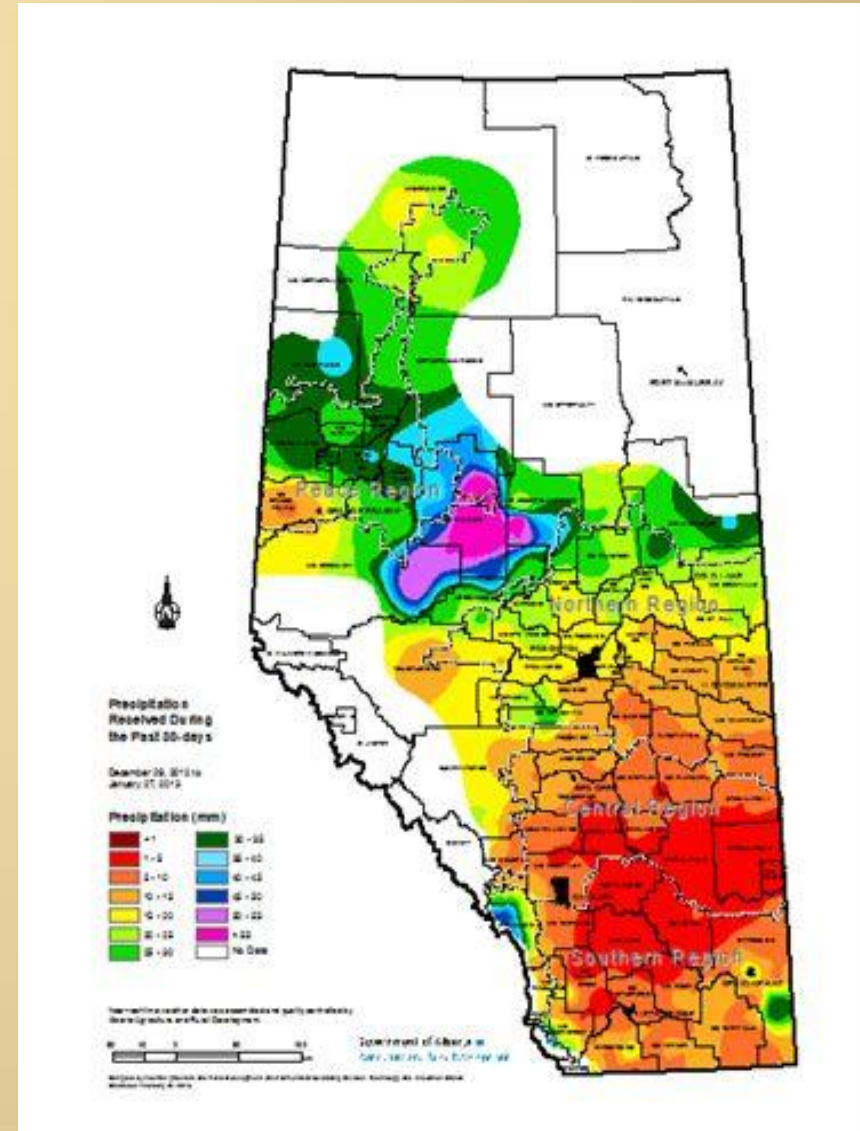
Forage Acres

- **Native Range - 16,135,000**
- **Tame Pasture - 6,137,000**
- **Forage Seed - 132,000**
- **Tame hay - 5,995,989**

**** 28,399,989 ac
(50% of Alberta farmland)**

Hay Production

**Tame hay - 7,686,480 tonnes
(10 yr average)**



Alberta Forage Industry



Tame Hay



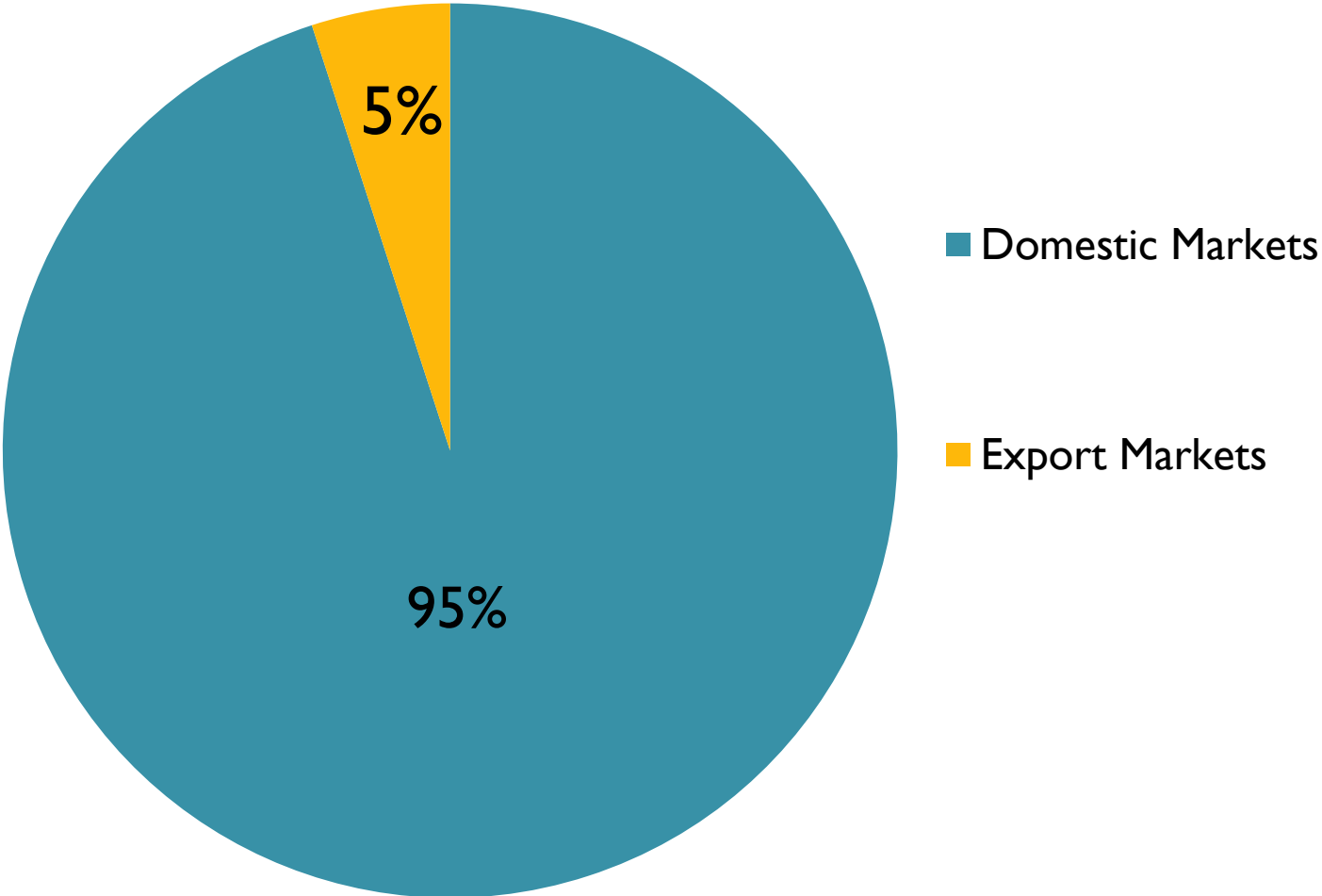
Export Hay



Forage Seed



Tame Forage Utilization
Domestic vs Export Markets



Who's Our Customer



What Drives Domestic Hay Production

- Livestock Numbers
- Competing Crops
- Farm Scale
- ROI



Domestic Hay Production

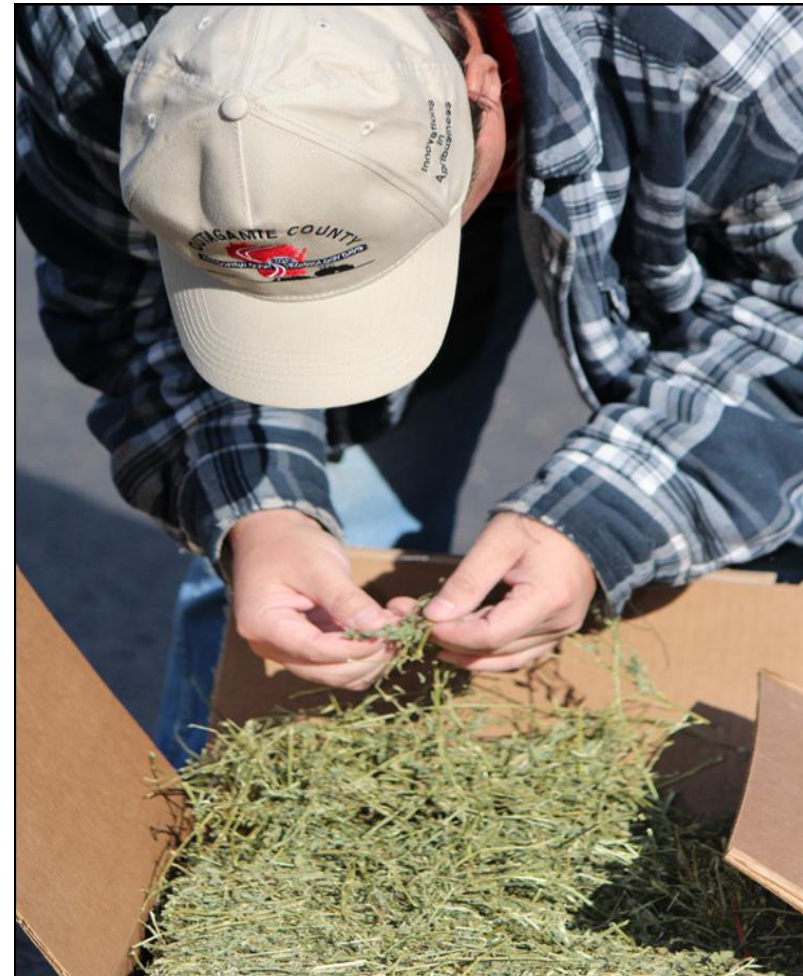
Which Forage Crops?

- 6 legume species
- 20 grass species
- Annuals, Biennials, Perennials
- Soil conditions
- Annual precipitation
- Market demand



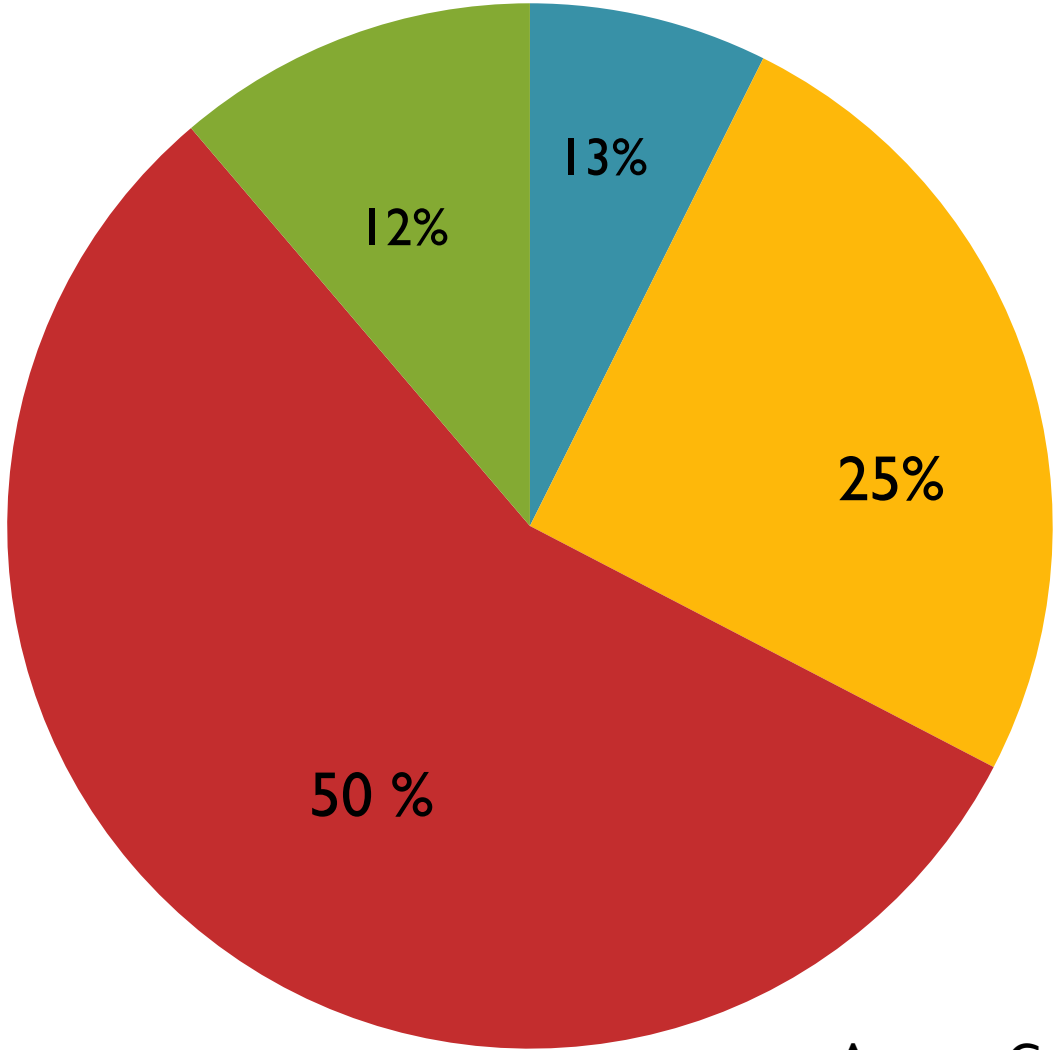
Domestic Hay Quality

- Chemical Analysis
 - ADF, NDF, Protein
 - RFV (relative feed value)
- Color
- Smell
- Texture
- Mold





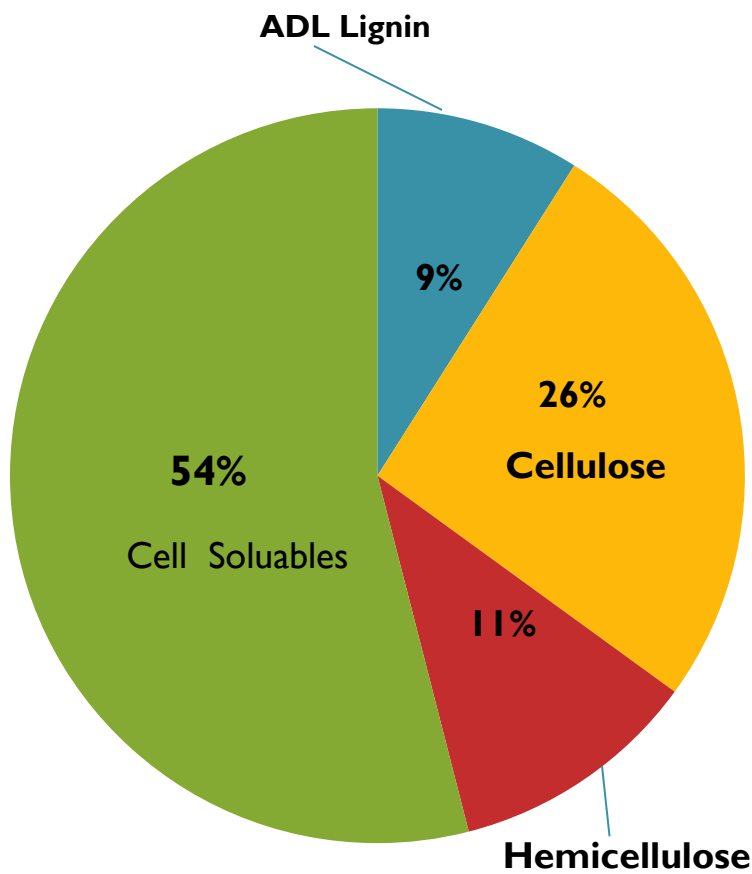
Grass Hay Production
General Cost Profile



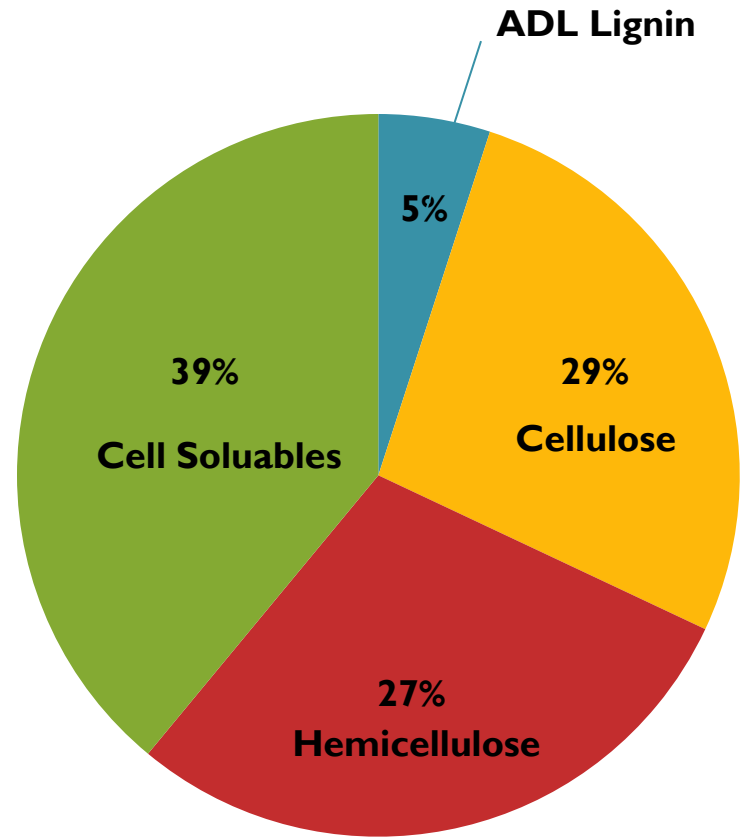
- Seeding
- Fertilizer
- Harvest
- Storage

Average Costs over Crop Life

Fiber Composition: Alfalfa vs Orchardgrass



Alfalfa: ADF 35% NDF 45%

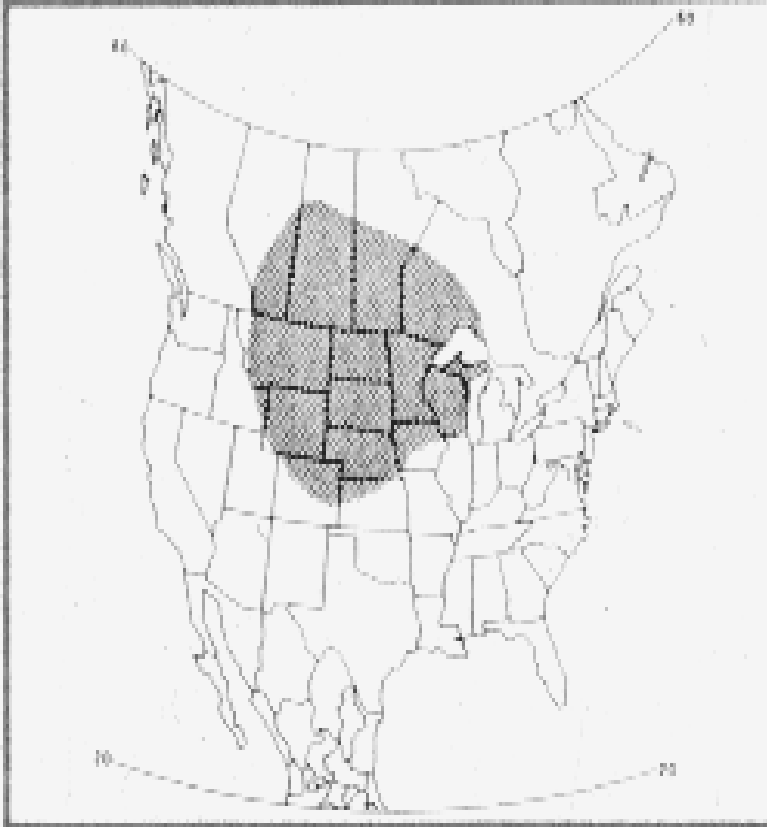


Orchardgrass: ADF 34% NDF 61%

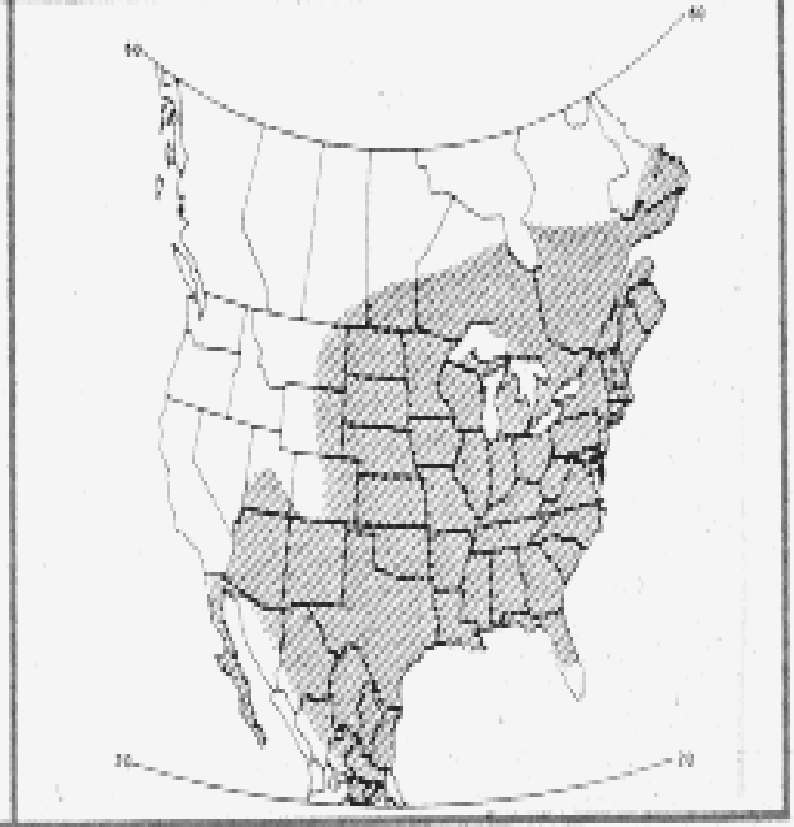
Source: Manitoba Agriculture "Green Gold"

Warm Season Grasses

PRAIRIE SANDREED
(*CALAMOVILFA LONGIFOLIA*)



SWITCHGRASS
(*PANICUM VIRGATUM*)



Mean Annual Yield 7 Grasses- 3 Prairie Provinces

Jefferson et al 2002

	Location					
Species	Cultivar	Brandon clay soil	Brandon sandy soil	Lethbridge	Swift Current	Swift Current Irrigated
Cool –season	Mg/ha (3 or 4 yr averages)					
Thickspike	Critana	7.2	1.2	6.7	2.7	4.0
wheatgrass	Lodorm	4.8	1.6	7.5	2.0	5.3
Green needlegrass	ND-691	10.5	2.4	15.8	2.2	6.6
Mammoth wildrye	Rodan	6.9	2.0	7.7	2.2	5.2
Western Wheatgrass	Rosana	6.0	1.7	8.8	2.5	5.4
Warm-season						
Big Bluestem	Bison	6.2	1.6	5.5	1.1	3.0
Switchgrass	Dacotah	6.5	1.7	7.0	1.0	4.3
Prairie sandreed	Goshen	0.0	1.8	9.5	1.1	2.4
	ND-95	0.3	2.2	7.9	1.4	3.1

Switchgrass Cultivar Cellulose or Hemicellulose Content

Cultivar	Cellulose		Hemicellulose	
	Swift Current	Brandon	Swift Current	Brandon
		g kg ⁻¹		
Blackwell	282	288	288	266
Cave-in-Rock	249	283	285	266
Dacotah	312	330	293	275
Forestburg	306	298	300	296
Nebraska 28	307	294	300	262
Pathfinder	274	290	284	274
Summer	285	311	301	288
Sunburst	293	313	302	302
ND 3743	306	342	289	291
Trailblazer	-	285	-	270
LSD 0.05	10	12	ns	16

Forage Exports



Why Forage Exports

- Expanding livestock numbers
- Replacement of forage acres with food crops
- Less water for irrigated production
- Global reputation for quality, service and inspection regulations in Canada

Export Hay Production

Which Crop ?

- Timothy
 - fiber source

- Alfalfa
 - protein source

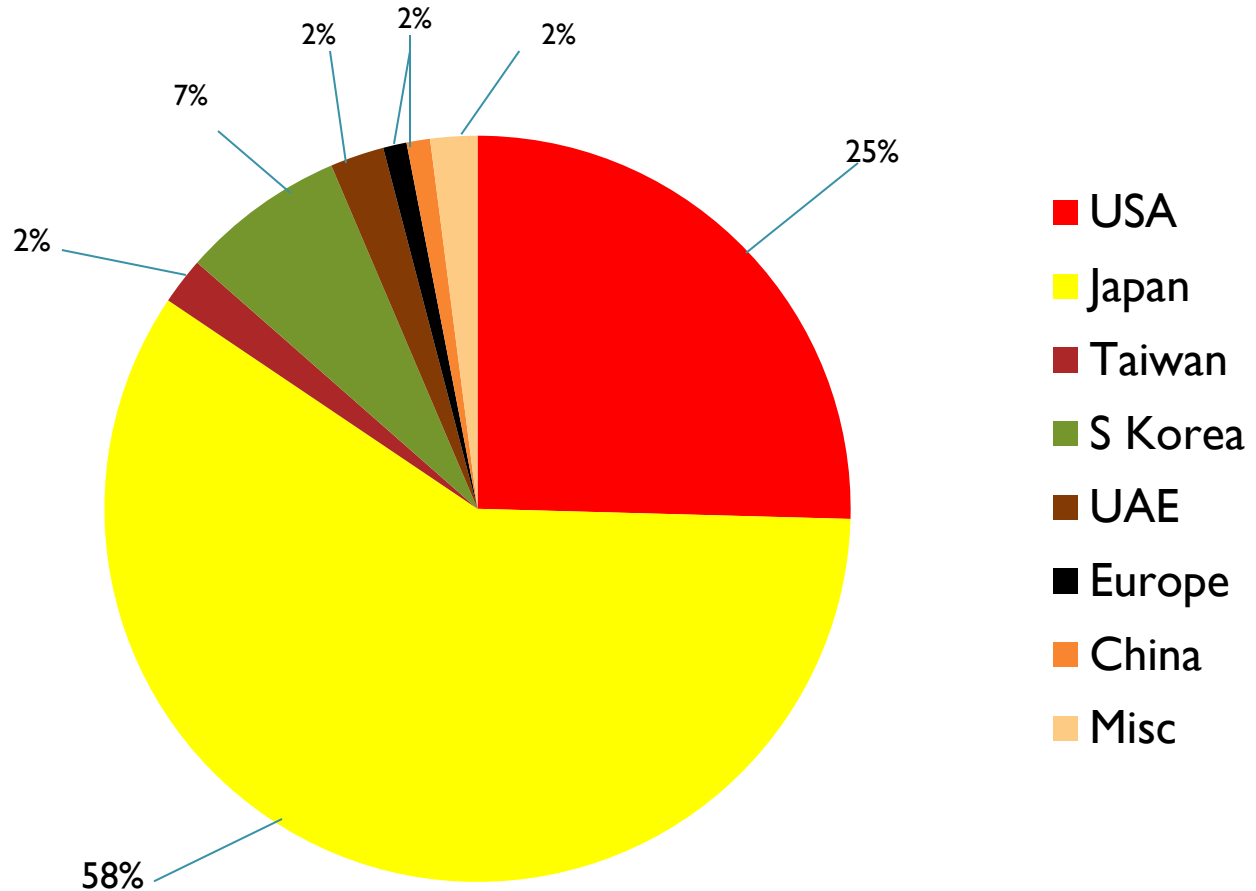


Forage Export Products

- Compressed Hay
- Cubes
- Pellets
- Baled Hay
- Straw



Alberta Forage Exports (\$ basis)



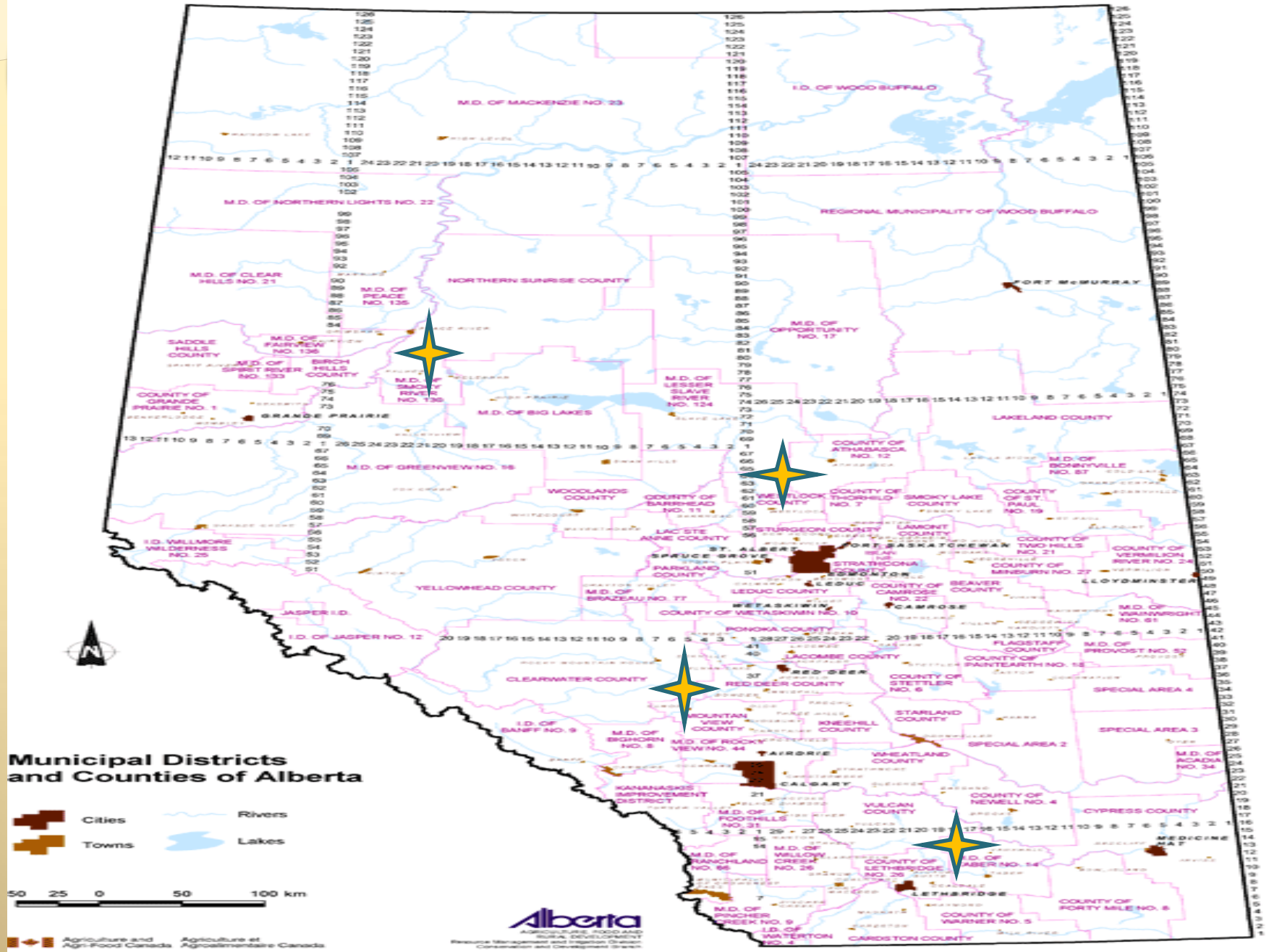
\$114 million 2012
Alberta 70% of Canadian Exports

Source : Stats Canada

Export Hay Quality

- Color
- Mold
- Disease/Insects
- Fiber Content
- Chemical Analysis
 - ADF, NDF, Protein
 - RFV (relative feed value)
- Phytosanitary Certificates





Municipal Districts and Counties of Alberta

50 25 0 50 100 km
 Agriculture and Agri-Food Canada
 Agriculture et Agro-Aliments Canada

Alberta
 AGRICULTURE AND RURAL DEVELOPMENT
 Agriculture et Agro-Aliments Canada
 Resource Management and Regional Growth
 Conservation and Development Branch

Grass and Legume Forage Seed Production in Alberta



-132,000 acres in Alberta



Grass Seed Crops

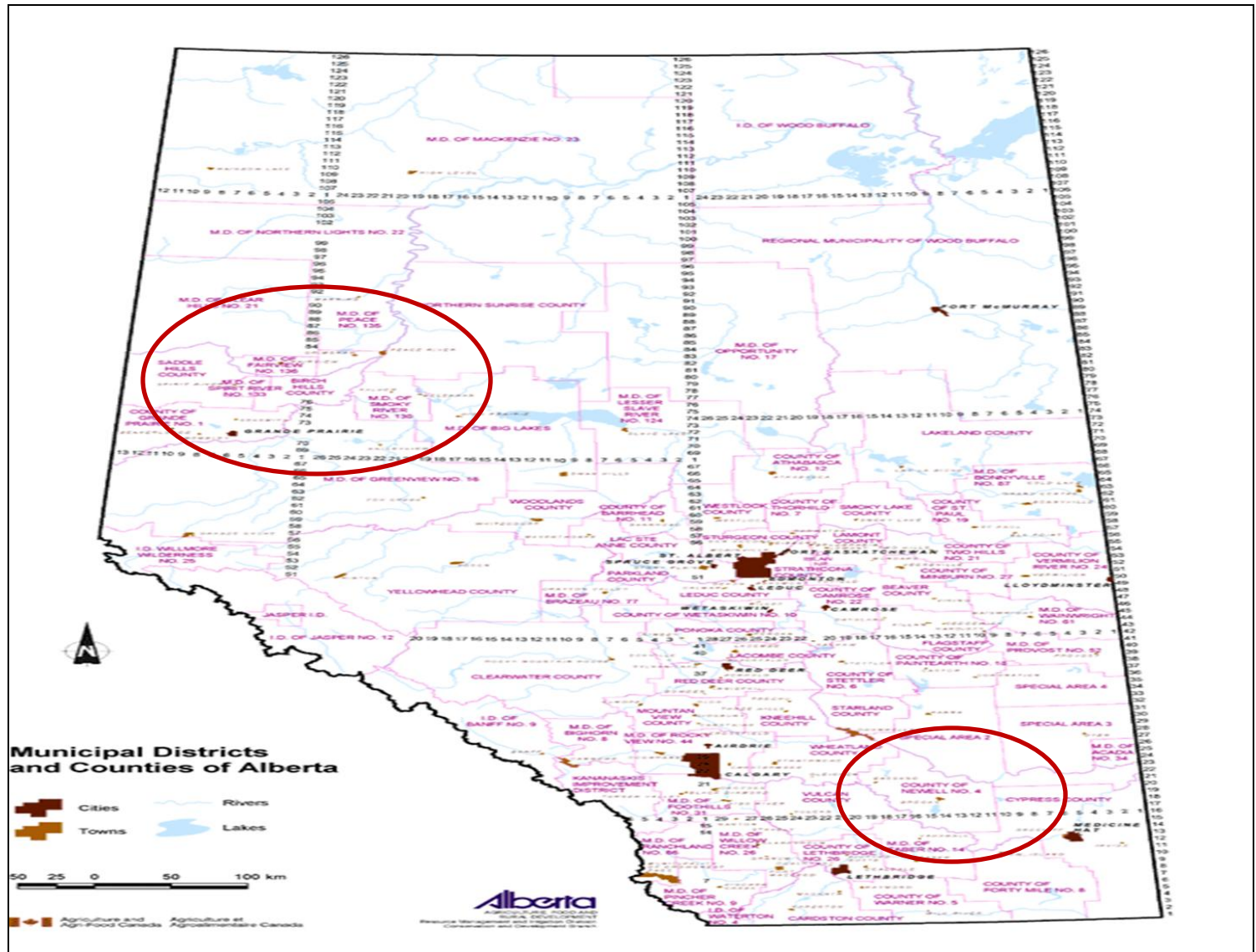
- Creeping red fescue
- Timothy
- Bromegrass
- Wheatgrasses
- Native grasses

Legume Seed Crops

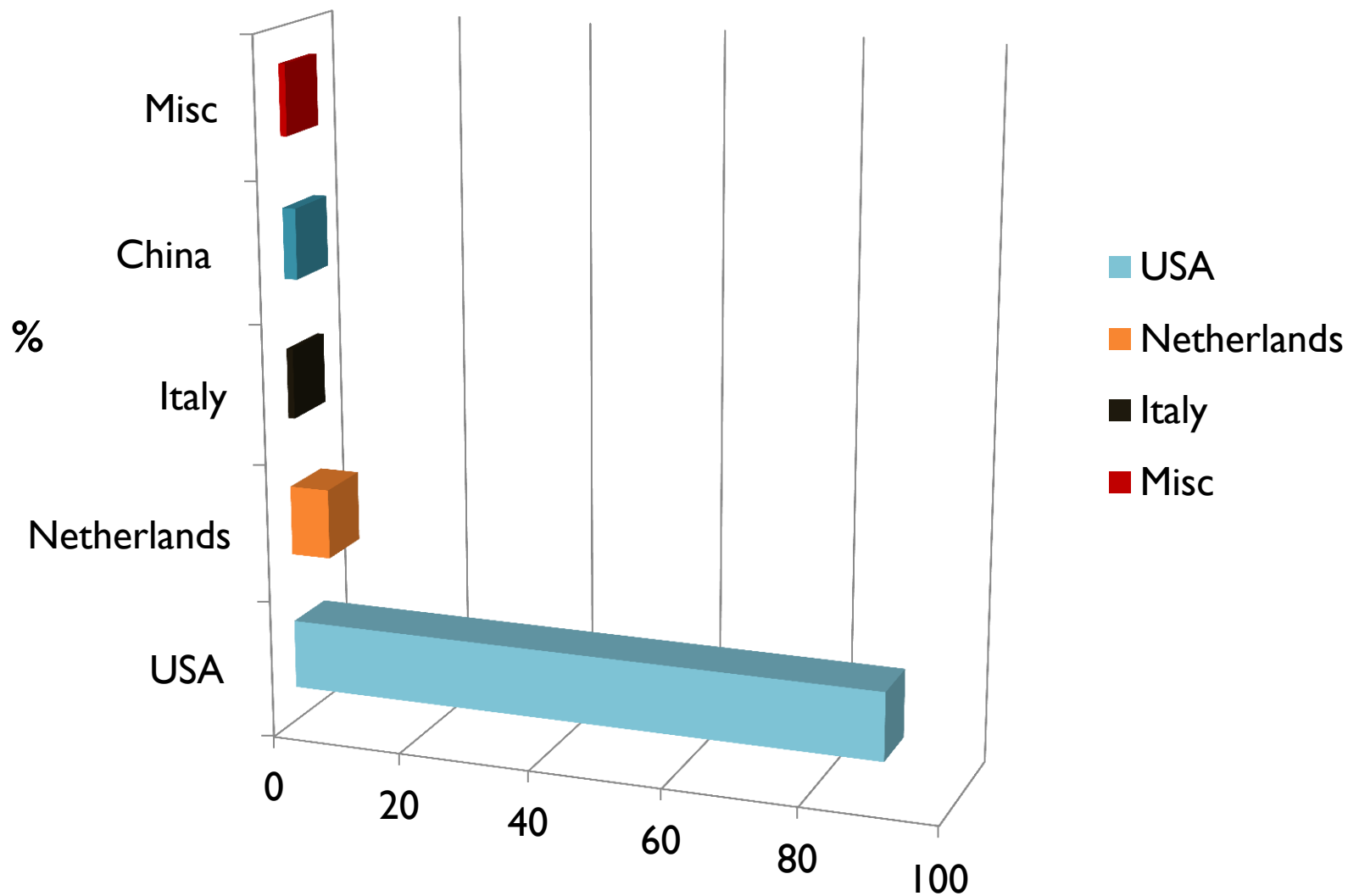
- Alfalfa (mainly in southern AB)
- Clover (red, alsike and sweet)



Forage Seed Production Areas



Alberta Forage Seed Exports



Source: 2012 Stats Canada

Average % nutrient content of creeping red fescue seed, straw and re-growth samples collected from 2000-2004

Plant Parts	# of Samples	Nitrogen	Phosphorous		Potassium		Sulphur
		%	%	% P ₂ O ₅	%	% K ₂ O	%
Seed	5	2.35	0.39	0.90	0.59	0.94	0.22
Straw	72	1.10	0.12	0.28	1.64	2.62	NA*
Re-growth	19	1.87	0.18	0.41	1.8	2.88	NA*



Questions?

