

**Minnesota State College and University system  
Workforce Assessment initiative  
July, 2012**

**Northwest Minnesota  
Supply and Demand in Select Agricultural Occupations**

**AGRICULTURAL MECHANICS AND EQUIPMENT**

**Table 1A. Education and Wages for  
Agricultural Mechanics and Equipment**

<b>Occupation Title</b>	<b>Education Level</b>	<b>Median Wage</b>
Farm Equipment Mechanics and Service Technicians	High school diploma or equivalent	\$17.45
Mobile Heavy Equipment Mechanics, Except Engines	High school diploma or equivalent	\$22.63
Regional Average, All Occupations		\$14.85
Statewide Average, All Occupations		\$17.77

**Table 1B. Current and Future Labor Demand  
for Agricultural Mechanics and Equipment**

<b>Occupation Title</b>	<b>Current Demand</b>			<b>Future Demand</b>	
	<b>2009 Estimated Employment</b>	<b>Current Occupations in Demand Indicator (5=high)</b>	<b>Job Vacancy Rate</b>	<b>2009- 2019 Percent Growth</b>	<b>2009- 2019 Average Annual Openings</b>
Farm Equipment Mechanics and Service Technicians	236			-15.3%	5
Mobile Heavy Equipment Mechanics, Except Engines	334			4.5%	8
Regional Total - Agricultural Mechanics and Equipment	570			-3.7%	13
Statewide Total - Agricultural Mechanics and Equipment	4,315			14.2%	173
Regional Total - All Occupations	250,094		2.2%	7.6%	7,509
Statewide Total - All Occupations	2,830,000		2.0%	13.0%	104,150

NOTE: NO SUPPLY DATA FOR **AGRICULTURAL MECHANICS AND EQUIPMENT**  
AVAILABLE FOR NORTHWEST MINNESOTA.

**ANIMAL SCIENCE**

**Table 2A. Education and Wages for  
Animal Science**

<b>Occupation Title</b>	<b>Education Level</b>	<b>Median Wage</b>
Animal Scientists	Doctoral or professional degree	
Farm and Home Management Advisors	Master's degree	
Farmers, Ranchers, and Other Agricultural Managers	High school diploma or equivalent	\$34.32
First-Line Supervisors of Farming, Fishing, and Forestry Workers	High school diploma or equivalent	\$18.13
Regional Average, All Occupations		\$14.85
Statewide Average, All Occupations		\$17.77

**Table 2B. Current and Future Labor Demand  
for Animal Science**

<b>Occupation Title</b>	<b>Current Demand</b>			<b>Future Demand</b>	
	<b>2009 Estimated Employment</b>	<b>Current Occupations in Demand Indicator (5=high)</b>	<b>Job Vacancy Rate</b>	<b>2009- 2019 Percent Growth</b>	<b>2009- 2019 Average Annual Openings</b>
Animal Scientists	NA			0.0%	
Farm and Home Management Advisors	NA			0.0%	
First-Line Supervisors of Farming, Fishing, and Forestry Workers	179			8.9%	7
Regional Total - Animal Science	NA			NA	7
Statewide Total - Animal Science	984			-2.6%	968
Regional Total - All Occupations	250,094		2.2%	7.6%	7,509
Statewide Total - All Occupations	2,830,000		2.0%	13.0%	104,150

\*\*NOTE: NO DATA FOR TABLE 2C, RELATED EMPLOYMENT RATES FOR MNSCU GRADUATES  
IN ANIMAL SCIENCE, NORTHWEST MINNESOTA\*\*

**Table 2D. Number of Program Completers by Award Level, 2009-2010,  
for Animal Science**

<b>Program Title</b>	<b>Certificate</b>	<b>Associate</b>	<b>Bachelor's</b>	<b>Advanced Degree</b>	<b>Total</b>
Animal Sciences, General			9		9
Regional Total - Animal Science			9		9
Statewide Total - Animal Science			99	4	103

**Table 2E. Number of Program Completers by Award Level, 2009-2010,  
for Animal Science**

<b>Program Title</b>	<b>Certificate</b>	<b>Associate</b>	<b>Bachelor's</b>	<b>Advanced Degree</b>	<b>Total</b>
Animal Sciences, General			100.0%		100.0%
Regional Total - Animal Science			100.0%		100.0%
Statewide Total - Animal Science			96.1%	3.9%	100.0%

**TABLE 2F. Number of Awards Conferred by Institution, 2009-2010  
for Animal Science**

<b>Institution</b>	<b>Number of Awards Conferred</b>	<b>Percentage of Awards Conferred</b>
University of Minnesota-Crookston	9	100.0%
Regional Total - Animal Science	9	100.0%
Statewide Total - Animal Science	103	100.0%

## FARM BUSINESS OPERATION AND MANAGEMENT

**Table 3A. Education and Wages for  
Farm Business Operation and Management**

Occupation Title	Education Level	Median Wage
Agricultural and Food Science Technicians	Associate degree	\$13.91
Agricultural Equipment Operators		\$13.29
Animal Breeders	High school diploma or equivalent	
Farmers, Ranchers, and Other Agricultural Managers	High school diploma or equivalent	\$34.32
Farmworkers and Laborers, Crop, Nursery, and Greenhouse		\$10.32
Farmworkers, Farm, Ranch, and Aquacultural Animals		\$11.01
First-Line Supervisors of Farming, Fishing, and Forestry Workers	High school diploma or equivalent	\$18.13
Life, Physical, and Social Science Technicians, All Other	Associate degree	\$17.00
Sales Representative, Wholesale and Manufacturing, Technical and Scientific Products	Bachelor's degree	\$16.49
Soil and Plant Scientists	Bachelor's degree	\$27.03
Regional Average, All Occupations		\$14.85
Statewide Average, All Occupations		\$17.77

**Table 3B. Current and Future Labor Demand  
for Farm Business Operation and Management**

Occupation Title	Current Demand			Future Demand	
	2011 Estimated Employment	Current Occupations in Demand Indicator (5=high)	Job Vacancy Rate	2009- 2019 Percent Growth	2009- 2019 Average Annual Openings
Agricultural and Food Science Technicians	176			-7.4%	6
Agricultural Equipment Operators	NA			0.0%	
Animal Breeders	NA			0.0%	
Farmers, Ranchers, and Other Agricultural Managers	11,608			0.0%	
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	1,373			-0.6%	37
Farmworkers, Farm, Ranch, and Aquacultural Animals	NA			0.0%	
First-Line Supervisors of Farming, Fishing, and Forestry Workers	179			8.9%	7
Life, Physical, and Social Science Technicians, All Others	42			19.0%	3
Sales Representative, Wholesale and Manufacturing, Technical and Scientific Products	178	4-5		6.7%	5
Soil and Plant Scientists	52			17.3%	3
Regional Total - Farm Business Operation and Management	NA			1.2%	61
Statewide Total - Farm Business Operation and Management	72,995			0.5%	1,840
Regional Total - All Occupations	250,094		2.2%	7.6%	7,509
Statewide Total - All Occupations	2,830,000		2.0%	13.0%	104,150

**Table 3C. Related Employment Rate, by Program, 2010  
for Farm Business Operation and Management\***

<b>Program</b>	<b>Number of Awards Conferred</b>	<b>Share of Available Graduates Who Found Employment Related to Major</b>
Agricultural Production Operations, General	19	93.3%
Crop Production	**	**
Farm/Farm and Ranch Management	185	100.0%
Regional Total - Farm Business Operation and Management	205	98.7%
Statewide Total - Farm Business Operation and Management	412	99.2%
Regional Total - Agriculture, Agribusiness and Natural Resources	205	98.7%
Statewide Total - Agriculture, Agribusiness and Natural Resources	431	99.2%

\* Includes only graduates of Minnesota State Colleges and Universities system.

\*\* Too few awards to report.

**Table 3D. Number of Program Completers by Award Level, 2009-2010,  
for Farm Business Operation and Management**

<b>Program Title</b>	<b>Certificate</b>	<b>Associate</b>	<b>Bachelor's</b>	<b>Advanced Degree</b>	<b>Total</b>
Agribusiness/Agricultural Business Operations			9		9
Agricultural Business and Management, General			8		8
Agricultural Business and Management, Other	1				1
Agricultural Production Operations, General	19				19
Agriculture, General		2			2
Farm/Farm and Ranch Management	149	40			189
Horse Husbandry/Equine Science and Management			9		9
Regional Total - Farm Business Operation and Management	169	42	26		237
Statewide Total - Farm Business Operation and Management	218	196	60	14	488

**Table 3E. Number of Program Completers by Award Level, 2009-2010,  
for Farm Business Operation and Management**

<b>Program Title</b>	<b>Certificate</b>	<b>Associate</b>	<b>Bachelor's</b>	<b>Advanced Degree</b>	<b>Total</b>
Agribusiness/Agricultural Business Operations			100.0%		100.0%
Agricultural Business and Management, General			100.0%		100.0%
Agricultural Business and Management, Other	100.0%				100.0%
Agricultural Production Operations, General	100.0%				100.0%
Agriculture, General		100.0%			100.0%
Farm/Farm and Ranch Management	78.8%	21.2%			100.0%
Horse Husbandry/Equine Science and Management			100.0%		100.0%
Regional Total - Farm Business Operation and Management	71.3%	17.7%	11.0%		100.0%
Statewide Total - Farm Business Operation and Management	44.7%	40.2%	12.3%	2.9%	100.0%

**TABLE 3F. Number of Awards Conferred by Institution, 2009-2010  
for Farm Business Operation and Management**

<b>Institution</b>	<b>Number of Awards Conferred</b>	<b>Percentage of Awards Conferred</b>
Central Lakes College-Brainerd	40	16.9%
Northland Community and Technical College	169	71.3%
University of Minnesota-Crookston	28	11.8%
Regional Total - Farm Business Operation and Management	237	100.0%
Statewide Total - Farm Business Operation and Management	488	100.0%



**PLANT AND SOIL SCIENCE**

**Table 4A. Education and Wages for  
Plant and Soil Science**

<b>Occupation Title</b>	<b>Education Level</b>	<b>Median Wage</b>
Conservation Scientists	Bachelor's degree	\$31.69
Farmers, Ranchers, and Other Agricultural Managers	High school diploma or equivalent	\$34.32
First-Line Supervisors of Farming, Fishing, and Forestry Workers	High school diploma or equivalent	\$18.13
Life, Physical, and Social Science Technicians, All Other	Associate degree	\$17.00
Microbiologists	Bachelor's degree	
Soil and Plant Scientists	Bachelor's degree	\$27.03
Regional Average, All Occupations		\$14.85
Statewide Average, All Occupations		\$17.77

**Table 4B. Current and Future Labor Demand  
for Plant and Soil Science**

<b>Occupation Title</b>	<b>Current Demand</b>			<b>Future Demand</b>	
	<b>2009 Estimated Employment</b>	<b>Current Occupations in Demand Indicator (5=high)</b>	<b>Job Vacancy Rate</b>	<b>2009- 2019 Percent Growth</b>	<b>2009- 2019 Average Annual Openings</b>
Conservation Scientists	107			3.7%	1
First-Line Supervisors of Farming, Fishing, and Forestry Workers	179			8.9%	7
Life, Physical, and Social Science Technicians, All Others	42			19.0%	3
Microbiologists	NA			0.0%	
Soil and Plant Scientists	52			17.3%	3
Regional Total - Plant and Soil Science	NA			NA	14
Statewide Total - Plant and Soil Science	3,673			-2.1%	1,068
Regional Total - All Occupations	250,094		2.2%	7.6%	7,509
Statewide Total - All Occupations	2,830,000		2.0%	13.0%	104,150

\*\*NOTE: NO DATA FOR TABLE 3C, RELATED EMPLOYMENT RATES FOR MNSCU GRADUATES IN  
PLANT AND SOIL SCIENCE IN SOUTHWEST MINNESOTA\*\*

**Table 4D. Number of Program Completers by Award Level, 2009-2010,  
for Plant and Soil Science**

Program Title	Certificate	Associate	Bachelor's	Advanced Degree	Total
Agronomy and Crop Science			2		2
Horticultural Science			4		4
Regional Total - Plant and Soil Science			6		6
Statewide Total - Plant and Soil Science		6	33	21	60

**Table 4E. Percentage of Program Completers by Award Level, 2009-2010,  
for Plant and Soil Science**

Program Title	Certificate	Associate	Bachelor's	Advanced Degree	Total
Agronomy and Crop Science			100.0%		100.0%
Horticultural Science			100.0%		100.0%
Regional Total - Plant and Soil Science			100.0%		100.0%
Statewide Total - Plant and Soil Science		10.0%	55.0%	35.0%	100.0%

**TABLE 4F. Number of Awards Conferred by Institution, 2009-2010  
for Plant and Soil Science**

Institution	Number of Awards Conferred	Percentage of Awards Conferred
University of Minnesota-Crookston	6	100.0%
Regional Total - Plant and Soil Science	6	100.0%
Statewide Total - Plant and Soil Science	60	100.0%

**FOOD SCIENCE AND TECHNOLOGY**

**Table 5A. Education and Wages for  
Food Science and Technology**

<b>Occupation Title</b>	<b>Education Level</b>	<b>Median Wage</b>
Agricultural and Food Science Technicians	Associate degree	\$13.91
Agricultural Inspectors	Bachelor's degree	\$25.90
First-Line Supervisors of Farming, Fishing, and Forestry Worker	High school diploma or equivalent	\$18.13
Food Scientists and Technologists	Bachelor's degree	\$37.53
Plant and Systems Operators, All Other	High school diploma or equivalent	
Regional Average, All Occupations		\$14.85
Statewide Average, All Occupations		\$17.77

**Table 5B. Current and Future Labor Demand  
for Food Science and Technology**

<b>Occupation Title</b>	<b>Current Demand</b>			<b>Future Demand</b>	
	<b>2011 Estimated Employment</b>	<b>Current Occupations in Demand Indicator (5=high)</b>	<b>Job Vacancy Rate</b>	<b>2009- 2019 Percent Growth</b>	<b>2009- 2019 Average Annual Openings</b>
Agricultural and Food Science Technicians	176			-7.4%	60
Agricultural Inspectors	71			5.6%	24
First-Line Supervisors of Farming, Fishing, and Forestry	179		6.0%	8.9%	66
Food Scientists and Technologists	35			0.0%	10
Plant and Systems Operators, All Other	NA			0.0%	
Regional Total - Food Science	NA				160
Statewide Total - Food Science	3,244			7.1%	136
Regional Total - All Occupations	250,094		2.2%	7.6%	7,509
Statewide Total - All Occupations	2,830,000		2.0%	13.0%	104,150

NOTE: NO SUPPLY DATA FOR **FOOD SCIENCE AND TECHNOLOGY**  
AVAILABLE FOR NORTHWEST MINNESOTA.