

## Calculations

Calculations and measurements should only be considered as a general guide. Variations in data values may occur depending on growing and field conditions, seeding rates, and management practices. IntegraSeed Ltd. created this calculator as a tool and does not warrant the accuracy or completeness of the formulas within these calculations.

### **Corn, Soybeans & Sorghum**

$(\text{row length, ft.}) * (\text{row width, in.}) * (\text{no. or rows}) / 522,270 =$   
acres

### **Pasture, Small Grains \* Alfalfa**

$(\text{row length, ft.}) * (\text{width of harvest strip, ft.}) / 43,560 =$  acres

### **Corn - Grain**

$(100 - \text{harvest moisture}) * (\text{lbs. grain harvested}) * (110.465) /$   
 $(\text{row length, ft.}) / (\text{row width, in}) / (\text{no. rows harvested}) =$   
bu/acre of corn at 15.5% moisture

### **Corn - Silage**

$(100 - \text{actual \% silage moisture}) * (\text{green wt. silage, lbs/acre}) /$   
 $(30) =$  lbs/acre of silage adjusted to 70% moisture

### **Soybeans**

$(100 - \text{harvest moisture}) * (\text{lbs. grain harvested}) * (100.138) /$   
 $(\text{row length, ft.}) / (\text{row width, in}) / (\text{no. rows harvested}) =$   
bu/acre of soybeans at 13% moisture

### **Sorghum**

$(100 - \text{harvest moisture}) * (\text{lbs. grain harvested}) * (6078.14) /$   
 $(\text{row length, ft.}) / (\text{row width, in}) / (\text{no. rows harvested}) =$   
bu/acre of sorghum at 14% moisture

### **Sunflower**

$(100 - \text{harvest moisture}) * (\text{lbs. grain harvested}) * (5808) /$   
 $(\text{row length, ft.}) / (\text{row width, in}) / (\text{no. rows harvested}) =$   
lbs/acre of oil sunflower at 10% moisture

### **Rectangular or Square Fields**

Acres =  $(\text{Length, ft} * \text{Width, ft.}) / 43,560$

### **Triangular Fields**

Acres =  $(\text{Base, ft.} * \text{Height, ft.}) / 2 * 43,560$

### **Parallelogram (Opposite Sides Parallel)**

Acres =  $(\text{Base, ft.} * \text{Height, ft.}) / 43,560$

### **Trapezoid (Two Sides Parallel)**

Acres =  $((\text{A, ft.} + \text{B, ft.}) * (\text{Width, ft.})) / 2 * 43,560$

### **Corn - Estimate Yield**

Yield estimate for corn standing in the field: Take one ear and count number of kernels around (i.e. 14) x number of kernels length-wise (i.e. 32) x plant population (i.e. 24000) divide this number by kernel size. Use 80000 for small kernel, 70000 for large kernel and 90000 for very small kernels. Note: Do not use comma separator in numbers.

### **Adjusted Yield: Converting crop moisture to a common moisture**

Adjusted yield = [Yield (as harvested) x Dry Matter (as harvested)] / % Dry Matter Adjusted to

Example: Corn silage yield of 22 tons at 71% moisture. You want to determine the yield at 65% moisture.

$(22 \text{ tons} \times 0.29 \text{ dm}) / 0.35 \text{ dm} = 18.23 \text{ tons at } 65\% \text{ moisture}$

### **Calculating the yield of protein per acre on Corn Silage using Tons or Bushels**

$(\text{Dry Matter Yield}) / (\text{Acre of Corn Silage}) \times (\text{Percent of Protein}) = \text{Protein/Acre}$

Example: Corn silage yield of 22 tons/acre at 71% moisture.

You want to calculate the yield of Dry Matter Protein per acre.

The Dry Matter protein analysis was 7.2%

$[(22 \text{ tons} \times 0.29 \text{ dm}) / (1 \text{ dm})] \times 0.072 = 0.459 \text{ tons (918 pounds) of protein/acre}$

### **Calculating the yield of protein per acre on Corn Silage using Pounds**

In many, if not all cases, you should convert tons or bushels to pounds.

Example: The grain corn yield is 145 bushels/acre (56 pound test weight) at 15.5% moisture. You want to calculate the yield of Dry Matter Protein per acre. The Dry Matter protein analysis was 7.9% (145 bushels equals 8120 pounds).

$[(8120 \text{ lbs} \times 0.845 \text{ dm}) / 1 \text{ dm}] \times 0.079 = 542.1 \text{ pounds of protein/acre}$