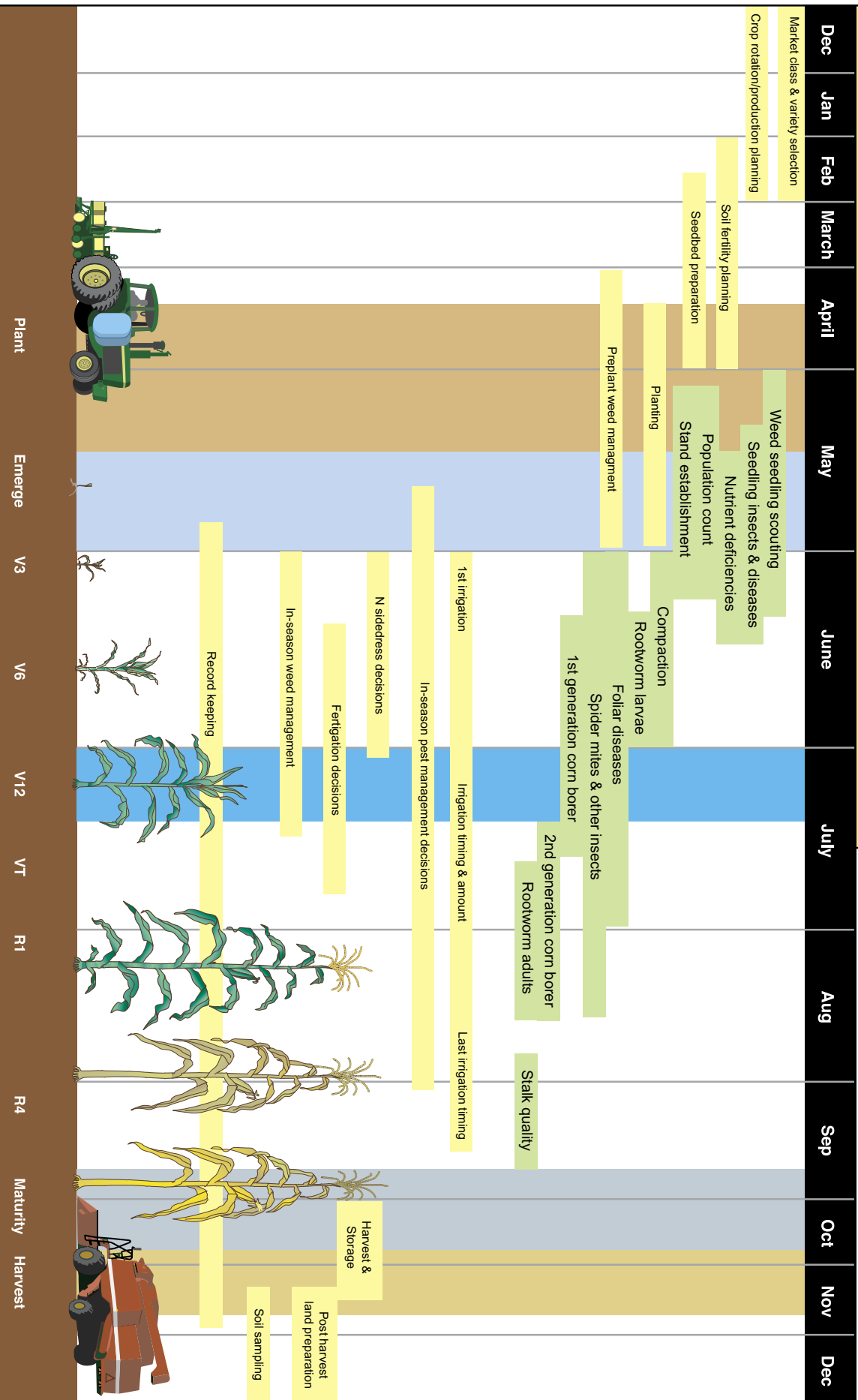


# Corn Production Calendar

**LEGEND**

- Scouting
- Management planning



# Useful Figures & Conversions

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## Useful Equivalents:

- 1 acre = 43,560 square feet
- 1 acre foot = 325,850 gallons
- 1 acre inch = 27,154 gallons
- 1 gallon of water = 3.785 liters
- 1 cubic foot = 7.48 gallons = 62.4 lbs. of water
- 1 cubic foot per second (cfs) = 450 gallons per minute = 1 acre inch per hour, or 2 acre feet in 24 hours.

## Sprayer Calibration

Calibration of your spraying equipment is important to insure application of the proper dosages. Sprayer calibration should be checked daily or whenever you change chemicals. Applying incorrect amounts may do more damage than good.

Adjustable factors which determine calibration and affect application rate are: speed, pressure, nozzle size and type, or a combination of the three. Speed is the easiest and most common adjustment.

## Three Calibration Methods

### Method I:

Where nozzle spacing = inches between nozzles. Speed = MPH x 88

Test several nozzles to ensure uniformity and replace any that have >10% variation from the average of all nozzles.

A. Measure nozzle flow rate: gal/nozzle/min =

$$\frac{\text{Ounces collected for 1 min from 1 nozzle}}{128}$$

B. Calculate gallons per acre =  $\frac{\text{gal/nozzle/min} \times 12 \times 43,560}{\text{nozzle spacing} \times \text{speed}}$

### Method II:

Spray 660 feet at the desired speed and pressure.

Determine the amount of spray discharge (water) traveling this distance.

Use this formula:

$$\text{gallons / acre} = \frac{\text{gallons used in 660 feet} \times 66}{\text{swath width in feet}}$$

### Method III:

Fill spray tank and spray a specified number of feet.

After spraying refill tank measuring the quantity of material needed for refilling.

Use this formula:  $\text{gallons / acre} = \frac{43,560 \times \text{gallons sprayed}}{\text{distance sprayed} \times \text{swath width (ft)}}$

# Useful Figures & Conversions

## Determining and Adjusting Grain and Silage Yields:

1. Determine acreage harvested.
2. Calculate pounds of dry matter = field weight x (1 - grain or silage moisture %)
3. Convert grain to 15.5% moisture: divide dry matter by 1 - 15.5% (0.845) or  
Convert silage to 70% moisture: divide dry matter by 1 - 70% (0.30)
4. For grain, divide acreage and test weight of 56 pounds per bushel.

**Example:** Total grain weight from 1.38 acre is 15,000 pounds at 22% kernel moisture (1 - 0.22 = 0.78), the yield is calculated as follows:

1. 15,000 pounds x 0.78 = 11,700 pounds dry matter
2. 11,700 pounds ÷ 0.845 = 13,846 pounds at 15.5% moisture
3. 13,846 pounds ÷ 56 pounds/bu = 247 bushels at 15.5% moisture
4. 247 bushels ÷ 1.38 acres = 179 bushels per acre at 15.5% moisture

### Useful corn facts and conversions

#### Test weight:

Test weight of corn determines the weight of a bushel volume (1.244 cubic feet) of grain.

Test weights determined on dry (15.5% moisture) corn can indicate whether the grain crop reached full maturity.

The standard test weight used to convert weight of grain to bushel (volume) is 56 lb/bushel (minimum for No. 1 corn).

The minimum test weight for USDA No. 2 corn is 54 pounds per bushel.

#### Seed facts:

Corn seed averages 1,360 seeds per pound or 68,000 in a 50 pound bag (somewhat hybrid and lot specific, always check the bag label).

Corn seed typically contains 76,160 seeds per bushel.

## Hail Damage Chart

Table 29. Corn yield reduction due to leaf removal (hail) at several growth stages. Note that the vegetative growth stages shown in this table are based upon the "hail adjustor's horizontal leaf method" and not the "collar method" described in this book. Rather than using the uppermost leaf collar, hail adjustors identify the uppermost leaf that is 40 to 50% exposed and whose tip points below the horizontal. Typically a given "horizontal leaf" growth stage will be 1 to 2 leaf stages greater than the collar method.

Growth Stage*	Leaf Area Destroyed									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
7 Leaf				1	2	4	5	6	8	9
10 Leaf			2	4	6	8	9	11	14	16
13 Leaf		1	3	6	10	13	17	22	28	34
16 Leaf	1	3	6	11	18	23	31	40	49	61
19-21 Leaf	3	6	11	18	27	38	51	64	79	96
Tassel	3	7	13	21	31	42	55	68	83	100
Blister	2	5	10	16	22	30	39	50	60	73
Milk	1	3	7	12	18	24	32	41	49	59
Soft Dough	1	2	4	8	12	17	23	29	35	41
Dent			2	4	7	10	14	17	20	23
Nearly Mature					1	3	5	6	7	8

\*Leaf stages from NCIS are one to two stages ahead of Iowa stages presented in book.

Source: National Crop Insurance Services Corn Loss Instructions.

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