

## Smart Farming: Using data to make on-farm decisions

### Agriculture Cycle

#### **What are the steps involved in growing crops?**

Farming is not just planting and harvesting crops. It involves many more steps. Farmers need to be accountants, financiers, agronomists, ecologists, engineers, marketers and more! Why is farming so complicated? New technologies have provided growers with more information (data) than ever before. Methods based on extensive research have evolved to help sustain the soil without loss of production capacity. But nature is rarely predictable. Farmers need to make decisions that will help them protect their livelihoods for the foreseeable future while staying profitable in the short term. What are some of the decisions farmers must make?

We have divided the multitude of decisions into several categories below.

#### **I. Pre-Planting**

- A. No till (spray down with an herbicide to kill cover crop) or conventional till (plow) to prepare soil (see **To Till or Not to Till**)
- B. Amendments/Additions to soil pre-planting (see **Nutrients; Nitrogen Cycle Model; Importance of Soil pH; Soil Charge Demonstration; and Soil Test Data**)
  - i. adjust nutrient levels
  - ii. adjust pH
- C. Choosing varieties (see **Which Should I Choose?**)
  - i. consider yield potential
  - ii. consider resistance to pests/weed pressure
  - iii. determine suitability for weather conditions

#### **II. Planting**

- A. Seeding rate (population) (see **Plant Population and Yield Potential**)
- B. Row spacing
- Optional*
- C. Inter-seeding between rows
- D. Areas to leave fallow/put into conservation

#### **III. Growth**

- A. Scouting (see **Herbicide Action and Aphid Population or Aphid Speed Scouting**)
  - i. Herbicide/pesticide applications

#### **IV. Pre-Harvest**

- A. Sell or store**

#### **V. Post-Harvest**

- A. cultivation technique (tillage method)
- B. cover crop planting

#### **VI. Repeat – farmers begin all over again for next year**

Throughout this unit, you will be asked to make some decisions and analyze the data that farmers use or collect using precision farming techniques. Using the Decision tracker, record your decisions and track the outcome.

\*This document may be reproduced for educational purposes, but it may not be reposted or distributed without crediting GrowNextGen and The Ohio Soybean Council and soybean checkoff.

