**PLNT 1213**
**Note outline**

## Seeds

Chapter 13

Objectives:

Know the definition of and parts of seeds
Describe quality factors associated with seeds
Calculate percent pure live seed
Know sources of agricultural seeds

A **seed** is a

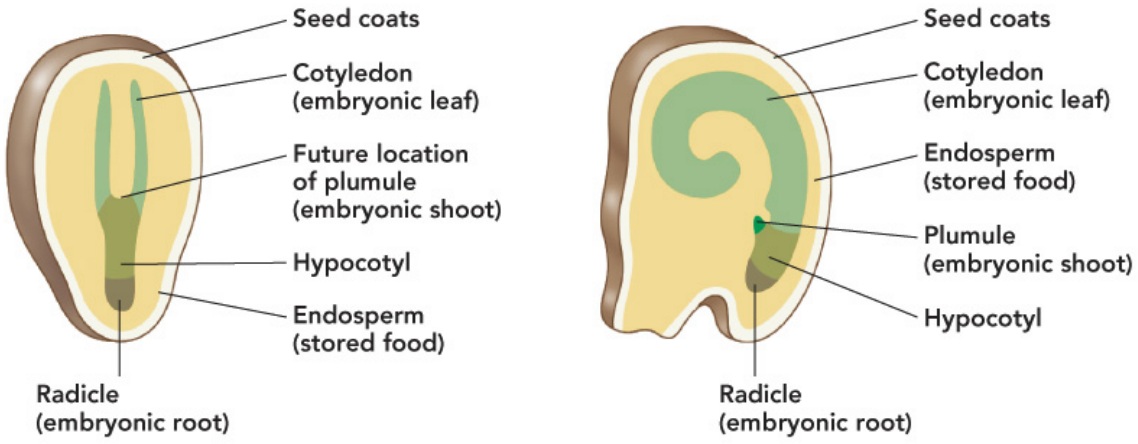
A seed consists of three main parts:

1.

2.

3.

An analogy for a seed is




(a) A dicot seed (lettuce)

(b) A monocot seed (onion)

1. _____ (the “baby plant”) consists of:
    1.
    2.
    3
    4.
2. _____ (the “lunch”)
3. _____ (the “box”)

**Seed selection**.

A grower should choose seed that is:

1..

2..

3..

**Species selection**

A grower must consider what will be _____ in the area.

A grower must consider what is _____ to the area.

**Variety selection**

A grower must consider many factors:

**Seed quality**

Planting seed of high quality is critical because it is an indication of the potential of the seed to develop into a _____.

Seed quality is a product of:

1.

2.

3.

4

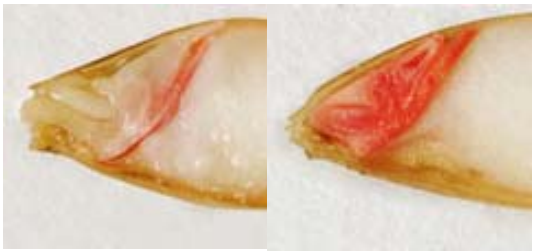
5.

6.

1. _____

Germination:

Tests:



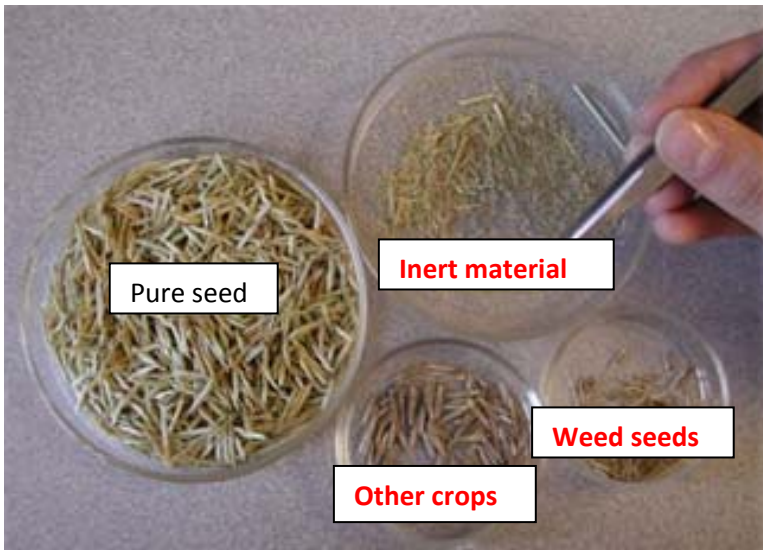
Dormancy:

Scarification:

Stratification:

2. _____

3. _____




Pure live seed

Example:
You are training to be a seed analyst working for the Oklahoma Crop Improvement Association, and you've been assigned the task of labeling bags of certified wheat seed that will be sold this fall. Your supervisor has given you the following data for a lot of seed that was harvested near Enid, OK:

Rolled towel germination: 48/50 seeds
Inert material: 1.6 g in a 500 g sample
Other crop seed: 4.3 g in a 500 g sample
Weed seeds: 5.1 g in a 500 g sample

When you make the labels for these bags of seed, what will you record as the PLS?

Answer:

% germination =

% purity =

PLS =

4. _____

   Prohibited noxious weeds

   Restricted noxious weeds

   Common weeds

5. _____

6. _____

**Sources of agricultural seed**

1.

2.

3.

**Seeding**
Chapter 13
**Objectives:**
Understand factors that influence seeding variables
Calculate the number of seeds needed to plant a given acreage
Know the implements that are used in seeding

Most field crops are direct seeded. This means

**Planting dates**

The time of planting is determined by:

1.

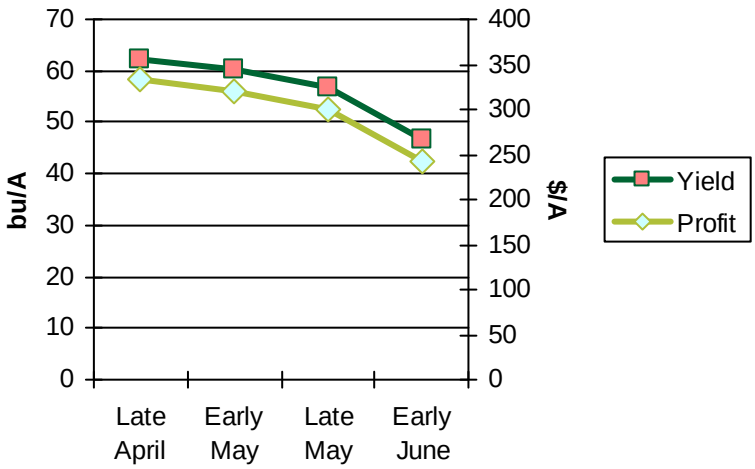
2.

3.

4.

Planting time influences the crop yield and profit!

Soybean yield response to planting date
J.L. DeBruin and P. Pedersen, 2008



**Planting depth**

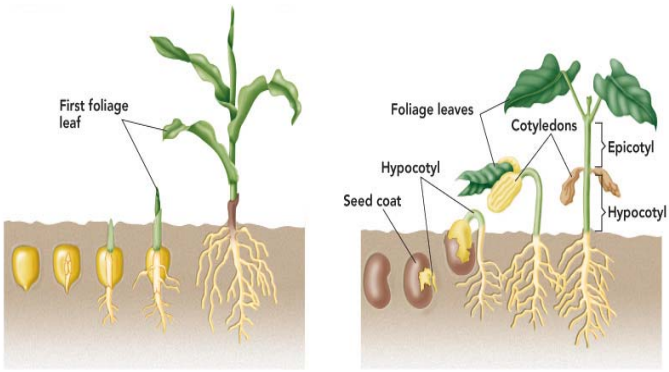
Planting seed at an improper depth can cause poor emergence - even seed of high quality have been planted.

Proper planting depth is influenced by:

1.

| Crop | Seed size | Normal depth |
|---|---|---|
| | (# per pound) | (inches) |
| white clover, tobacco | 300,000 – 5,000,000 | 0.25 – 0.50 |
| alfalfa, turnip | 150,000 – 300,000 | 0.50 – 0.75 |
| sudangrass, beet | 50,000 – 150, 000 | 0.75 – 1.50 |
| wheat, sorghum | 10,000 – 50,000 | 1.50 – 2.0 |
| corn, cotton, pea | 400 – 10,000 | 2.0 – 3.0 |
| potato | 4 – 20 pieces | 4.0 – 5.0 |

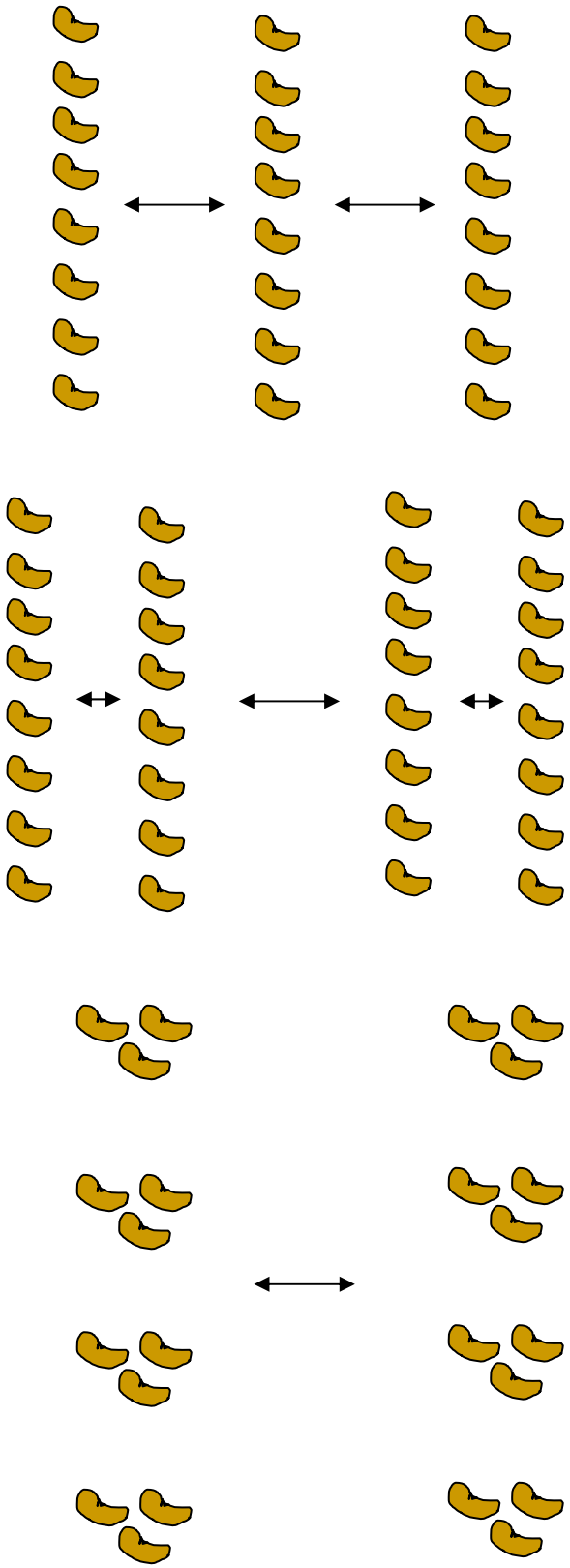
2.



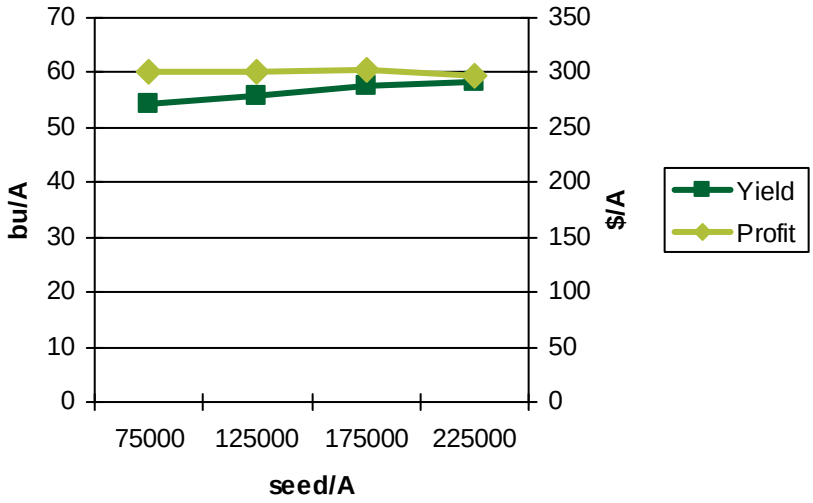

3

**Planting pattern**

The arrangement in which the seeds are placed in the field.



## Seeding rate




| Seeding rates for selected crops | | | | |
|---|---|---|---|---|
| | dryland production | | irrigated production | |
| | lbs/A | plants/A | lbs/A | plants/A |
| **Alfalfa** | 5 | 300,000 | 20 | 1,000,000 |
| **Corn** | 10 | 13,000 | 20 | 26,000 |
| **Cotton** | 15 | 50, 000 | 30 | 100,000 |
| **Peanut** | 20 | 20,000 | 40 | 40,000 |
| **Sorghum** | 2 | 40,000 | 6 | 120,000 |
| **Soybean** | 15 | 60, 000 | 30 | 120,000 |
| **Wheat** | 30 | 500, 000 | 120 | 2,000,000 |

### Calculating seeding rates

**# seeds = (desired population)/[(% germination)(%purity)]**

Example:
You are planting wheat and desire a target population of 100,000 plants per acre. You are going to purchase seed with a 97% germination rate and 96% purity. How many seeds will you need to plant in order to have a final stand of approximately 100,000 plants per acre?

seeding rate = 100,000/[(.97)(.96)] = 107,388 seeds per acre

**pounds = {(desired population)/[(% germination)(%purity)]}/seeds per pound**

Example:
Given the number just calculated, how many 50 pound bags of wheat seed do you need to purchase to plant 75 acres?
Hint: there are approximately 15,000 seeds per pound of wheat

seeding rate = (107,388)/15,000 = 7.2 pounds per acre

pounds = [(7.2)(75)]/50 = 11 bags

Calibration (you'll have more experience in PLNT 2013!)

## Planting implements

Broadcast spreader

Drill

Planter

Advantages of a drill or planter over broadcast seeding: