

Name: _____

Germination

Use the Internet or other available resources to answer questions 1-4.

1. Define germination.
2. Define germination rate.
3. What are four factors that help corn germination?
4. How long does it generally take for a corn seed to germinate?

Use a calculator to find the answers for questions 5-15.

5. Find the germination rate: 26,000 plants germinate out of the 30,000 planted.
6. Find the germination rate: 18,500 plants germinate out of the 20,000 planted.
7. Find the germination rate: 33,250 plants germinate out of the 35,000 planted.
8. Find the germination rate: 28,000 plants germinate out of the 30,000 planted.

Germination

9. If a farmer plants 260 acres of corn at 30,000 plant population per acre and the germination rate for corn is 85 percent, how many total corn plants will grow?
10. If you plant 32,000 seeds, how many will germinate if the variety you use has a germination rate of 84 percent?
11. If the variety of corn you are planting has a 90 percent germination rate and you plant 32,000 seeds per acre, how many will sprout?
12. How many seeds with a germination rate of 85 percent does a farmer need to plant per acre if they hope to achieve 30,000 plant population?
13. In southwest Kansas, Steve irrigates his corn. He hopes to get 32,000 plant population per acre. The variety of corn he plants has 85 percent germination rate. How many seeds does he need to plant per acre to achieve his goal?
14. Brad, a corn farmer in northeast Kansas, wants his farm to have 30,000 plant population per acre. If the germination rate for the variety of corn he plants is 86 percent, how many plants should he plant to ensure he reaches 30,000?
15. Now Brad is thinking about his entire 4,200 acre farm. How many total seeds does he need to plant on his farm to ensure he has 30,000 plant population per acre?

Germination

Use the Internet or other available resources to answer questions 1-4.

1. Define germination. **Development of a plant from a seed or spore after a period of dormancy**
2. Define germination rate. **Estimate of the viability of seeds.**
3. What are four factors that help corn germination? **Moisture, temperature, oxygen and light or absence of light.**
4. How long does it generally take for a corn seed to germinate? **10-14 days**

Use a calculator to find the answers for questions 5-15.

5. Find the germination rate: 26,000 plants germinate out of the 30,000 planted.
 $(26,000/30,000) = 86.67\%$
6. Find the germination rate: 18,500 plants germinate out of the 20,000 planted.
92.5%
7. Find the germination rate: 33,250 plants germinate out of the 35,000 planted.
95%
8. Find the germination rate: 28,000 plants germinate out of the 30,000 planted.
93.3%

Germination

9. If a farmer plants 260 acres of corn at 30,000 plant population per acre and the germination rate for corn is 85 percent, how many total corn plants will grow?

$$(260 \times 30,000) \times .85 = 6,630,000$$

10. If you plant 32,000 seeds, how many will germinate if the variety you use has a germination rate of 84 percent?

26,880 seeds will germinate

11. If the variety of corn you are planting has a 90 percent germination rate and you plant 32,000 seeds per acre, how many will sprout?

28,800 seeds will germinate

12. How many seeds with a germination rate of 85 percent does a farmer need to plant per acre if they hope to achieve 30,000 plant population? $\frac{85 \times 32,000}{100}$

35,295 seeds would need to be planted

13. In southwest Kansas, Steve irrigates his corn. He hopes to get 32,000 plant population per acre. The variety of corn he plants has 85 percent germination rate. How many seeds does he need to plant per acre to achieve his goal?

37,647 seeds would need to be planted

14. Brad, a corn farmer in northeast Kansas, wants his farm to have 30,000 plant population per acre. If the germination rate for the variety of corn he plants is 86 percent, how many plants should he plant to ensure he reaches 30,000?

34,883 seeds would need to be planted.

15. Now Brad is thinking about his entire 4,200 acre farm. How many total seeds does he need to plant on his farm to ensure he has 30,000 plant population per acre?

$$(34,883 \text{ seeds} \times 4,200 \text{ acres}) = 146,508,600 \text{ seeds}$$