Name: _____

CASE

Activity 7.4.5 Best Buds

Purpose

Budding is a smaller scale of the grafting procedure. Because it uses less plant material than a typical graft, an individual stem can support more grafts. However, with the advantages there are disadvantages to be aware of. Budding may be harder to do and has a lower success rate unless you have perfected the skill.

How is budding different than other asexual propagation methods? What benefits exist for producers?

Materials

Per pair of students:

- Grafting knife
- *Plant and Soil Science: Fundamentals and Applications* textbook

Per student:

- Fruit tree sapwood
- Nitrile gloves
- Rubber budding tie
- Pencil
- *Agriscience Notebook*

Procedure

You will be observing the teacher performing chip budding and T-budding procedures. Pay close attention to your teacher's instruction during the demonstration of this procedure so you are aware of the safety concerns. During the demonstration, take careful notes to refer to during your opportunity to try the procedures.

In addition, review pages 361-362 of *Plant and Soil Science: Fundamentals and Applications* for more information.

Part One – Teacher Demonstration

1. Review safety procedures necessary for success in budding. Complete Table 1 on the student worksheet prior to your teacher's demonstrations.

2. Complete Table 2 listing the steps for chip budding as demonstrated by your teacher. In addition to the steps, you will record the key points for the each step. A key point may include critical information to remember when conducting the procedure. This could be safety related concerns, materials used in the step, or what to look for as an indicator you are doing it correctly.
3. Complete Table 3 listing the steps and key points for T-budding as demonstrated by your teacher.

Part Two – Budding Practice

1. Follow the steps and key points you outlined above for each method. You and a partner will do your own grafts. Monitor the technique of each other to ensure you are both demonstrating safely.
2. Make observations in Table 4.
3. Once finished with both procedures, present your work to your teacher for evaluation.

Conclusion

1. What is the purpose of budding and when is budding used?

4. How does the grafted bud survive while being established into the rootstock plant?

5. What are some safety concerns when performing budding methods?

Name: _____

Activity 7.4.5 Student Worksheet

Table 1. ***Safety Practices for Budding***

Tool/Equipment	Potential Hazards	Proper Usage	Safety Precautions
Grafting Knife	Cutting Instrument	Cut away from self on flat plane	Keep finger clear

Table 2. ***Steps and Key Points for Chip Budding***

Steps involved in chip budding:	The key point to remember when performing the step:
1. Sterilize knife	Prevent diseases
2. Cut small chip out of main branch	Growth point
3. Cut small bud out of desired plant	Bud
4. Line up cambium layers on the two cutting	aliginment
5. Attach the two buds by rubber band or wax	attach
6.	

7.	

Table 3. ***Steps and Key Points for T-budding***

Steps involved in T-Budding:	The key point to remember when performing the step:
1. Sterilize knife	Disease control
2. Cut a lateral line in the seed stock Cut a T at the top of the lateral line just into the cambium layer Cut a T at the top of the lateral line just into the cambium layer Easily peel back the skin of the plant	Short line
3. Remove bud from desired plant	Cambium layer
4. Line up cambium layers and attach with rubber band or wax	Line-up cambium layers

Table 4. ***Budding Observations***

Upon completion of each section, you should make notes regarding what you notice.	
Chip Budding	**T-budding**
