Name: ____Tracy Brown_____

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?

To be able to graft in a budding area, during growing season

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

Matching vascular tissues so that water/nutrient & food can be transported to the grafted bud

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

Tools, insects, Bailey's tears.

Name: ____Tracy Brown_____

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	Proper handling of grafting knife- demonstration

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 grafting knife	Kill bacteria
2. remove bud	Do not cut to deep into vascular tissue
3. remove similar sized bud	So that the vascular tissue has a better chance of matching up
4.match up chip with bud scar	Be sure to match up vascular tissue as best as possible
5.wrap with rubber band above and below petiole to secure chip cutting in place	Secure rubber band- tie in knot to hold in place
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 grafting knife	Remove bacteria
2. Cut 1-1.5 inch lengthwise down the stem	Keep cut shallow- just beow the first layer of epidermis
3. Cut across top of previous cut	Do not girdle the branch
4. Cut above and below a bud, remove but with shallow cut	Do not take to deep a cutting
5. Slip bud into T cut	Fold skin over cutting
6. Secure bud in place with rubber band	Be sure to tie to keep T-bud in place

Table 4. ***Budding Observations***

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

Making sure the scion and rootstock are similar sizes Tying rubber band with one hand is challenging	Don’t’ cut to deep on the ‘T’ part, be careful not to rip the epidermis when opening up the T Cut the bud to be a similar size to what you opened with the ‘T’ Tying the rubber band with one hand is challenging