

Row-Type Practices - Alley Cropping, Windbreak

1. First, save and print out the XCEL spreadsheet tree worksheet that you will use to record your tree inventory. If you will be recording trunk measurements using a diameter-tape, use the Diameter worksheet. If you are measuring trunk circumference with a regular tape, use the Circumference worksheet instead. Assemble the tools you'll need:

- * measuring tape
- * diameter tape (if measuring diameter rather than circumference)

2. How uniform is the site? If another portion of the alley cropping or windbreak has a different design or species, e.g. number of rows, spacing between trees or rows, then you will need to treat that portion as a separate parcel for purposes of carbon storage estimation.

3. Within a uniform parcel, pick a representative segment within each row, assuming the same species are planted in the row. Make sure it contains at least 12 trees. If you have a row with more than one tree species, sample only one species at a time and treat as separate rows for length. Avoid segments with many dead or dying trees.

4. Record the tree species in the row

5. Choose a "start" tree.

6. Measure and record the lineal distance to the next tree in the row. Use a measuring tape rather than pacing.

7. Measure and record the diameter or circumference of the tree's trunk in inches at 4.5 feet above the ground, rounded to the nearest whole inch.

8. Repeat steps 5 and 6 until you have measured 10 trees in the row. Don't measure dead or obviously weak trees.

9. For windbreaks, record the total distance in feet of the row you sampled. You can use a tape measure, scaled map, aerial photo, or a mapping program such as Google Earth or Terra Server to determine row lengths (click on the more text, for the links to these sites). If the row continues around a corner, add the length of both legs. For alley cropping, use the number of trees planted per acre instead, if you know it. Subtract the length of any segments with dead or dying trees from the total length of the row.

10. Repeat steps 3-9 for the next row and continue until all rows are sampled.

11. Measure and record the distance(s) between adjacent rows of trees that you sampled. If the adjacent row is a shrub row, measure to the next tree row.

12. After the field inventory is completed, open the worksheet in Excel and enter your data. It will automatically calculate average diameters for each species. If you don't use Excel, add the tree-to-tree distances and the trunk diameter or circumference measurements for all ten trees and divide by ten to give the average values for each species. If circumference was measured, multiply the average by 0.318 to give average diameter. Save the worksheet.