Problems with Apples

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Q. We have had two questions related to growing apples this past week. The first reader asks why their Gala apples are not turning read even though they taste ripe. The second reader asks why their apple tree does not have fruit.

A. Several things can affect apple skin color, including watering practices and fertilization, but the most likely culprit is our relatively high night time temperatures. When they're too high, the trees' respiration works overtime, and this can rob the fruit of some sugar content and weight, as well as color. Studies have shown that the difference between day and night temperatures is decreasing, but the home orchardist will probably most notice changes from year to year thanks to normal temperature fluctuations. Now you understand why regions with cold autumn nights – Upstate New York and eastern Washington State, for instance – are most famous for their apples.
Now as to why trees fail to produce fruit, this is a common and frustrating problem for many backyard fruit growers. So, for those of you whose trees fail to bloom or bear, here are the most common reasons why your trees do not bear fruit:
1. Age of your tree: depending on the type of tree, it can take from two to five years to produce fruit. For the purposes of determining when you should expect fruit, count the years from the month you planted the tree in the ground.
2. Climate and Weather: most fruit trees require a certain amount of cold weather (chill hours) to produce fruit. When winter temperatures are too mild, the tree may not get enough chill hours to allow the tree to break dormancy and flower. The required number of chill hours will vary by variety of apple tree. We are also prone to late spring frosts, hail or heavy rain that can damage flowers on the tree. If the damage is severe, the tree will not produce fruit.
3. Over- fertilization: heavy application of fertilizer will stimulate excessive green growth, at the expense of flowers. If your fruit tree is planted in the middle or the edge of your lawn, or close to other ornamental plants, remember that whenever you apply fertilizer to these plants you are also fertilizing your fruit trees.
4. Pruning Practices: either not pruning your trees at the appropriate time of year, or over pruning your tree, can cause your trees to not produce fruit. In general, heading cuts (the removal of a portion of the branch) will stimulate more vegetative (leafy) growth and delay flowering. Extreme heading cuts can totally prevent flowering and therefore your tree will not produce any fruit the following season. Thinning cuts (removing the branch back to the point where the branch grows out of the tree) will encourage more flower production.
5. Poor Pollination: In order for trees to bear fruit the flowers of the tree must receive healthy pollen at the correct time. Since insect pollinators (such as bees) are the main method of transferring pollen, anything that interferes with their activity, such as rain, hail, wind, cold weather, or application of insecticides will reduce pollination. Some trees cannot produce fruit from their own pollen and require cross pollination from another variety of tree. Trees requiring cross pollination should be planted close to the trees that produce pollen that will allow the tree to produce fruit. In addition, the bloom periods (when the tree produces flowers with pollen) must overlap to allow for cross pollination.

For more information about growing apples check out the University of Illinois webpage.
https://extension.illinois.edu/apples/intro.cfm