



Our "Roasting by the Senses" chart on the opposite side of this card gives you a rundown of the sensory cues during the roasting process. Here's a little more information of what you are seeing and hearing.

During the drying and yellowing stages water evaporates from the beans, emitting aromatic steam that can smell like hay and grass. Browning processes begin, starting with the Maillard reaction (a chain of reactions among amino acids and degrading sugars), followed by sugar caramelization, which continues throughout the roasting process.

First Crack happens as water and gas pressure build up and violently break the cell walls inside the bean, causing a loud popping noise. You can see the beans expand and chaff starts to slough off. At this point an exothermic reaction occurs, meaning the beans are producing rather than absorbing heat.

Caramelization continues, with water coming free from the sugar molecules, oxidizing and darkening. Caramelized sugars are more aromatic but often less sweet on the palate than intact sugars. Roasting further brings the beans to Second Crack, where the cells break down even further, emitting a snapping sound and allowing the oils to migrate to the exterior of the bean. The woody structure of the bean starts to carbonize as the roast progresses, making the beans brittle in texture and smoky in flavor.