

Does Peanut Maturity Impact Roasting Chemistry?

M. SCHOLTEN*, C. LIEBOLD, The J.M. Smucker Company, 767 Winchester Rd., Lexington, KY 40505 and J.A. MARSHALL, The Department of Chemistry and Biochemistry, Lubbock Christian University, Lubbock TX 79407.

A Gerstel TDU (Thermal Desorption Unit) was used to roast two different runner peanut maturity samples (orange and black pod) and subsequently analyze the formation of volatile compounds in real time using GC/MS. The data collected from these experiments tracked 15 different volatile compounds formed during the roasting process and calculations were made to determine relative rates of formation for these compounds. When roasting temperatures were increased from 190 °C to 200 °C the mature peanut samples formed significantly more pyrazines (roasted peanut positive compounds) than immature peanuts. The Q_{10} (ratio of reactions rates at the two temperatures) for pyrazines formed during the roasting of mature peanuts was 80% higher than found when roasting immature peanuts. These results suggest that peanut maturity is critical to maximizing roasted peanut flavor.