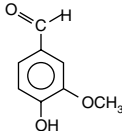
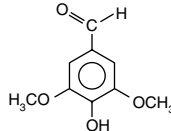
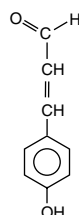
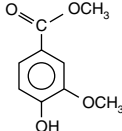
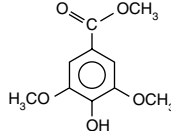
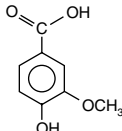
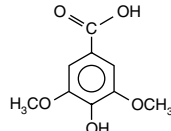
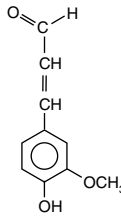


	Vanillyl phenols	Syringyl phenols	Cinnamyl phenols
Aldehydes	 Vanillin	 Syringaldehyde	 <i>p</i> -Coumaric acid
Ketones	 Acetovanillin	 Acetosyringone	
Acids	 Vanillic acid	 Syringic acid	 Ferulic acid

**Figure 8.17.** High-temperature cupric oxide (CuO) oxidation of vascular plant lignins yields the eight simple phenols illustrated here as major reaction products. These reaction products comprise monomethoxylated (vanillyl) and dimethoxylated (syringyl) phenols, which occur primarily as aldehydes, along with smaller amounts of the corresponding ketones and acids. Two cinnamyl phenols (*p*-coumaric and ferulic acid) are also produced that retain the three-carbon side chain of the original structural units and terminate in a carboxyl.