based on soil radionuclide concentrations. Equation 2.6, obtained from Section 5 (Equation 5.5) of NUREG/CR-5512, will be used to calculate vegetable concentration factors as follows:

$$C_{svhj} = 1000\left(ML_v + B_{JV}\right)W_v \ \{AC_{sj}, t_{gv}\}/C_{sj} \qquad \text{(Equation 2.6)}$$

Where:

C_{svhj} = concentration factor for radionuclide j in plant v at harvest from an initial unit concentration of parent radionuclide i in soil (pCi/kg wet-weight plant per pCi/g dry-weight soil)

B_{JV} = concentration factor for uptake of radionuclide j from the soil in plant v (pCi/kg dry-weight plant per pCi/g dry-weight soil)

ML_v = plant soil mass-loading factor for resuspension of soil to plant v (pCi/kg dry-weight plant per pCi/g dry-weight soil)

W_v = dry to wet-weight conversion factor (unitless)

$\{AC_{sj}, t_{gv}\}$ = decay operator notation used to develop the concentration of radionuclide j in soil at the end of the crop growing period t_{gv} (pCi/g dry-weight)

C_{sj} = concentration of radionuclide j in soil during the growing period (pCi/g dry-weight)

$C_{sj}(0)$ = initial concentration of radionuclide j in soil during the growing period (pCi/g dry-weight)

t_{gv} = growing period for food crop (d)

1000 = unit conversion factor (g/kg)

The radionuclides recommended for analysis in vegetation in RG 4.14 are natural uranium, thorium-230, radium-226, lead-210, and polonium-210. These radionuclides, with the exception of polonium-210, have long half-lives when compared to the growing season; therefore, the decay correction during the growing season can be ignored for these parameters. For polonium-210, the initial soil concentration and soil concentration during the growing season will be assumed identical. This assumption will allow simplification of Equation 2.6 to Equation 2.7.

$$C_{svhj} = 1000\left(ML_v + B_{JV}\right)W_v \qquad \text{(Equation 2.7)}$$

Table 2.9-21 presents the parameters that will be used to estimate wet-weight vegetable concentrations from dry-weight soil concentrations.