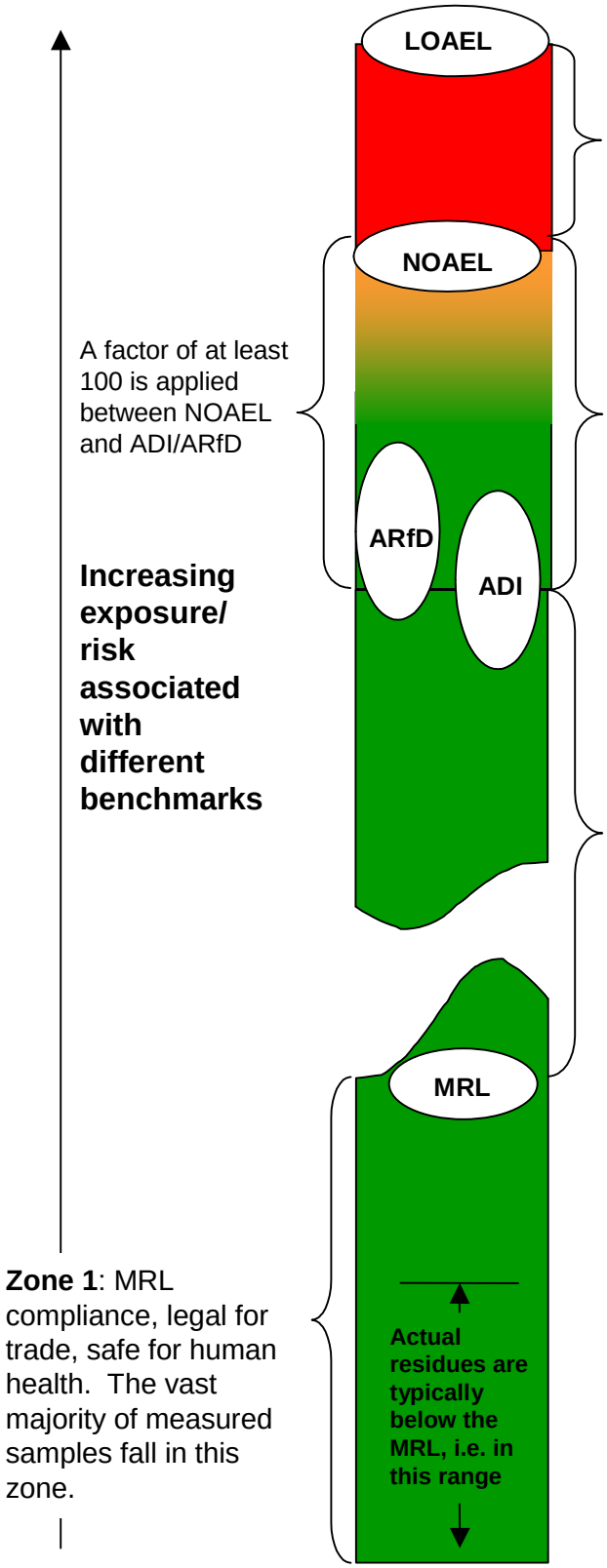
Simplified Schematic Showing the Wide Safety Margins Used in the MRL Setting Process



Zone 4: NOAEL is exceeded, meaning there is a human health concern. Immediate steps to prevent the sale of the crop/commodity have to be taken.

Zone 3: ADI and/or ARfD are significantly exceeded, meaning there may be a human health concern. Given the safety margins incorporated into the ADI and ARfD, case-by-case assessment is appropriate, and if necessary steps to prevent the sale of the crop/commodity should be taken.

Zone 2: MRL exceedance, not legal for trade but safe for human health. Case-by-case analysis and appropriate steps to ensure future compliance with MRLs should be undertaken.

Zone 1: MRL compliance, legal for trade, safe for human health. The vast majority of measured samples fall in this zone.

Explanations:

MRL: Maximum Residue Level (Maximum contents of a pesticide residue to be legally permitted in or on food commodities)

ADI: Acceptable Daily Intake (Estimate of the amount of a substance in food, which can be ingested daily over a lifetime by humans without appreciable health risk)

ARfD: Acute Reference Dose (Estimate of the amount of a substance in food, which can be ingested in a single meal by humans without appreciable health risk)

NOAEL: No Observable Adverse Effect Level (The greatest concentration of an agent, that causes no detectable adverse alteration of morphology, functional capacity, growth, development or lifespan of the target.

LOAEL: Lowest Observable Adverse Effect Level (similar to NOAEL, but where an effect is seen)