



**FIGURE 14.4.** Under the threshold model, survival depends on an underlying normally distributed trait. (*Top*) Suppose that individual insects vary in the threshold dose of an insecticide. Thus, individuals with a threshold below the actual dose die (*shaded areas*). In this example, the population on the left has a distribution of thresholds that is lower, and so 97.7% die (*blue*); the right-hand population has generally higher thresholds, and so only 16% die (*red*). (*Bottom*) When survival is plotted against dose for these two populations, a characteristic sigmoid curve is seen. The *dashed line* shows the dose given in the *top* panel.