Figure 2.5  Relationship between light environment and seedling survival six months after outplanting at three pairs of forest and pasture plots in Siete Colinas, Coto Brus, Costa Rica. Values above bars indicate mortality rate within each light class. Light levels: Low = 0-33%, Int = 34-66%, High = 67-99% of pasture PAR at mid-day. Forest seedling mortality decreased with increasing light availability (Logistic regression: $\chi^2_{1,295} = 28.18, P < 0.0001$).
Figure 2.6 Mean daily relative humidity, and mean daily minima and maxima, in forest and pasture at the three study sites in Siete Colinas, Coto Brus, Costa Rica during the dry ($n = 47$) and wet ($n = 15-17$) seasons.
relative humidity typically declined to 41% at mid-day in pasture but failed to drop below 80% in the forest (Figure 2.6; $F_{1,122} = 4.97$, $P = 0.0276$).

**Nutrient and mycorrhizal colonization differences between soils**

Extractable quantities of the majority of plant nutrients did not differ between forest and pasture soils (Table 2.2). However, nitrogen was lower in pasture soil than forest soil. Extractable phosphorus was below detectable levels in all pasture soil samples and in 90% of forest soil samples. While phosphorus was extremely low in both soil types, there may have been slightly more available phosphorus in forest soil than pasture soil. Extractable aluminum was higher in pasture than forest during the wet season (at $\alpha = 0.1$).

Colonization of *T. amazonia* seedlings by AM fungi differed between habitats and soil inocula. Ten days prior to outplanting, a higher percentage of roots were colonized by AM fungi in seedlings germinated in forest soil (51%) than in pasture soil (35%; $F_{1,52} = 7.09$, $P = 0.0103$; Figure 2.7a). After five months of growth under field conditions, there was no difference in root colonization between seedlings inoculated with forest and pasture soil ($F_{1,61} = 0.94$, $P = 0.3373$; Figure 2.7b). The percentage of roots colonized by AM fungi was lower for seedlings planted into forest (63%) than into pasture (78%) ($F_{1,61} = 11.99$, $P = 0.0010$; Figure 2.7b). There was also an interaction of habitat with soil inoculum: percentage of roots colonized by AM fungi was lower in forest (57%) than in pasture (80%) for seedlings inoculated with forest soil, but did not differ between forest and pasture for seedlings inoculated with pasture soil ($F_{1,61} = 5.05$, $P = 0.0282$; Figure 2.7b).