

Appendix 1

Species-specific study designs

Cordia alliodora – In early July 2007, twelve experimental blocks of six 0.25-m² plots were set up in the vicinity of four fruiting tree individuals (three blocks per tree). Seedling densities were very high near all trees. In each block, we counted the number of seedlings in the subplots that were to be assigned as ‘high density’ plots. The lowest seedling density found in any of these plots was set to be the treatment level for high density plots in that particular block. Seedlings in the remaining two high density plots were thinned to this level. In ‘low density plots’, seedlings were thinned to 25 per plot. In each plot (high and low density plots) we tagged 25 focal seedlings. If seedlings died, we tagged new seedlings as replacements. Since there was no insect exclusion treatment, the six plots within each block were treated with Ridomil®, Amistar®, and water (each applied to one high and one low density plot). Treatments were applied weekly throughout a period of six weeks and seedlings recensused weekly (on five occasions between 12 July and 8 August). At each census, the numbers of seedlings still alive were assessed.

Terminalia amazonia – In April 2008 six blocks of six 1-m² plots were set up under a fruiting *T. amazonia* adult close to the field station. In early May the leaf litter – including freshly dispersed seeds – was removed from all plots. In the high-density plots, the litter was returned to the original plots without further treatment. In the low-density plots, a quarter of the litter (measured by plot area) was immediately returned and spread evenly over the plot area. The remainder was taken to the laboratory where *T. amazonia* seeds were removed. The litter was then returned to the original plot and the seeds spread evenly over the high-density plot with the same pesticide treatment. Thus, the high-density plots are expected to have had roughly seven times the number of seeds as the low-density ones. Pesticide treatments (applied weekly) were initiated immediately following the density manipulations. Germinating seedlings were first observed in mid-June, and the plots were monitored for dead, diseased, and newly recruited seedlings weekly between 22 June and 26 July. To keep track of dead seedlings and new recruits, all seedlings were marked with toothpicks.

Cedrela odorata – In late June 2008 we established two blocks of six 1-m² plots at each of three fruiting *C. odorata* individuals. Within each block, the plots were randomly assigned to combinations of density (high or low) and pesticide (fungicide, insecticide and control) treatments. In the high-density plots the numbers of seedlings were recorded. In the low-density plots all but 16 seedlings, located evenly over the plot area, were uprooted and removed. All seedlings were marked with toothpicks at the start of the experiment in early July. Pesticide treatments were applied weekly, and the plots were monitored for dead, diseased, and newly recruited seedlings weekly until 4 August 2008.

Cryosophila stauracantha – On 21 July 2008 one block (i.e. six 1-m² plots) was established close to each of six fruiting tree individuals, avoiding areas into which additional seed input seemed likely. Seeds to be deposited in the experimental plots were collected from the ground and by cutting down mature infructescences from other trees. Seeds collected at different locations were thoroughly mixed. In low density plots, 49 seeds were arranged in a regular grid (7 × 7 seeds) within the plot, held in place by triplets of toothpicks. In high density plots, we first arranged 49 focal seeds in a similar way and then added more seeds to arrive at a density of approximately 2000 seeds per m² (seed numbers estimated based on typical seed masses). The pesticide treatments were applied weekly following the density manipulations. We conducted six seedling censuses, the first of which took place 40 days after the establishment of the experimental treatments. The census intervals between the subsequent censuses were 7-21 days. At each census, we recorded the number of living and dead seedlings (the ‘dead’ category also comprising any seeds that failed to germinate).

Acacia polyphylla – In late May 2009 we established one block (six 1-m² plots) close to each of six *A. polyphylla* trees. In low density plots, seedlings were thinned to 15 seedlings, while in high density plots, seedling densities were left unmanipulated. Plots were sprayed and seedlings were counted weekly in the period between 4 June and 17 July. At each census, we recorded the number of new seedlings as well as the number of dead seedlings. New seedlings were marked with toothpicks (and toothpicks next to dead seedlings were removed).