



Intercepted Photosynthetic Active Radiation (IPAR) & Leaf Area Index (LAI)

PINEMAP 2013 Annual Meeting Field Tour
Tier III site, Taliaferro County, GA

IPAR = Intercepted Photosynthetic Active Radiation =
 $(\text{PAR Above Canopy} - \text{PAR Below Canopy}) / (\text{PAR Above Canopy})$

Measured with ceptometer

LAI = Leaf Area Index =
 $\text{Area of leaves} / \text{Ground area}$

Measured with LAI-2000

With assumptions about foliage orientation, foliage quantity can be calculated by comparing attenuation at different angles.

IPAR and LAI are highly correlated, but can differ depending on foliage display within the canopy, i.e., higher clumping of foliage decreases IPAR/LAI.

Litter traps allow direct measure of LAI but can't be used to measure seasonal changes and estimates are delayed until current foliage abscises.

Data and graphs courtesy of Joe Clark and Lisa Samuelson, Auburn University

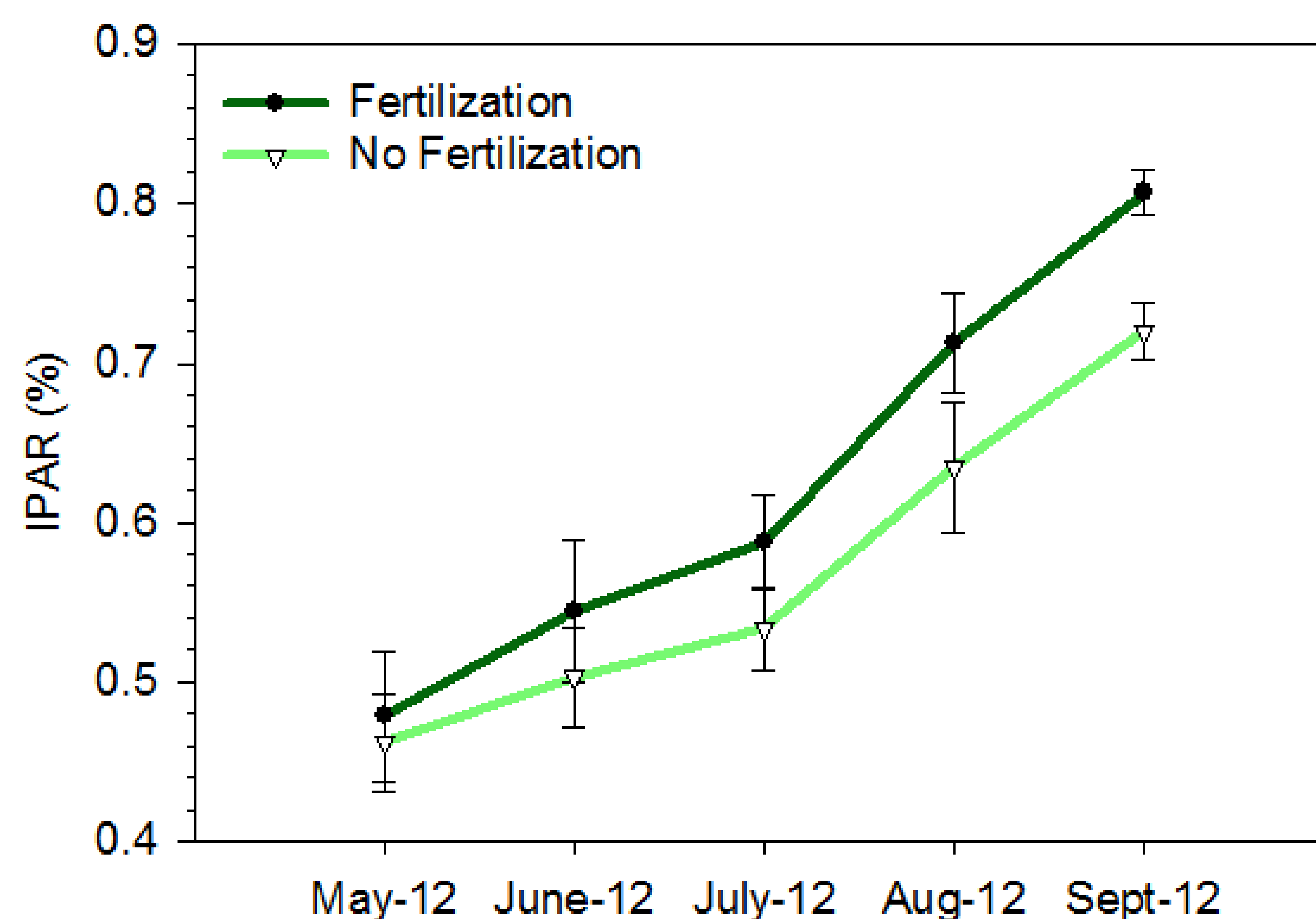


Figure 1. Fertilization increases IPAR

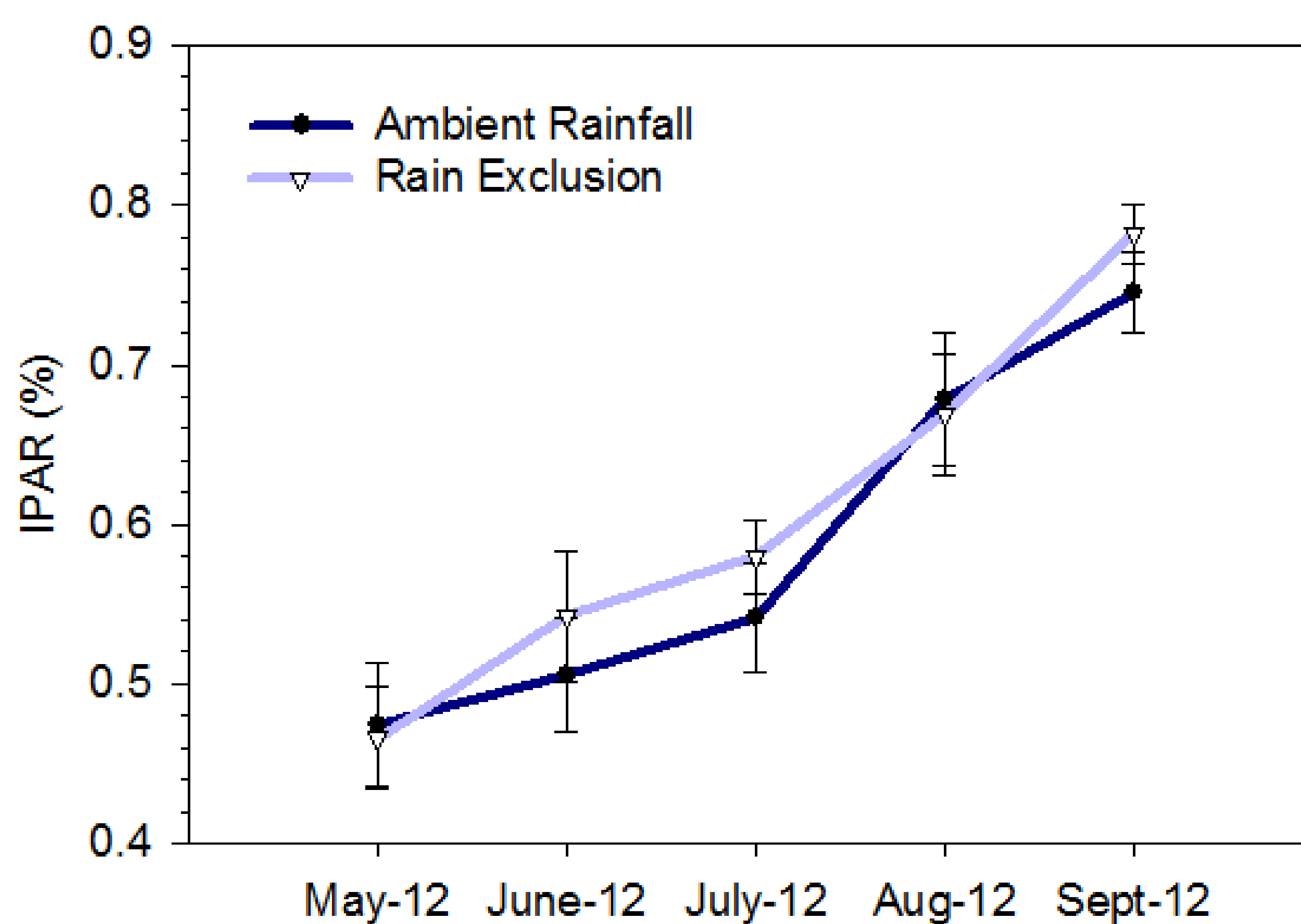


Figure 2. No effect of rainfall exclusion on IPAR

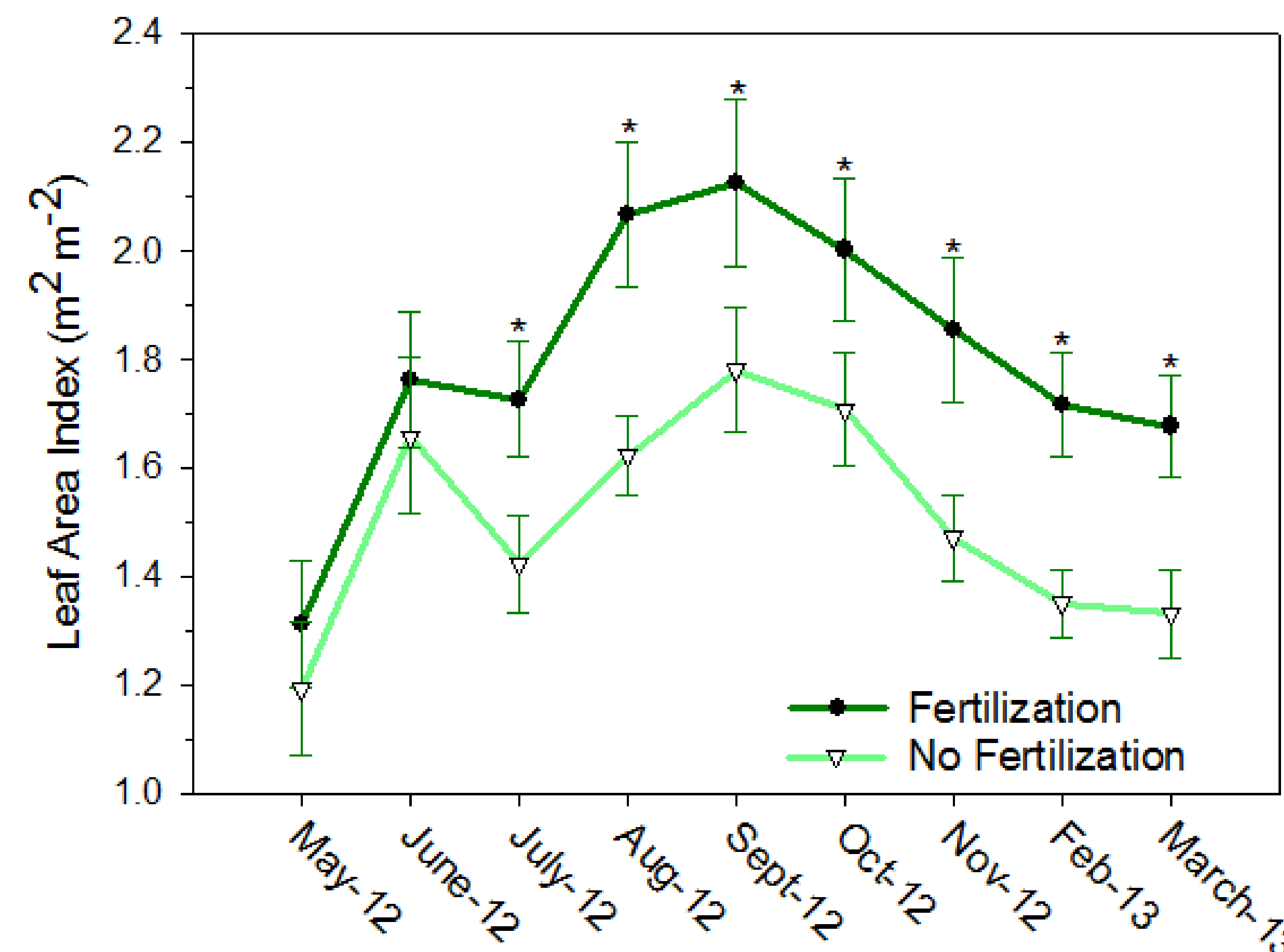


Figure 3. Fertilization increases LAI

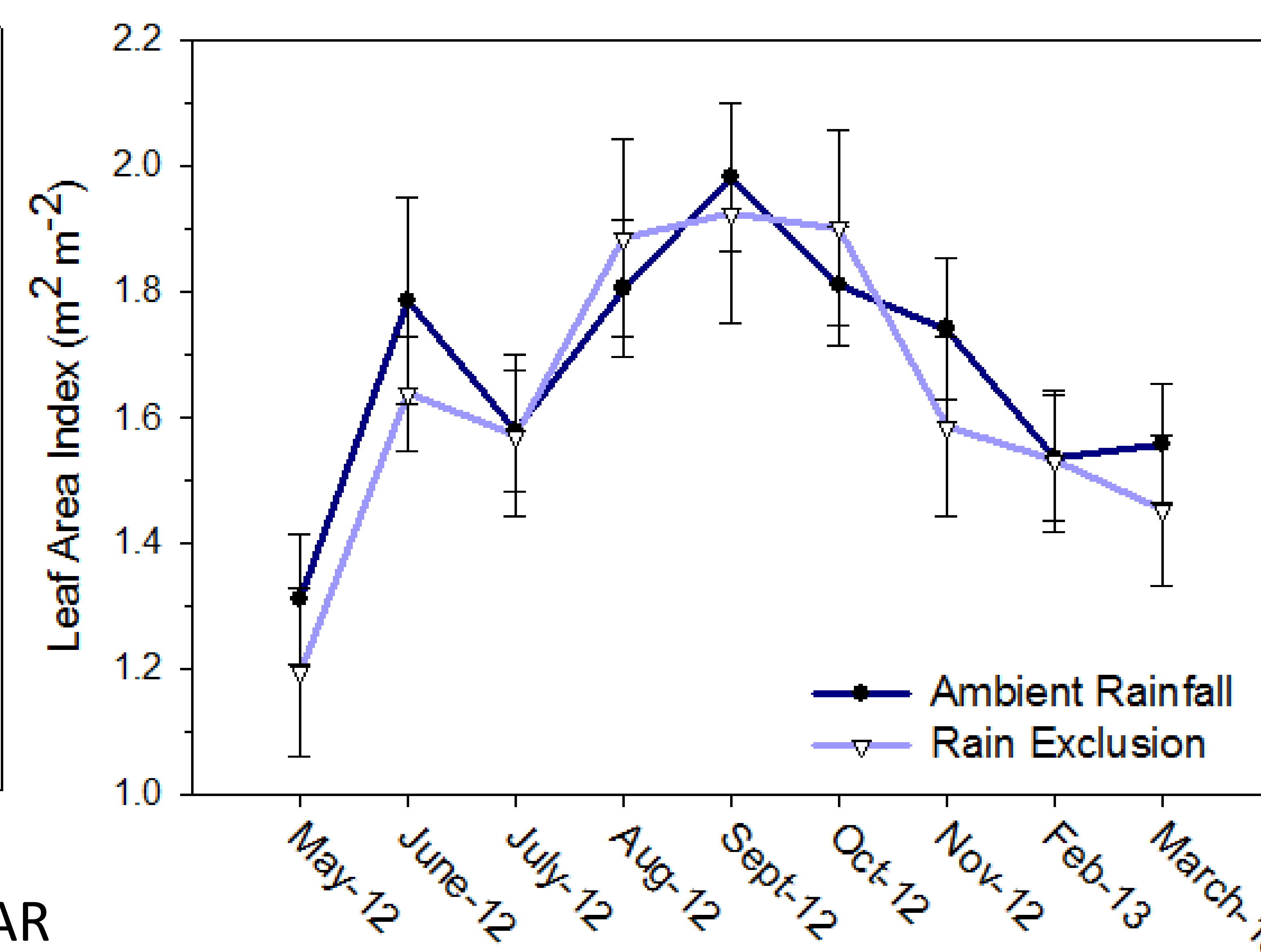


Figure 4. No effect of rainfall exclusion on LAI