

Fruit presence alters the vegetative and reproductive shoot growth in 'Hass' avocado (*Persea americana*, Mill.).

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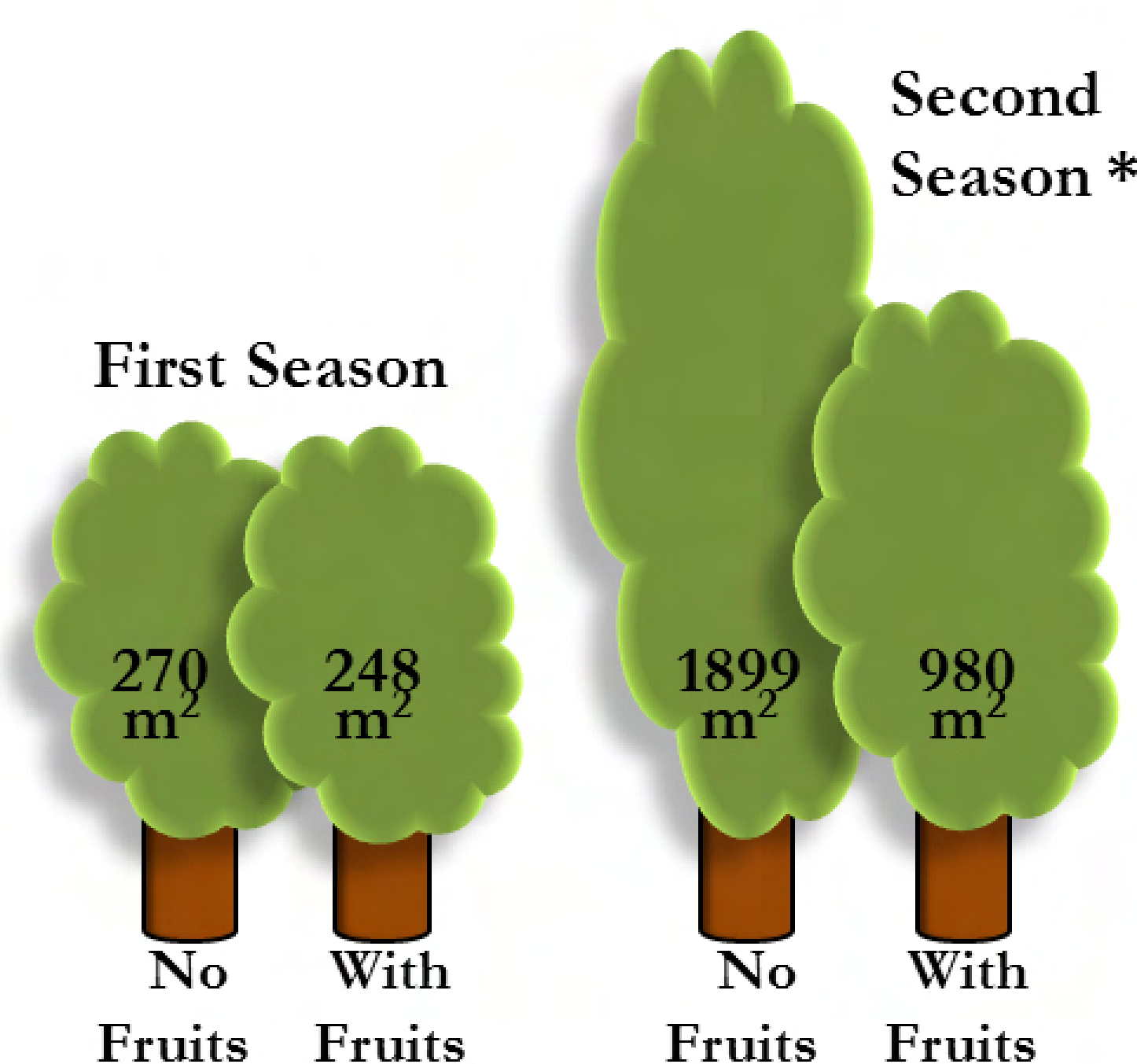
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ALTERNATE BEARING

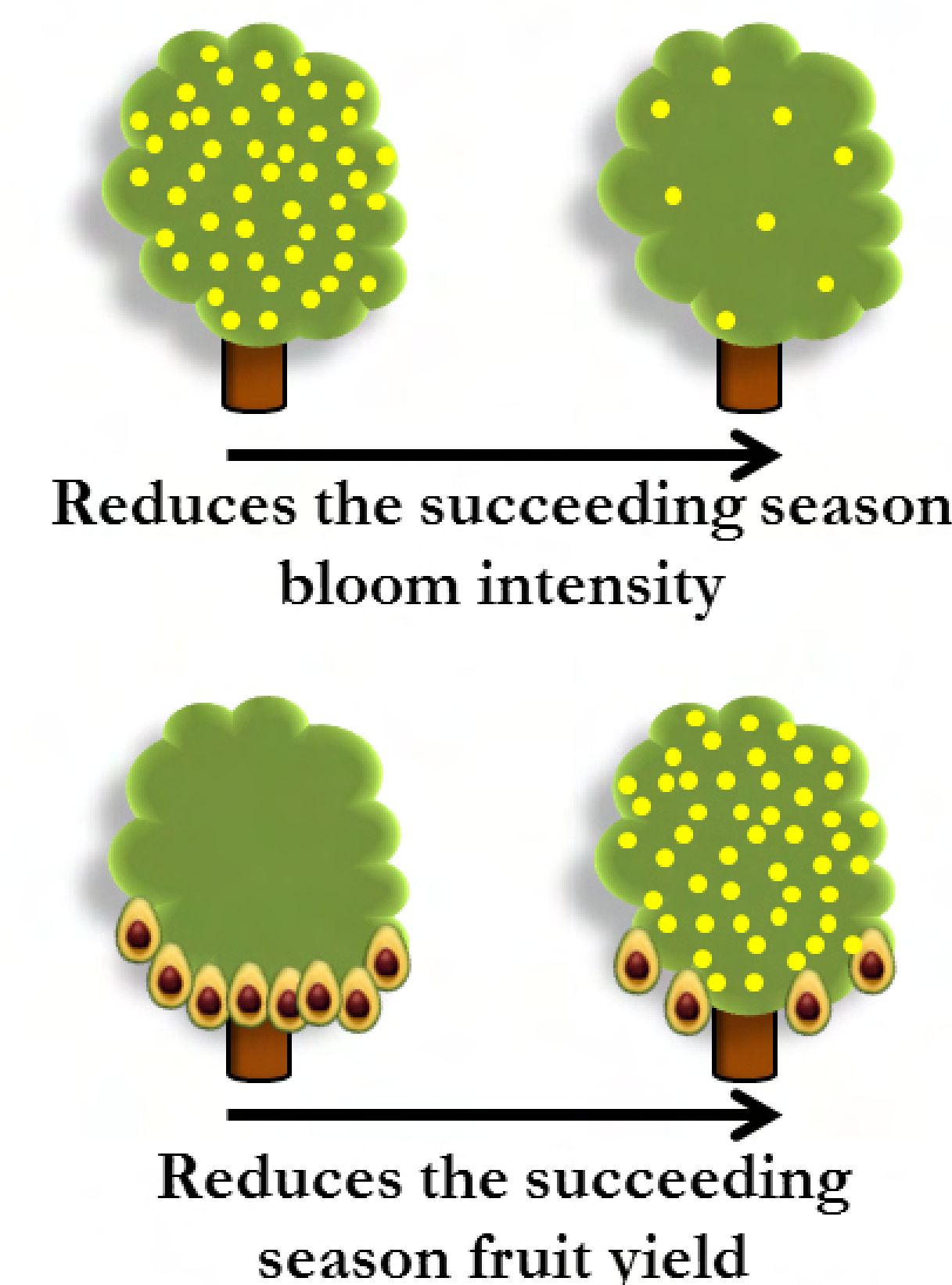
- Overarching agricultural problem.
- This phenomena presents itself as the usually yearly fluctuations between high and low fruit loads for the same group of trees.

Whole Tree Observations

VEGETATIVE EFFECTS



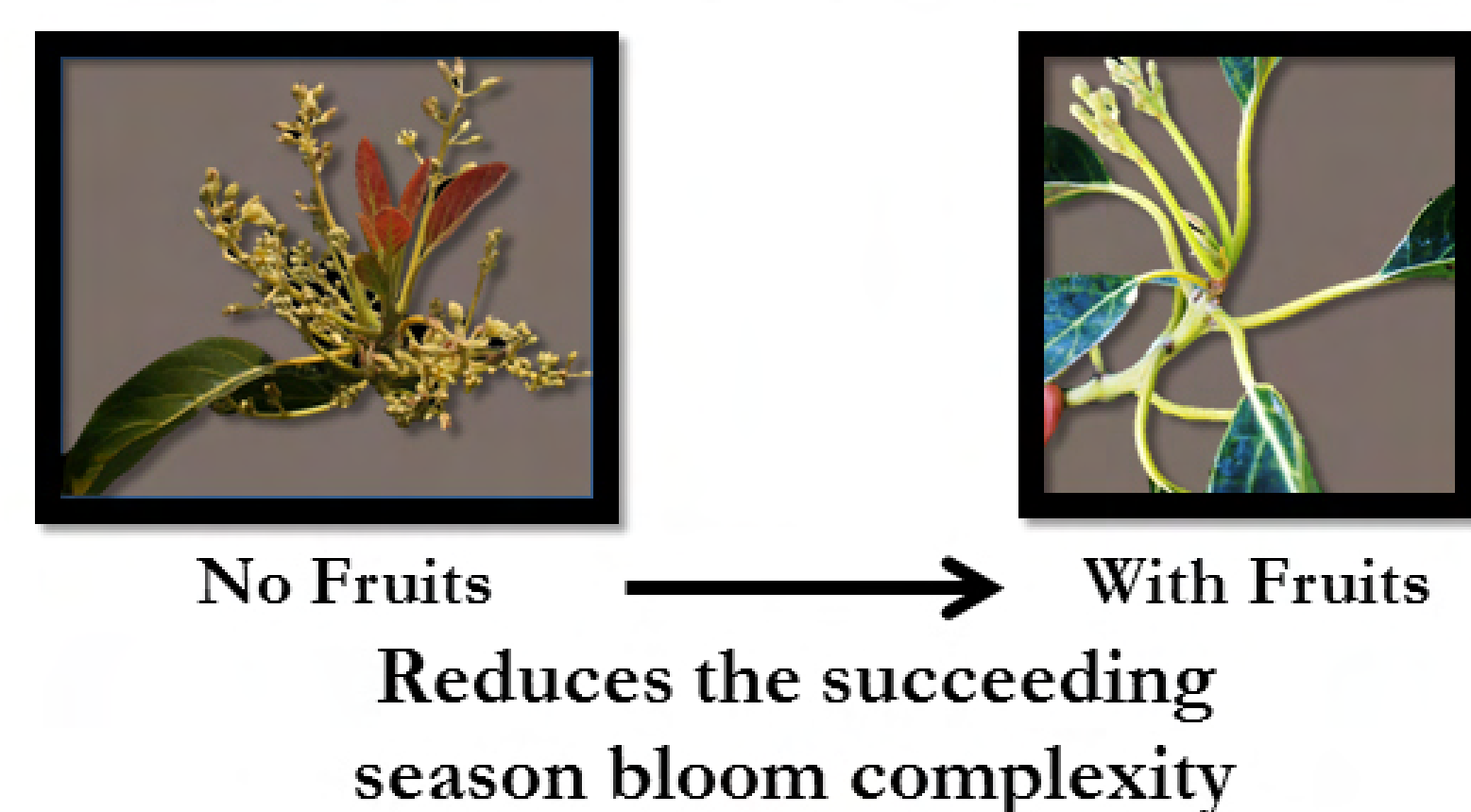
REPRODUCTIVE EFFECTS



PROBLEM: too broad for detailed studies and approaches

CAN WE OBSERVE THE PHENOMENA AT THE SINGLE SHOOT LEVEL?

REPRODUCTIVE EFFECTS



VEGETATIVE EFFECTS

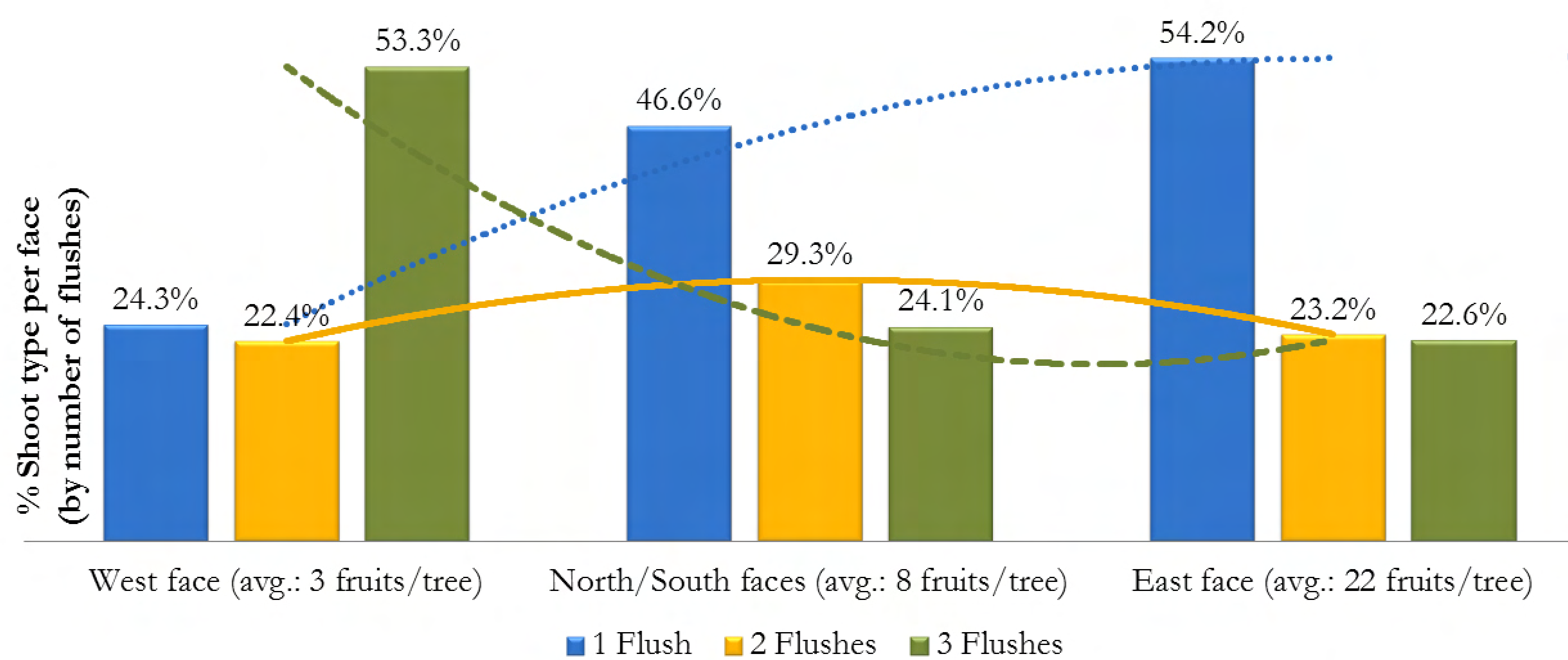
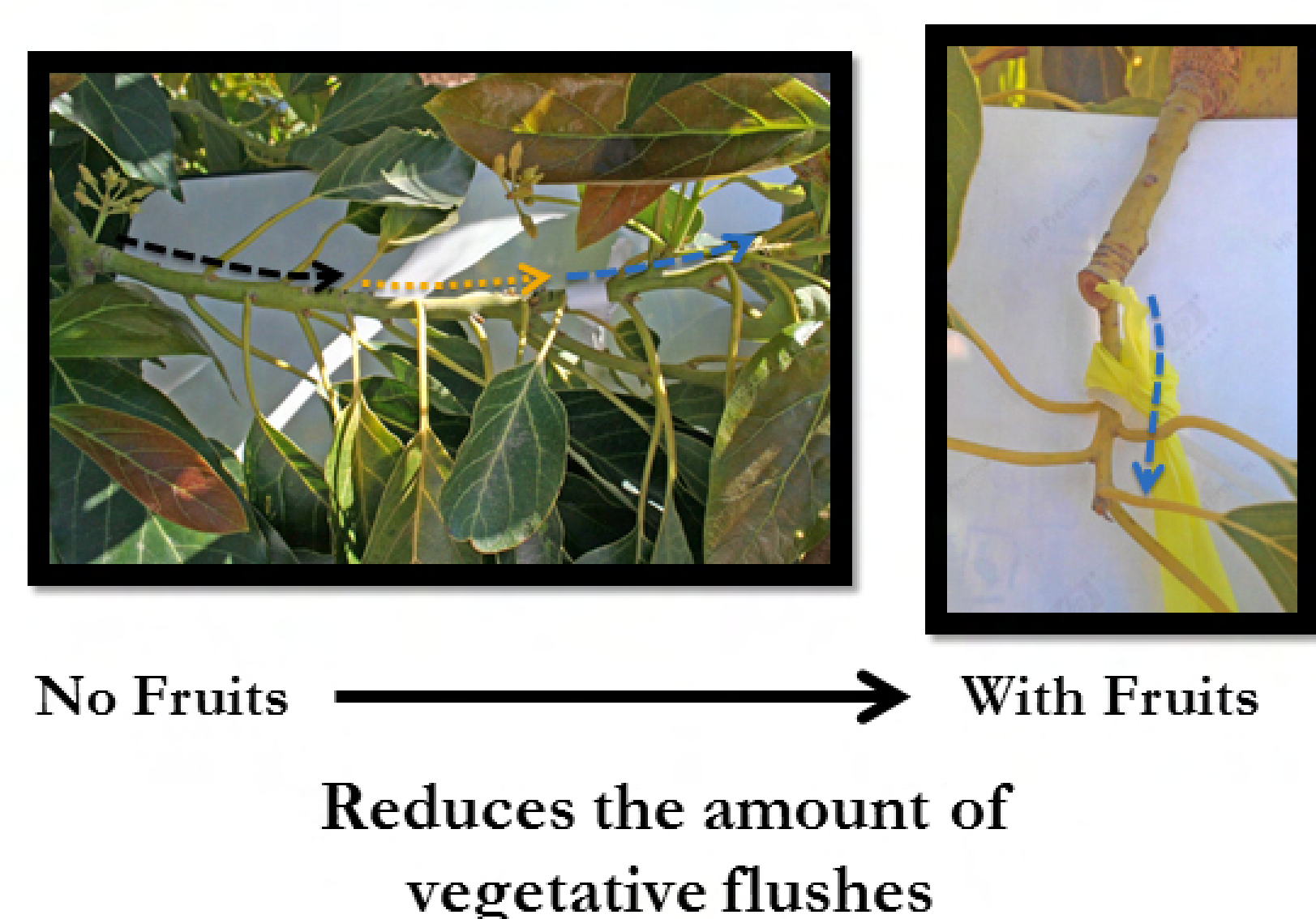


Whole Shoot Observations

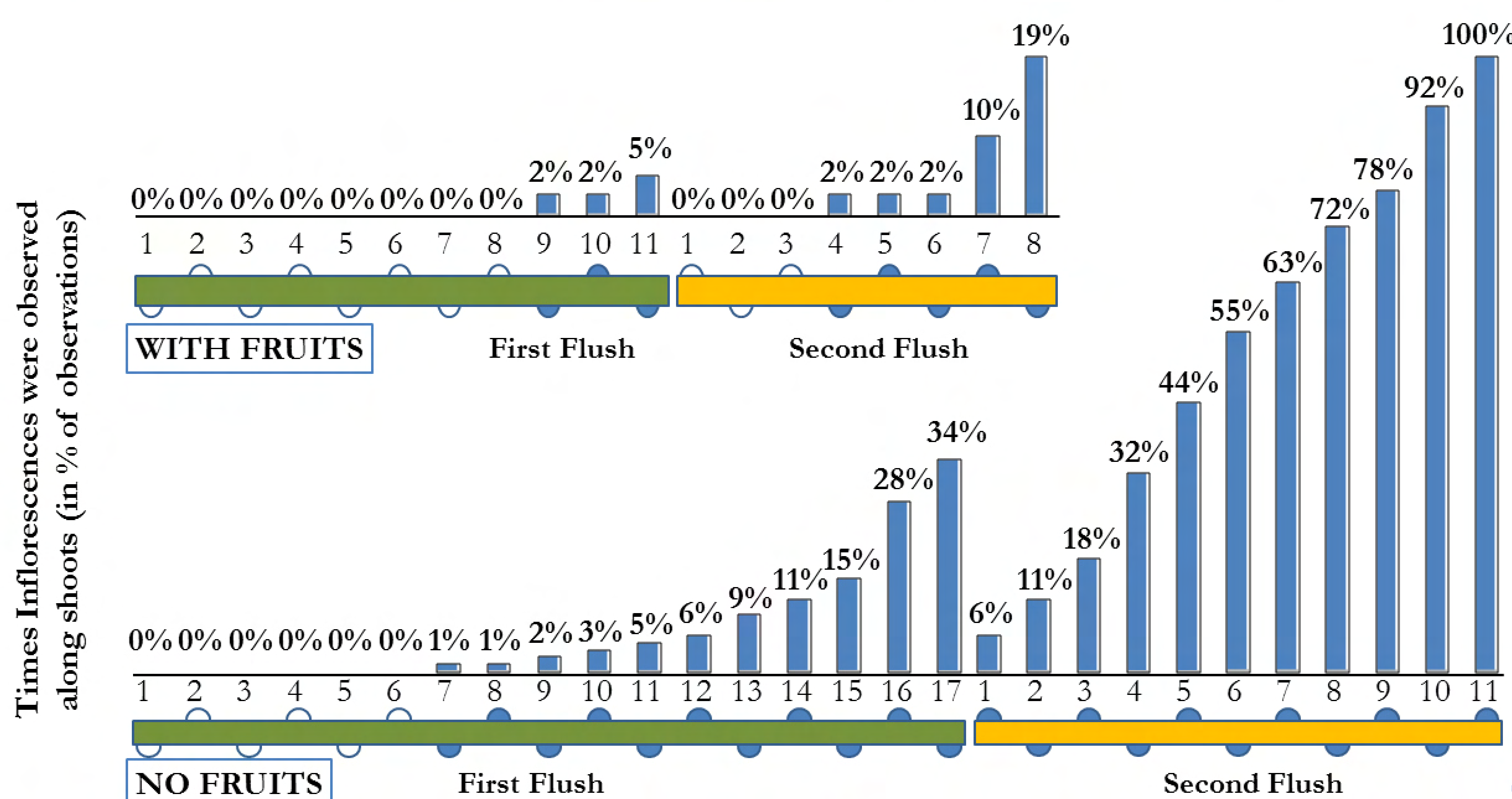
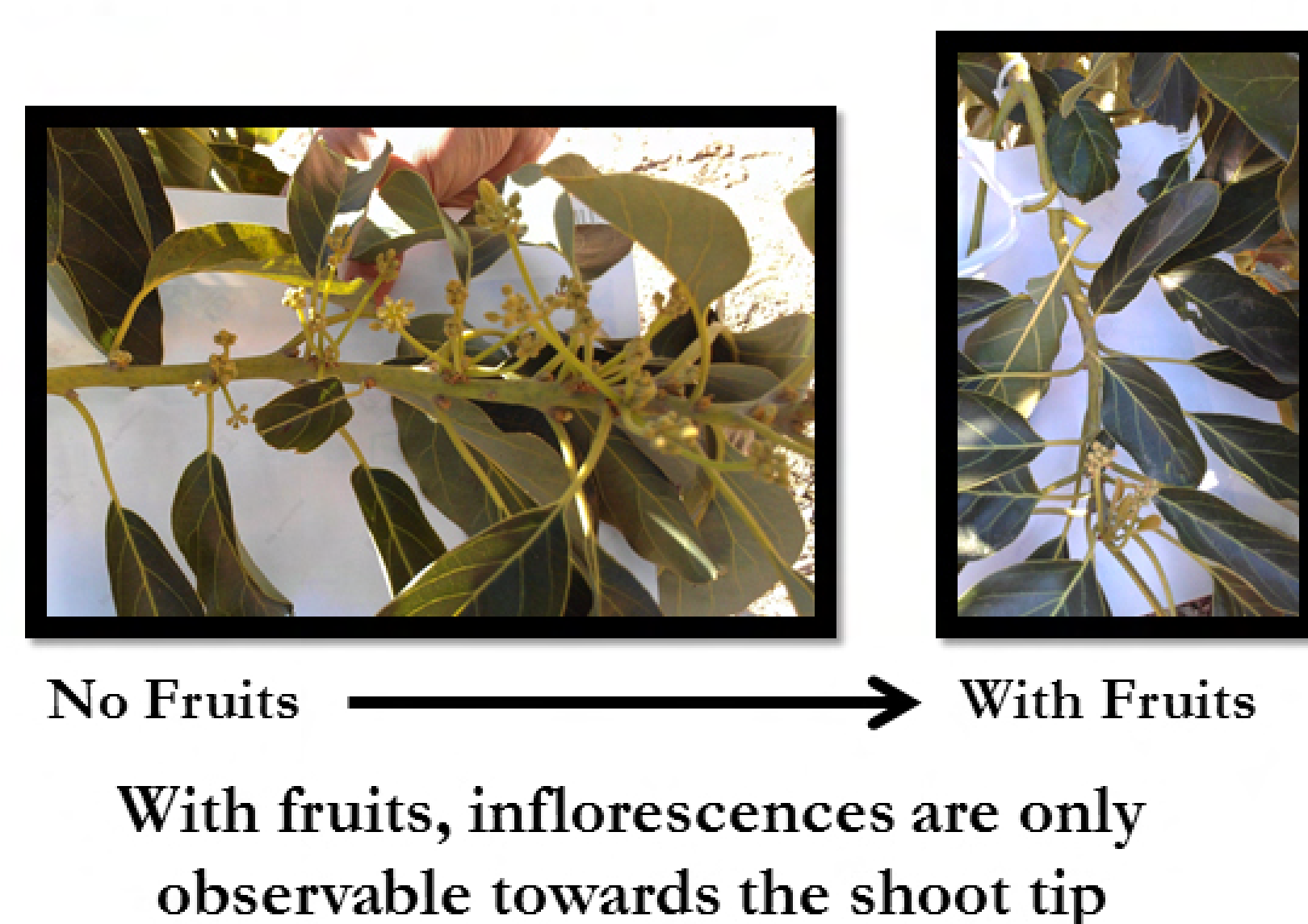


WHAT ABOUT WITHIN SINGLE SHOOTS?

VEGETATIVE EFFECTS



REPRODUCTIVE EFFECTS



CONCLUSIONS

- The alternate bearing phenomena can be studied at the single shoot level (which is the unit that may or may not have a developing fruit).
- Developing fruits reduce the current season number of flushes of the shoot that has them.
- The different shoot types (categorized by number of growth flushes) serve as a visual signature of the fruit presence around a whole tree. This is an important aid in designing field organ and tissue sampling for more detailed molecular biology approaches to fruit presence effect and the alternate bearing phenomena.
- Developing fruits reduce the intensity and complexity of the succeeding season bloom.
- During blooming, it is remarkable to observe that a single shoot will reveal an increased response to the flower induction process at the distal sections of the flushes it produced. It is then important to consider the transitional areas between flushes as regions of interest for the study of signaling molecules and developmental/molecular processes that are affected by fruit presence. Comparatively, shoot tips tend to have inflorescences and seem to be further away from the "threshold" sections where the bud fate is being affected.
- My current research efforts are set to build on the previous observations and study in detail the relationship between fruit presence and the vegetative and reproductive growth, wanting to discriminate between effects on flower development and/or bud release process.