How to understand the alternate production in apple tree? A modeling approach of carbon and hormones fluxes

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How to understand the alternate production in apple tree?

A modeling approach of carbon and hormones fluxes

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The alternate bearing in apple trees consists in a high fruit production in ON years followed by a low production in OFF years (Fig. 1) and represents a major problem in fruit industry.

Main hypotheses

Floral induction (FI) variability between successive years is caused by:
- Competition for carbohydrates between fruits and vegetative organs (Monselise et Goldschmidt, 1982)
- Inhibition by gibberellins (GA) coming from the fruits seeds (Neilsen and Dennis, 2000)
- Tree architectural variability (Lespinasse et Delort, 1986)

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