



*Protected Cropping Production Systems  
for Season Extension*

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## *Background and overview*

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- *Many types of "protected" cropping  
- attempt to modify and control growing conditions*
- *We will concentrate on field systems*
- *Most attempt to modify temperature and or humidity ;  
occasionally also light, pest exclusion, etc*
- *Goals relate most often to modifying harvest period or  
just growing the crop at all.*
- *Should have clear specific goals for structure prior to  
building; test structures useful for R & D.*

# *Protected cropping systems - overview*

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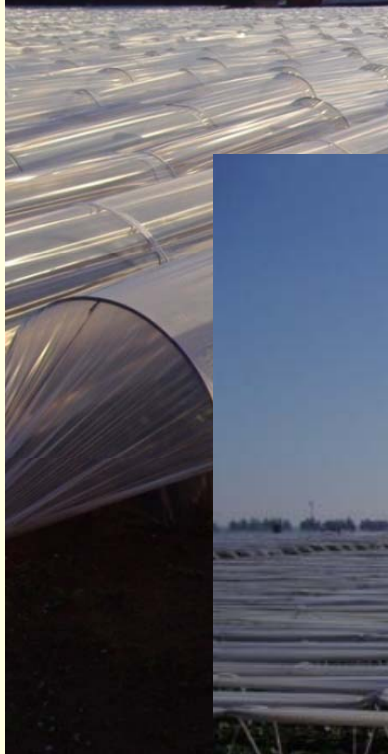
- *Temperature*

- *generally heat unit gain and some frost protection*
- *also need to be concerned about venting and excessive heating*

- *Humidity control.*

- *primarily avoid free moisture on leaves, fruit*
- *often lower humidity but depends on conditions*























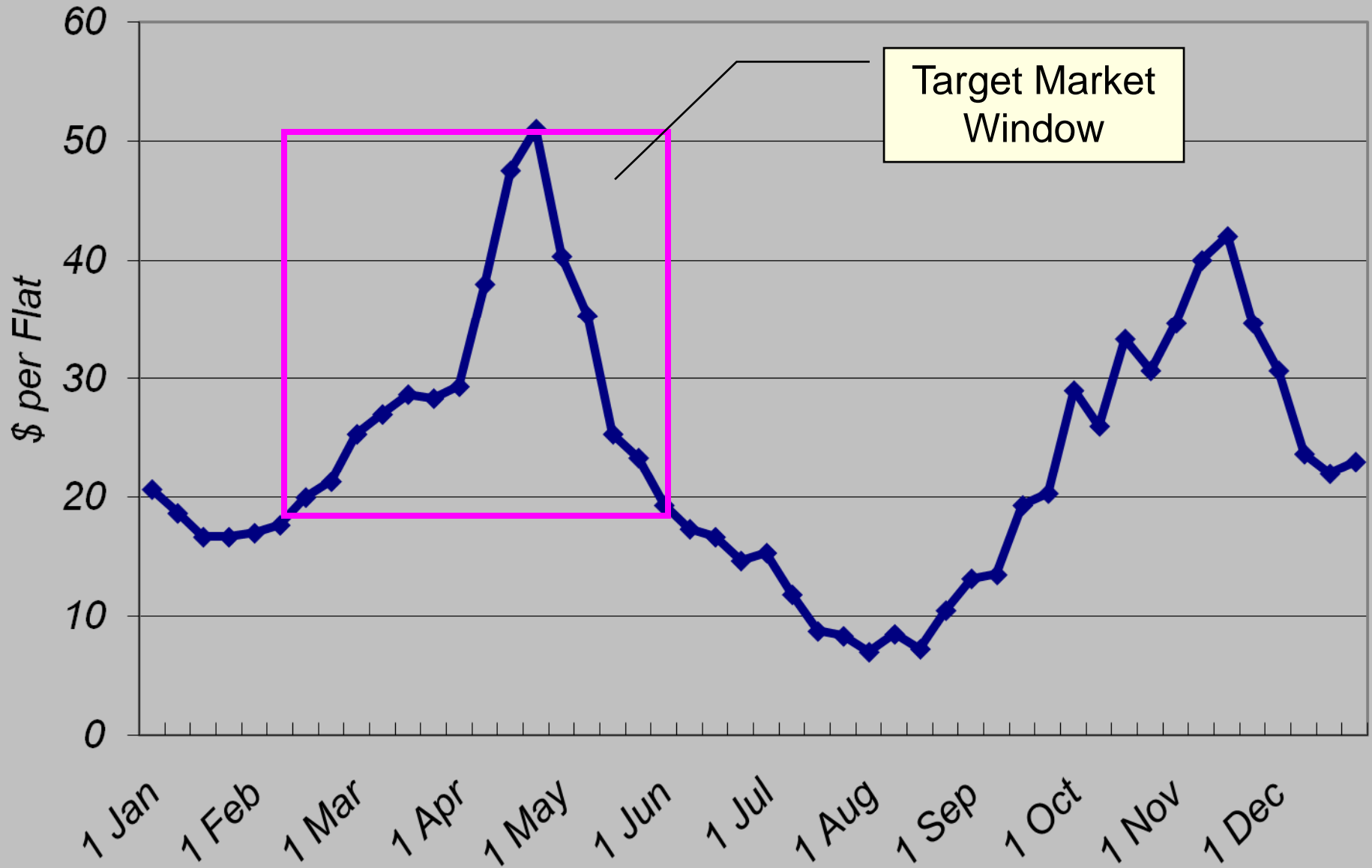
## *Protected cropping goals?*

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- *Just grow the crop - temperature sensitive tropicals and subtropicals.*
- *Manipulate harvest window  
- best markets for fruits, vegetables, ornamentals are often early or late or out of season.*
- *Need to look at prices of product and get a view of potential prices and project returns.*
- *Need to test production practices.*



*3 - year Average Wholesale Prices for Fresh Blueberries  
L.A. Terminal Market 1998 - 2000*



# Tradeoffs

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- *Improvements in price and production*
- *Additional cropping options, diversify*  
*- reduce and spread risks, market benefits*

*VS*

- *Initial investment costs*  
*+ recurring maintenance of structure*  
*+ recurring maintenance of system*  
*- uncertain added hidden costs*



## *Protected cropping - advantages*

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- *Yield and or quality improvement  
- expanded production window?*
- *Higher or more stable prices*
- *Growing crops otherwise impossible to grow*
- *Reduced pest pressure - diseases  
direct costs / benefits? - indirect?*



## *Protected cropping - disadvantages*

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- *High initial investment costs*
- *Continuing maintenance costs?*
- *Continuing added costs of management*
- *Vulnerable to wind damage*  
*- hidden costs?*

*High value crops with demonstrated performance  
show improvements in returns (e.g. raspberries)*  
*- R & D costs?*



# *Protected cropping - critical factors for success*

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- *High value crops*
- *Marked advantage(s) to:*
  1. *Production*
  2. *Yield or quality advantages*
  3. *Market window changes*
- *Know real costs and benefits*
- *R & D to learn key aspects of management*



# *Protected cropping Additional Resources*

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*American Society for Plasticulture*

*[http://www.plasticulture.org/res\\_other.htm](http://www.plasticulture.org/res_other.htm)*

*HighTunnels.org*

*web site for sharing information about growing in high tunnels  
(hoophouses).*

*The Hoophouse Handbook*

*Growing for Market <http://www.growingformarket.com/store>*

*Extending the Season*

*Growing for Market <http://www.growingformarket.com/store>*





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