High Tunnel Plastic and Row Cover Increase Temperature and Reduce Light Intensity

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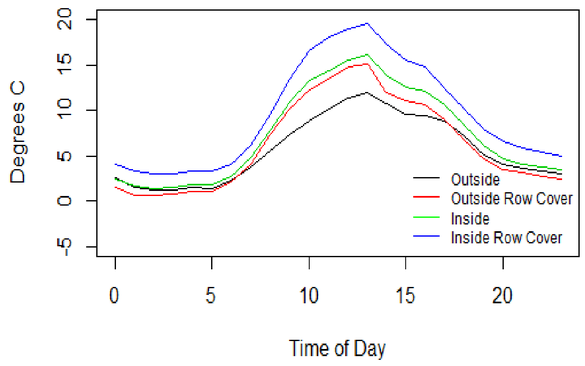
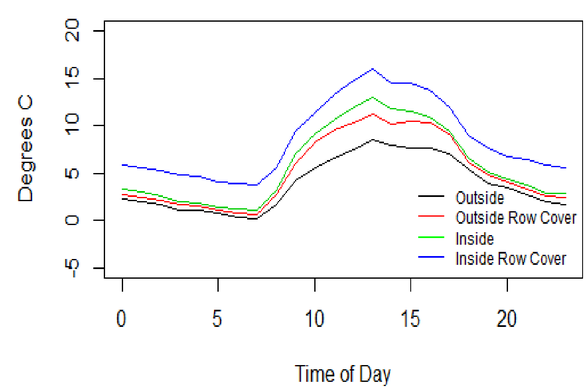
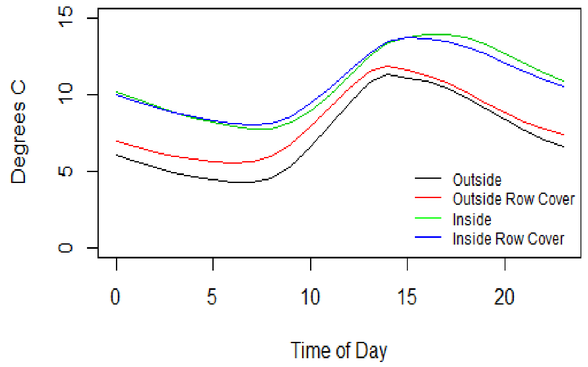
High tunnel growers that produce vegetables in the shoulder seasons are often faced with the decision on when to deploy row covers over their crops. The graphs on this poster illustrate the impacts plastic film and row cover have on air and soil temperature and light energy (PPFD) during the first week of April and the first week of October, 2017.

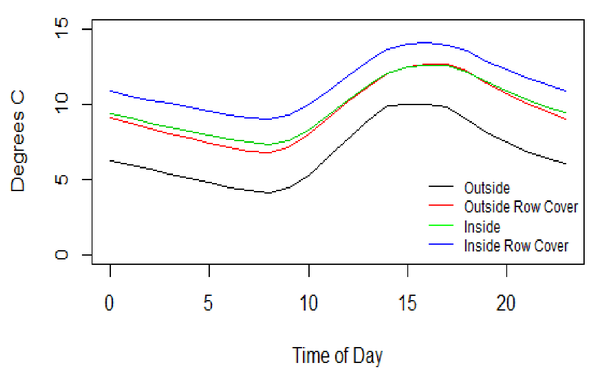
A 'composite day' plot was constructed from the average hourly temperature and PPFD readings of each day for the first week of April and October, 2107. The composite day plot smooths out the variation in temperature and light energy due to passing clouds and provides a clearer representation of the impact each of the layers of season extension is having on temperature and light at the crop level.



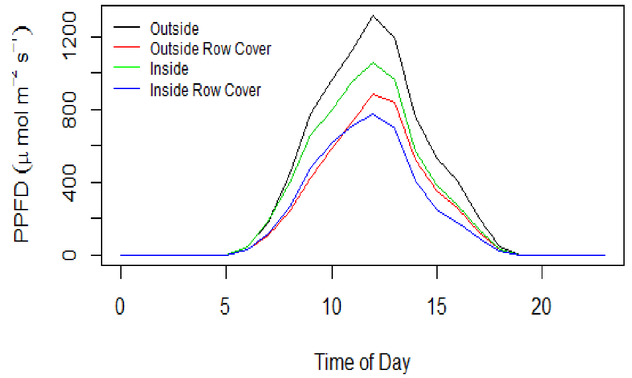


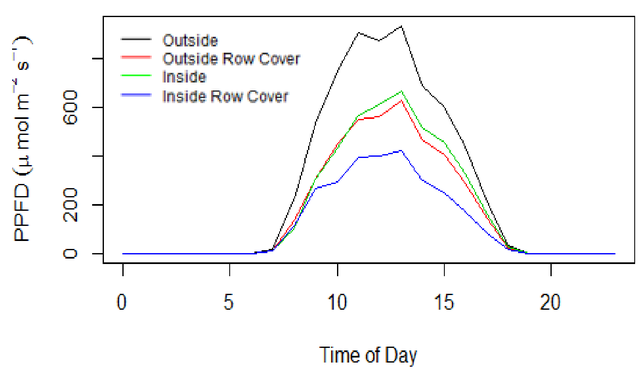
Two layers of protection are warmer than one. The influence of two layers on October night air temperatures is greater than an additive effect.





Row cover retains soil heat in the October, but does not increase soil temperature in April.





Early April has greater light intensity than early October. The reduction of light intensity with the addition of a second layer is greater in October than April.

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