Light and Temperature (Chapter 5)

- The fundamental determinants of forage response

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- Variation in seasonal growth between forages occurs because

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- Light & temperature are closely related –

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- Light and temperature interact

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– the combined effect of warm temperature and increasing daylength (to promote flowering) are required to obtain spring growth rates

- These are climatic effects and often there is not much that can be done in practice, however ……
  ……

<u>Light Quality (pg 103)</u>

>800nm

- no benefit, …….
- Many plant responses to high solar radiation (heating) are to reduce leaf area (and minimize radiation load)

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700 nm-800 nm

- Far-red effects (pg 109)
- High proportion in transmitted light, shading effects
- Etiolation
- ……..

610-700 nm

- red effects
- ……..
- Red:far-red ratio
- ……..
- ……..

510-610 nm

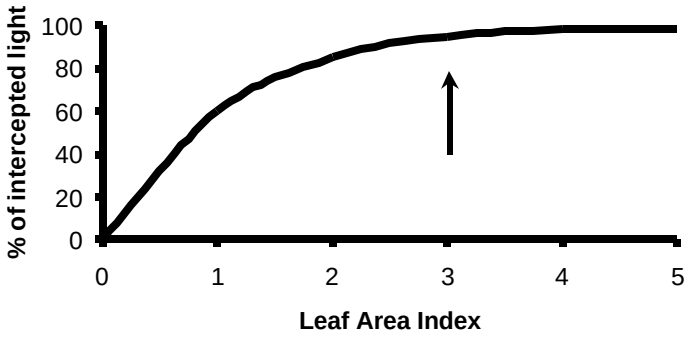
- no absorbance
- ……..

<400 nm

- UV range ……..
- UV increasing

Light Intensity

- Units are those for density
  ……
- ……



- ……
- LAI

Light Duration

- Day length
  Winter light 7:30am – 4:30 9-hr days
  Summer light 5:30 am – 8:30 pm 15-hr days
- ……..

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High Temperature (pg 111)

- Maximum temperature for growth
- ……
- High temperature effects

Low Temperature (pg 111-117)

- Freezing effects
- Acclimation – solute accumulation will lower the freezing point by up to 10^{o}C

Vernalization:…… ……

- ……

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- Heaving (pg 112)

Farm Management

- Light management

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…….

- Species and variety selection

  - High cold tolerance
  - ……

  - Medium
  - …….

  - Low cold tolerance
  - ……..

- Fall management and fertilizer (……)