



Centurion  
UNIVERSITY  
*Shaping Lives...  
Empowering Communities...*

# Center for Smart Agriculture

## Hydroponics technology



**Module 2 : Sowing and crop establishment in hydroponics**

**Session 10 : Identification of crops and their suitability to hydroponics system**



**Centurion**  
**UNIVERSITY**

*Shaping Lives...  
Empowering Communities...*

<b>Warm Season Crops</b>	<b>Cool Season Crops</b>
Spinach	Broccoli
Baby Spinach	Lettuce - all varieties of lettuce
Coriander , parsley , Celery	Cauliflower & cabbage
Amaranthus ( Red,Green& Bi-color variety )	Strawberry - Perennial in nature , requires, cool season for flowering and fruiting.
Swisschard	Kale
Mint and most of Indian herb varieties	Bokchoy , Watercress



**Centurion**  
**UNIVERSITY**  
*Shaping Lives...*  
*Empowering Communities...*

By seeing the growing season of different vegetable crops, plan in a staggered manner so that you can have at least uniform weekly harvest of all vegetable crops for the kitchen.



Centurion  
UNIVERSITY  
*Shaping Lives...  
Empowering Communities...*

- Successive plantings are desirable if you wish to have a continuous fresh supply of certain vegetables.
- Don't plant too much of a crop at any one time.
- Two or three small plantings of leaf lettuce and radishes may be made a week to 10 days apart.



**Centurion**  
**UNIVERSITY**  
*Shaping Lives...  
Empowering Communities...*

- Tomatoes and Chillies may be planted every two weeks until you have used up all your dutch buckets reserved for that plant variety.
- At least two plantings of other vegetable varieties should be made on a monthly basis to have enough produce.
- Several plantings can be done throughout the season based on your requirement.



Centurion  
UNIVERSITY

Shaping Lives...  
Empowering Communities...

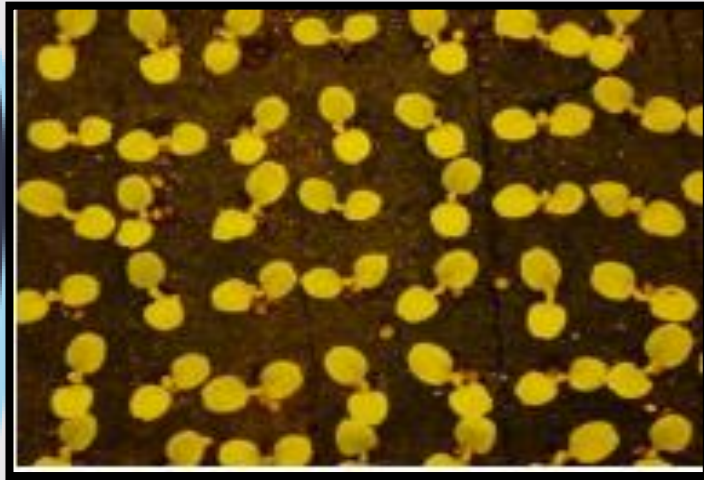
## Seed sowing of Lettuce

- The production of the lettuce crop is separated into two growing areas.
- Seeds are started in a germination area where they germinate and grow for 11 days.
- They should be shaded from full sun on the first day after germination, but can then be exposed to full light ( $17 \text{ mol/m}^2/\text{d}$ ) or slightly greater.
- On Day 11, the plants are transported to the greenhouse and transplanted into the hydroponics system where they are grown until re-spacing on day 21 and finally harvested on Day 35



**Centurion  
UNIVERSITY**

*Shaping Lives...  
Empowering Communities...*



**Day 5 - Nursery**



**Day 11 – Transplanting at  
hydroponics system**



**Day 21 – Transplant**



**Day 35 – Harvest**





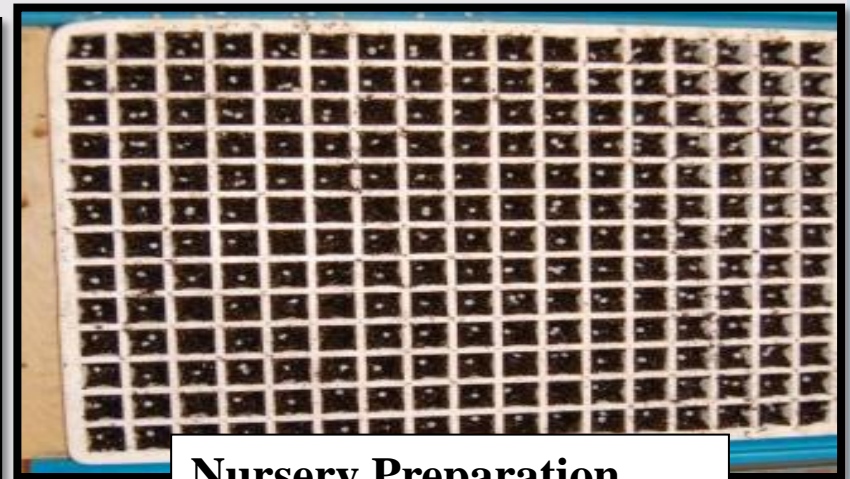
**Centurion**  
**UNIVERSITY**  
*Shaping Lives...  
Empowering Communities...*

## Seed sowing of Spinach

- Production of spinach begins with the making of the germination media.
- Media should be moistened to an optimal moisture before sowing occurs.
- Fill the trays with media
- Trays are filled with a peat/perlite / potting mixture.
- The moisture content of media should be critical to seedling germination
- Place seed on top of media by hand or with help of forceps (To avoid contamination)
- Add additional media and compact.
- Place trays in humid environment for germination.
- Please note that media CANNOT be re-used because of the risk of disease. Also note that media cannot be autoclaved to reduce disease risk because that process damages the physical properties of the media.



**Spinach seeds**



**Nursery Preparation**





Centurion  
UNIVERSITY

*Shaping Lives...  
Empowering Communities...*

**Thank you....**