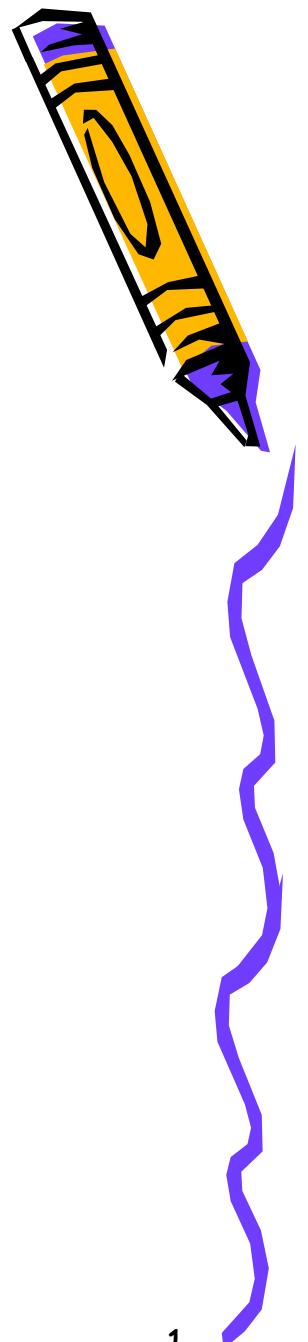
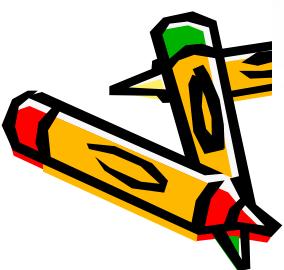


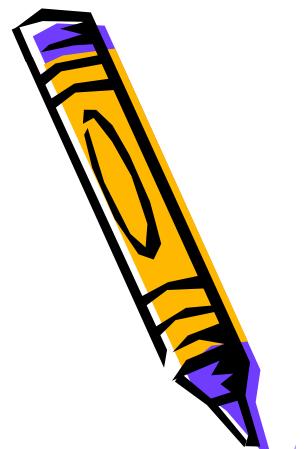
Onion Production

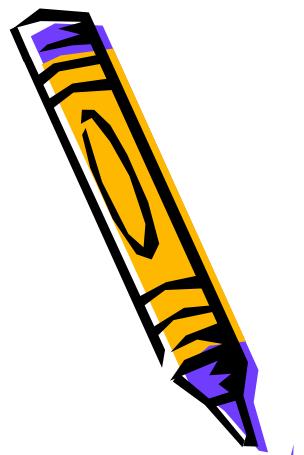
- IDEA-NEW, May, 2010



Onion Production

- Onion is cool season crop
- The main production areas in ER are Surkrod, Kama and Rhodat districts
- Onions are planted in ER during the Fall-winter season
 - September - Mid-October

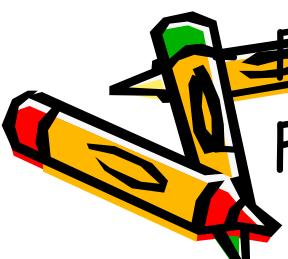




Climate

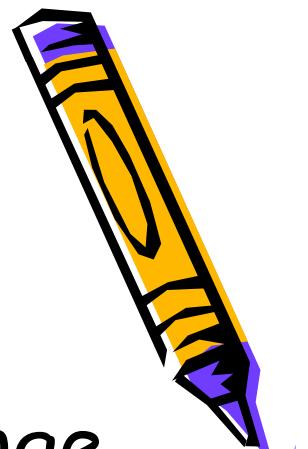
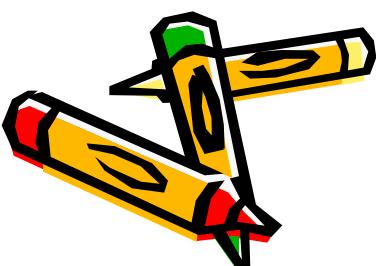
- Bolting
 - Length of day
 - Temperature
- High temperatures and long photoperiod are essential for bulb formation
 - Bulbing is accelerated with increasing temperatures
 - High temperature affect bulb shape
- Onion needs two types of temperature

For vegetative growth ($13 - 24^{\circ}\text{C}$)
For bulb formation ($16 - 21^{\circ}\text{C}$)



Soils

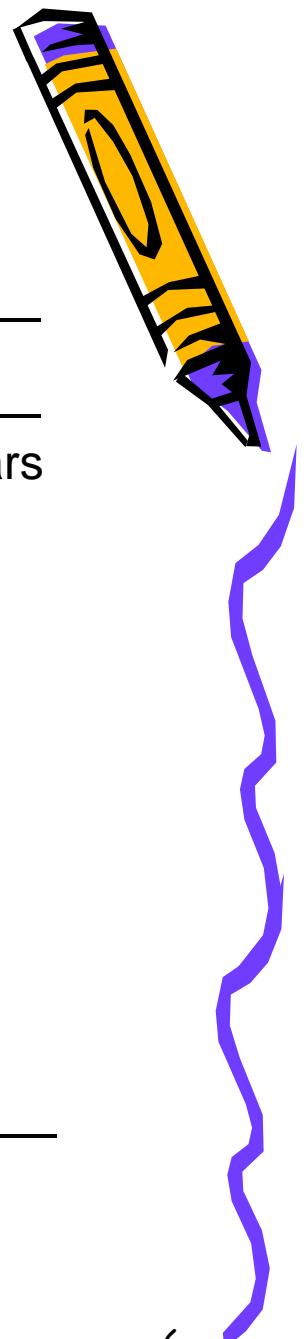
- Onion can be cultivated in wide range of soils
 - Sandy - loam or a silt-loam is the best.
- The soil should be rich in humus,
- Onions are sensitive to high acidity,
- The optimum pH is 5.8-6.5.



Cultivars

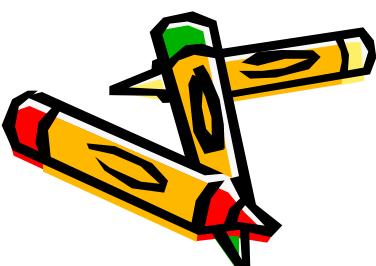
- Onion cultivar are grouped on:
 - Short,
 - 12 - 13 h, mild, soft-fleshed and suitable for storage
 - Include Grano-Granex type
 - Intermediate,
 - 13.5 - 14.5 h, soft-fleshed and used for fresh trade
 - Long-day type
 - Over 14.5 h, yellow, white and red globes cultivar

Cultivars



Types of onion cultivars (open-pollinated cultivars are underlined)

Day length	Color	Pungency	Representative cultivars
Short	Brown	Sweet	<u>Awahia</u>
	Red	Sweet	Red Granex
	Red	Pungent	<u>Red Creole</u>
	White	Sweet	White Granex,
			<u>Crystal Wax</u>
	Yellow	Sweet	<u>Grano</u> , Granex
	Yellow	Pungent	<u>Yellow Creole</u>



Cultivars

- For Afghanistan, short day Onion varieties are recommended
- Onions varieties planted in ER
 - OP
 - Mazina red,
 - Super Swat
 - Swat - 1
 - Super stone
 - Red Creole
 - Yellow Spanish Grano
 - Hybrid
 - Red Crown
 - Red Coral



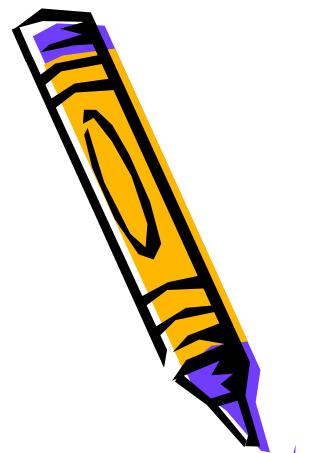
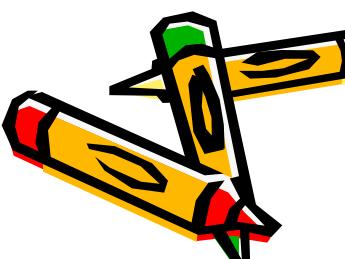
Planting Techniques

- For direct seeding, 5 kg per Jerib, plants are thinned
- Transplant common method used in ER
 - 1.2 kg per Jerib for transplanting
 - Transplants have 3 - 5 leaves well formed for the time of transplant
 - Transplants leaves are pruned during growth prior to field setting



Planting Methods

- Raised bed vs. Basin (traditional)
 - Varieties,
 - Texas Early Grano
 - Red onion (Nascred - Red magic)
- Results:
 - Texas Early Grano
 - Average yield on raised bed, 11,600 kg/jerib
 - Average yield on basin, 9,000 kg
 - Balance 2.6 MT
 - Red onion (Nascred - Red Magic)
 - Average yield on raised bed: 8,000 kg/jerib
 - Average yield on basin: 6,200 kg/jerib
 - Balance 1.8 MT



Planting Methods Compared

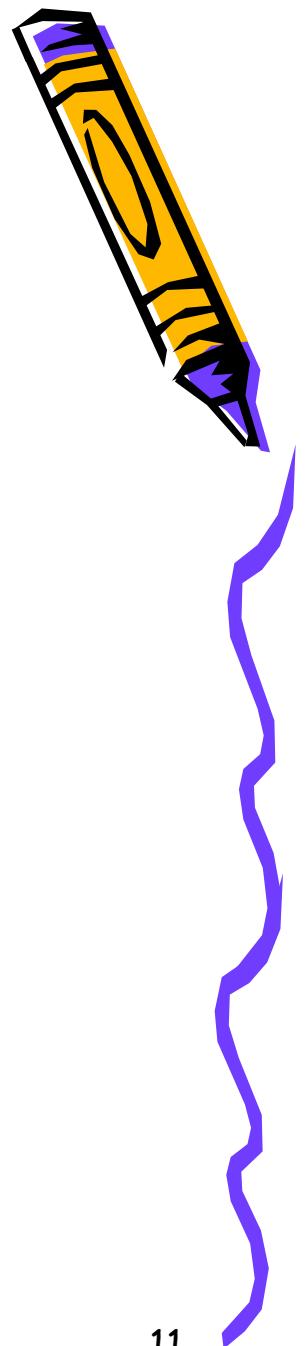
Traditional



Recommended

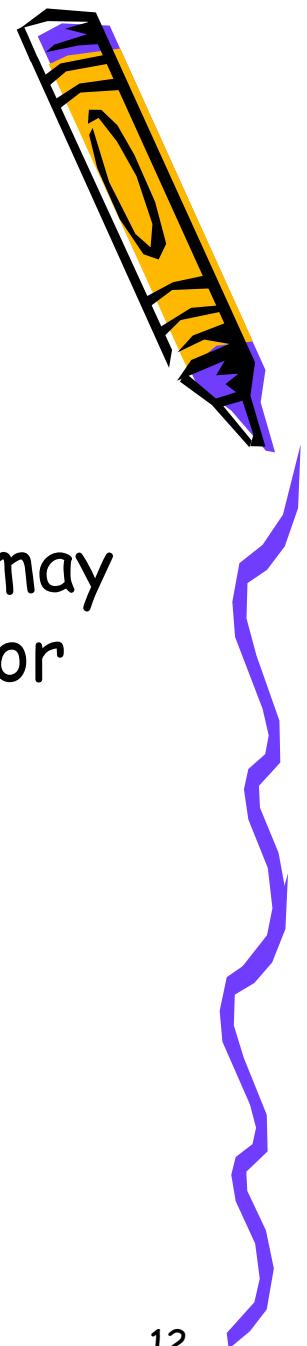


RECOMMENDED METHOD



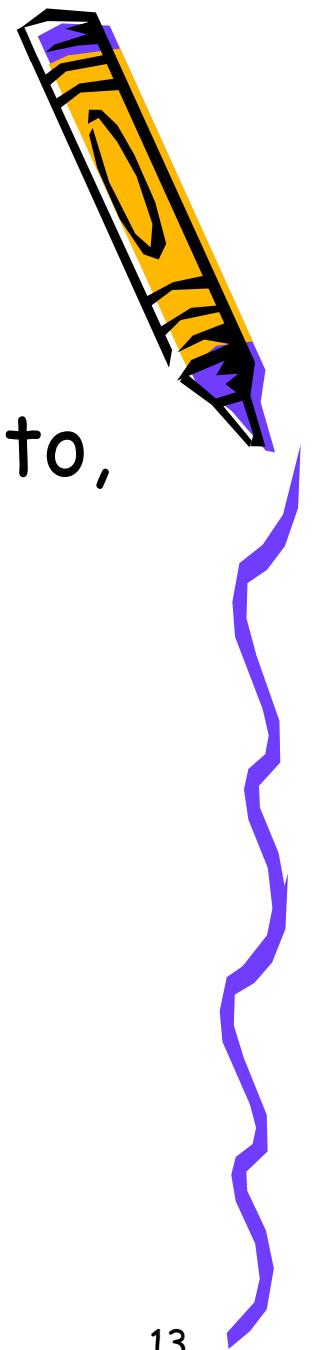
Water Management

- Onions require uniform moisture throughout the growing season.
- Fields that suffer growth retardation may produce excessive numbers of doubles or splits, reducing the number of Grade 1 bulbs.
- Furrow irrigation is generally used.
- Onions at the bulbing stage utilizing substantial amounts of water



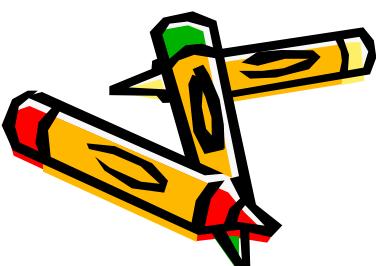
Fertilization

- Fertilizer requirements according to,
 - soil type
 - previous fertilizer application
- 5 - 8 tons of FYM/jerib
- 45 Kg Urea/jerib
- 40 Kg DAP/jerib
- 20-25 Kg Potassium Sulfite/jerib



Weed Control

- The field should be kept weed-free, especially in the initial stages of growth.
- Cultivation, must be shallow to avoid root damage
- A combination of a herbicide application (3 days after transplanting) and hand-weeding 45 days later keep the crop weed-free.
 - Fluchloralin or Oxyfluorfen(15ml/10 liters)



Thrips

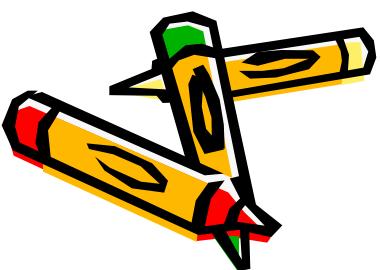
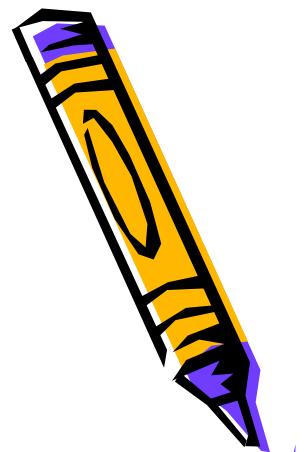


- Minute insects that cut or "rasp" the epidermis of leaves or stems and suck the plant sap resulting in white blotches on leaves.
- Severe infestations result in leaf blasting and collapse.
- Infestations are more severe in dry seasons, and entire fields may be destroyed.
- Affected leaves show silvery blotches which later turn a brownish color. The leaves get distorted from the tips downwards and the plant ultimately wilts and dries out.

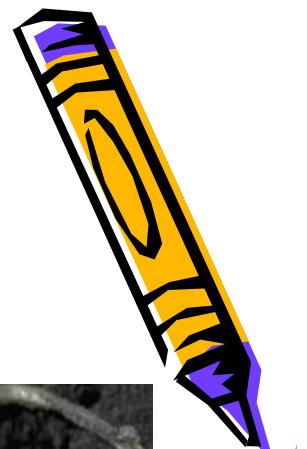


Spray Diazinon, 7 - 10 days interval

Thrips



Onion Maggot

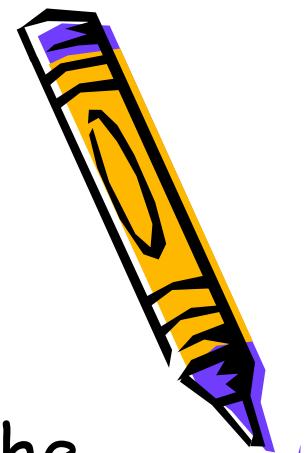


- The flies lay their eggs on old leaves or on the soil and the larvae enter the soil and damage the onion bulb
 - Infested plants turn yellowish brown and finally dry up.
 - Control
 - Follow a regular crop rotation
- Thimet should be applied to the soil before transplanting.



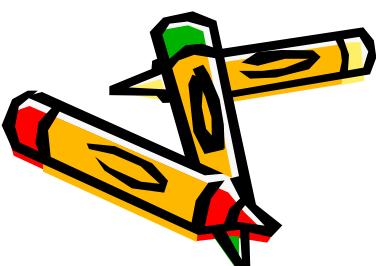
Damping-off

- High soil moisture and moderate temperatures along with high humidity especially in the rainy season leads to the development of the disease.
- Two types of symptoms are observed:
 - *Pre-emergence damping-off*: seed and seedlings rot before they emerge;
 - *Post-emergence damping-off*: The pathogen attacks the collar region of seedlings on the surface of soil.
- Control:
 - Use seed treated with fungicides (Thiram), change field nursery location every year, make fungicide drench application (Thiram) to the nursery top soil



Purple Blotch

- Attack onions, garlic, shallot and other Allium crops
- Small white sunken spots develop on leaves, under moist conditions the spots enlarge and turn purple
- Control
 - Long rotation with non related crops, good drainage, lowering densities, spray Mancozeb and Chlorothalonil

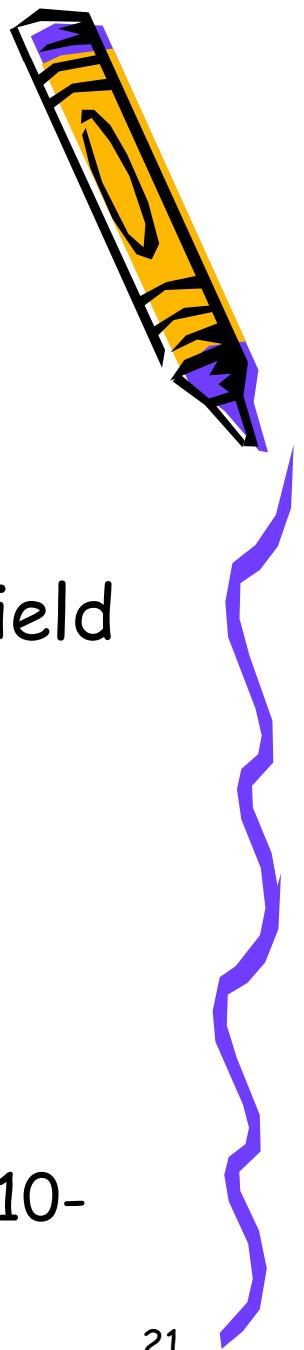


Downy Mildew

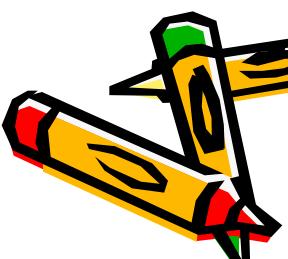
- Attacks young plants, appearing as white powder, usually confined to the oldest leaves of young plants.
- A white mold develops rapidly in cool damp weather and progresses down the sheath, and plants eventually fall over and dry up
- Mancozeb, weekly interval until bulbins begin



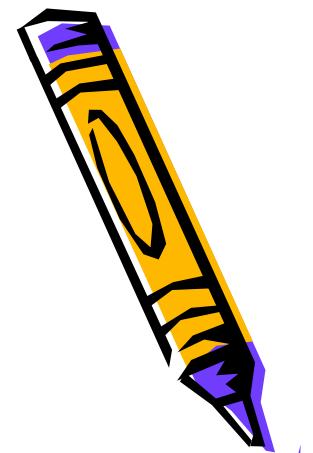
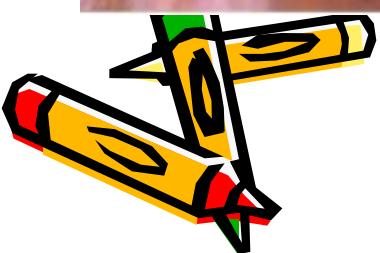
Neck rot



- Infection takes place in the field, but become evident during storage
- Moist conditions before and during harvest, while onions are cured in the field
= more severe infection
- Softening of the scales, which appears water soaked
- Control:
 - Dry onions in the field for 2 days
 - bulbs should be further dried in shade for 10-15 days before storage



Neck Rot



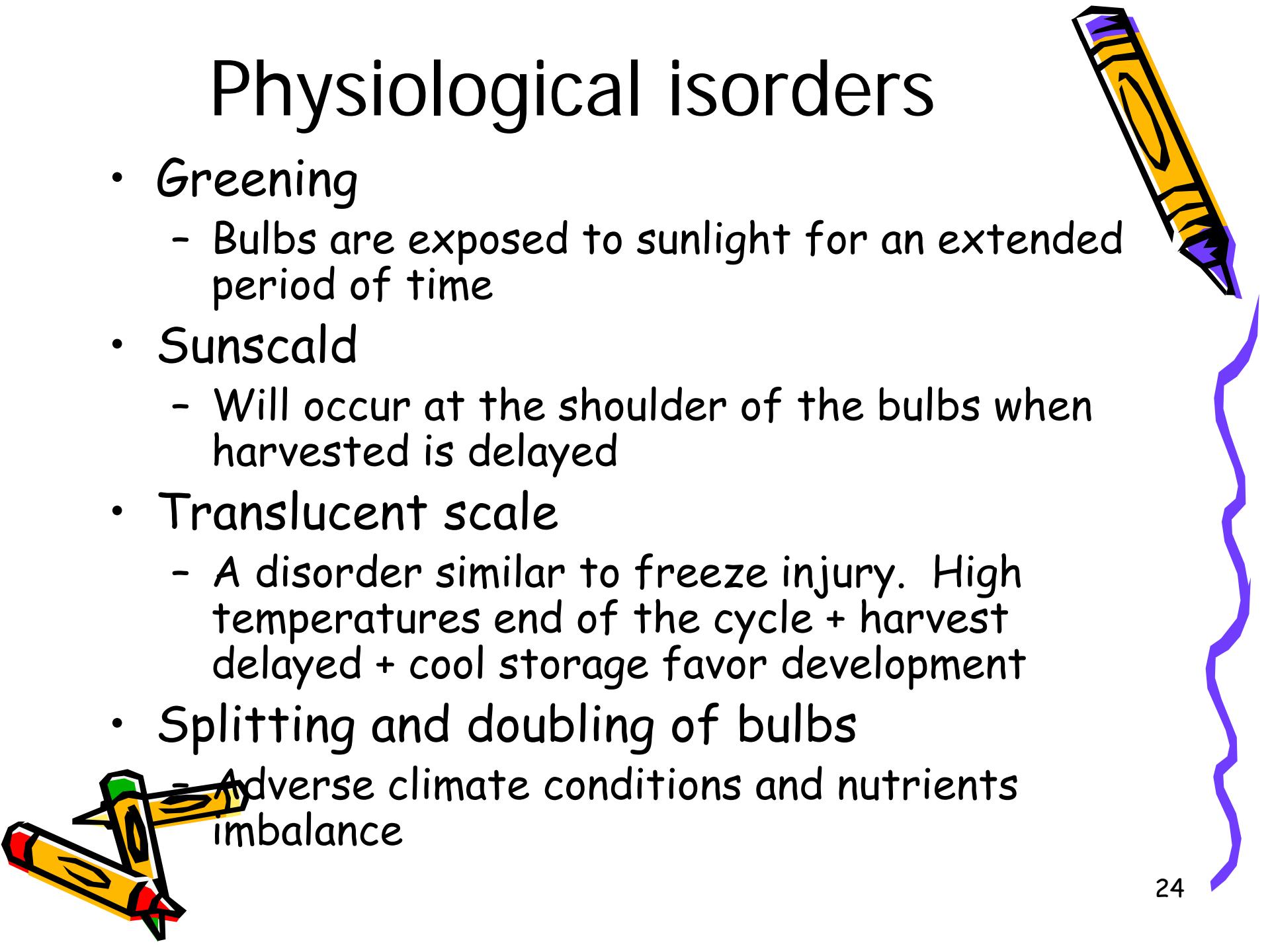
Bacterial Soft Rot

- Problem in many vegetables during storage
- Develop in Onions after a heavy rain or after irrigation with contaminated water
- Control
 - Harvest on time
 - Handling with care
 - Storage on cool dry areas



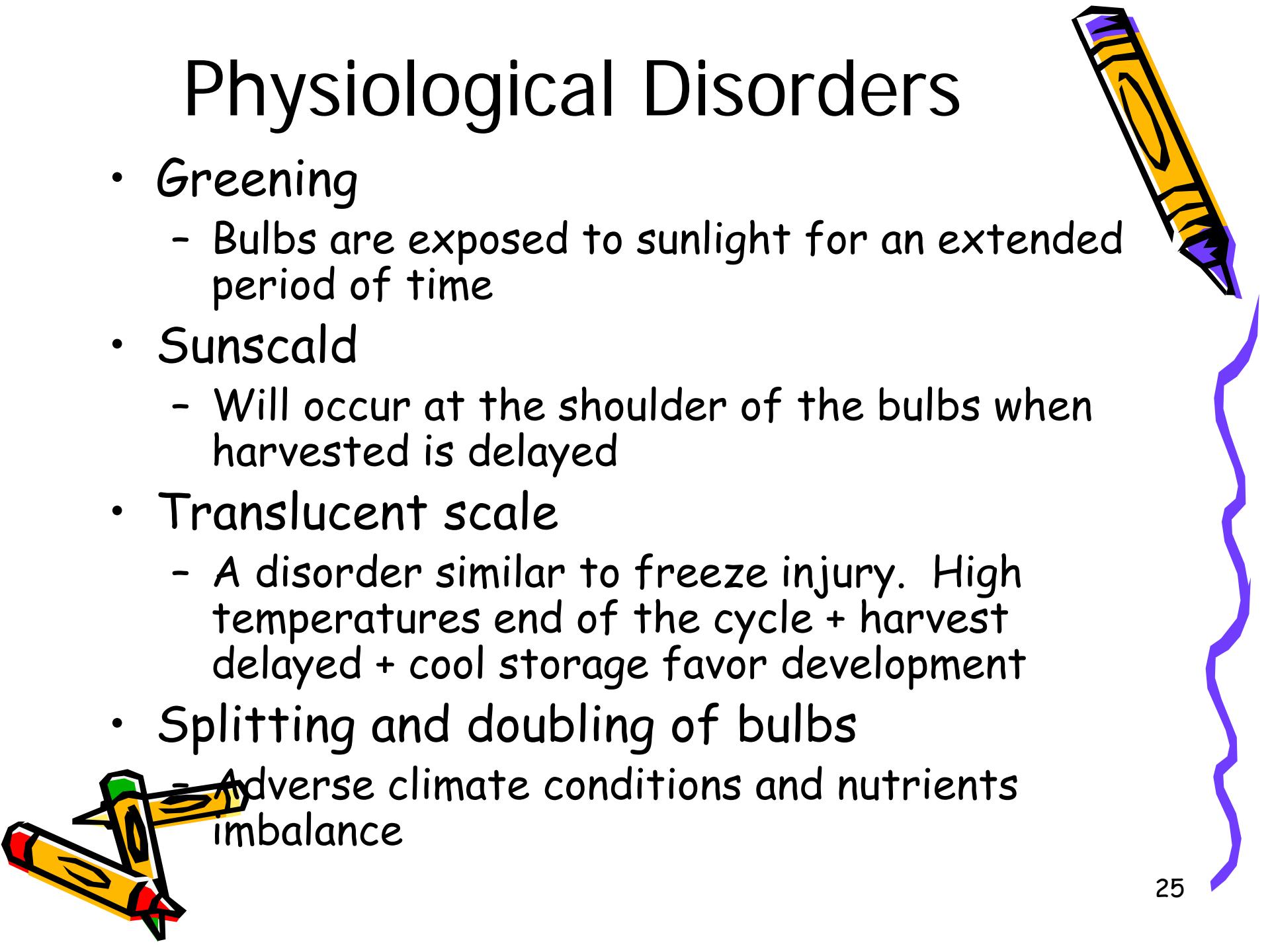
Physiological disorders

- Greening
 - Bulbs are exposed to sunlight for an extended period of time
- Sunscald
 - Will occur at the shoulder of the bulbs when harvested is delayed
- Translucent scale
 - A disorder similar to freeze injury. High temperatures end of the cycle + harvest delayed + cool storage favor development
- Splitting and doubling of bulbs
 - Adverse climate conditions and nutrients imbalance

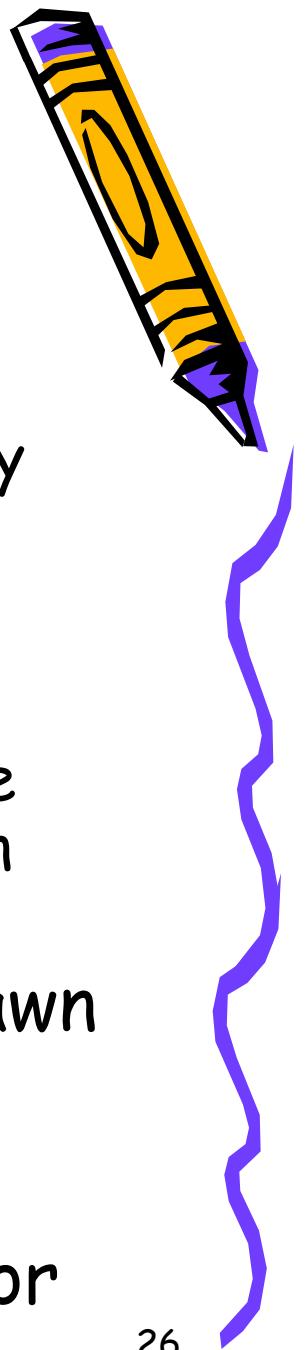


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Harvest and Handling

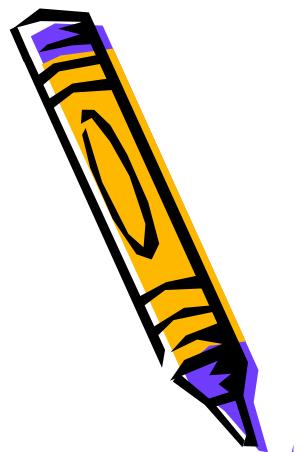


- Onions for bunching
 - Can be harvested from pencil size until they have proper bulb size
- Onions for storage
 - Onions intended for storage should be harvested when 50 to 80% of the tops have fallen over and bulbs are mature with a thin neck.
- To harvest, first a knife or lifter is drawn under a bed or row, cutting roots and loosening the soil.

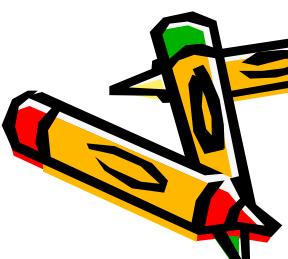


Harvested bulbs are kept in the field for 2-3 days before being cured.

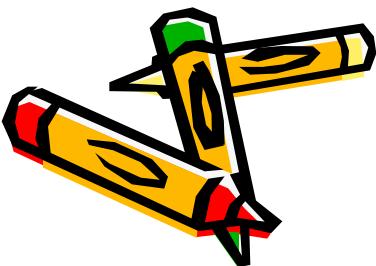
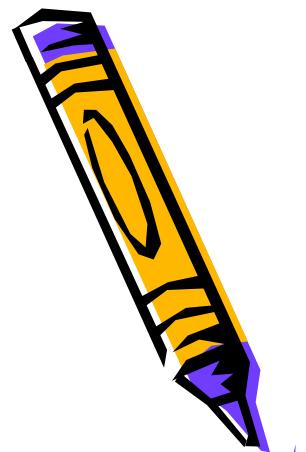
Harvest and Handling



- Curing
 - Allow natural dormancy to develop and to dry onion sufficiently
 - A properly cured onion will have a dry shrunken neck and dry outer scales.
 - Fully mature bulbs are harvested and cured by exposure to temperatures up to 35° in low (> 50 %) relative humidity.



Onion Harvesting, Red Creole



Marketing and Storage



- Marketing
 - Onions normally are shipped in 22.7-kg mesh bags. The bulbs are graded by size, with jumbo and pearl sizes frequently used by processors. Those intended for international trade are packed in 25-kg bags.
- Storage
 - Onions should be mature, cured, dried, and free from injuries and diseases before storage in a well ventilated area

Onion Marketing in ER

