NATIONAL EARTH-KIND™ ROSE FIELD TRIALS EXPERIMENTAL DESIGN

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RANDOMIZED COMPLETE BLOCK EXPERIMENTAL DESIGN

Advantages

- Randomized complete block, the experimental design chosen for these trials, is the strongest design possible for field research.

- Having replicated blocks enables us to reduce experimental error, which results in a stronger, more precise study.

    - For example, the soil conditions across a field can be different, or one end of the experimental area may be lower and thus remain wet longer. The remedy? Divide the field into several smaller blocks. The growing conditions within a block are apt to be much more uniform than across an entire field - thus fewer unwanted variables and a stronger experimental design.

Characteristics

- One plant of each cultivar per block.

- 3 blocks (or replications) at each site will be employed for these trials.

- At each trial site across the nation, **'Carefree Beauty' should always be included** as one of the experimental cultivars to serve as a nationwide control and basis for comparison among different sites.

Randomization

- The planting order should be **re-randomized** for each block.

    - This is to ensure that no particular cultivar always occurs at the same position within the block.

        - Example: It would skew the results if a given cultivar was always planted at the edge of the plot (where it would receive more air circulation and thus have less chance of disease).

    - The easy way to re-randomize is to write the name of each cultivar being tested on a small slip of paper (one name per slip). Put all the slips in some kind of a container (e.g. hat, bowl, box), shake the container vigorously to thoroughly jumble the paper slips, then draw the slips out one at a time. The order in which the cultivar names (i.e. paper slips) are drawn indicates the order in which they should be planted in Block 1.

        - Place paper slips back into the container, shake vigorously, draw out the names for Block 2.

        - Place paper slips back into the container, shake vigorously, draw out the names for Block 3.

Randomization - cont'd

- Example:

- Cultivars being tested: Carefree Beauty (control)
  Earth Song
  Polonaise
  Winter Sunset

North

Block 1	Block 2	Block 3
Earth Song	Polonaise	Carefree Beauty
Polonaise	Winter Sunset	Earth Song
Carefree Beauty	Earth Song	Winter Sunset
Winter Sunset	Carefree Beauty	Polonaise

Physical Arrangement of Blocks

- SIDE-BY-SIDE METHOD

Block 1	Block 2	Block 3
X	X	X
X	X	X
X	X	X

- IN-LINE METHOD

Block 1

X

X

X

Block 2

X

X

X

Block 3

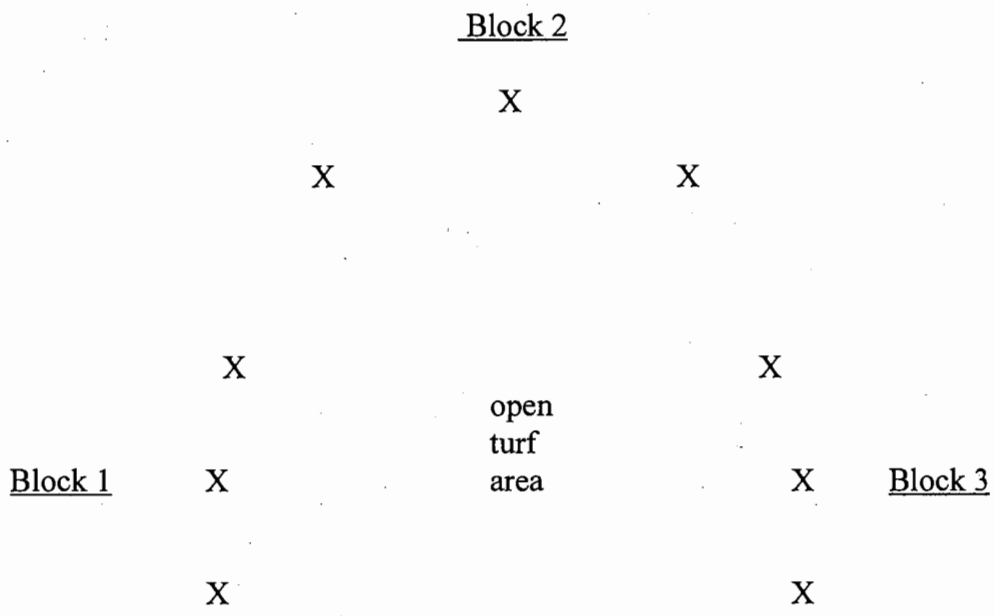
X

X

X

Physical Arrangement of Blocks - cont'd

- U-SHAPED METHOD



Note: The **open turf area can vary widely in size**, from a rather cozy area for two or three families to picnic together, up to the size of a football field. This is a great method to use when you want to visually define and delineate one end of a large open turf area in a park, etc.