Horticulture Science B/C

1. <u>DESCRIPTION</u>: Participants will be assessed on their knowledge of horticulture. Teams may grow from seed a bean plant and test multiple variables to achieve a maximum score.

   <u>A TEAM OF UP TO</u>: 2   <u>IMPOUND</u>: Yes (Satellite/traditional only)   <u>APPROXIMATE TIME</u>: 50 minutes

2. <u>EVENT PARAMETERS</u>: Each team is allowed one 8.5"x11" sheet of paper, which may be in a sheet protector sealed by tape or laminated, that may contain information on both sides in any form and from any source without any annotations or labels affixed along with two stand-alone non-programmable, non-graphing calculators. (Satellite/traditional format)
   a. miniSO: Each teammate is allowed one 8.5"x11" sheet of paper and one calculator. Competitors are not allowed to use any other electronic device other than to view the exam and record their answers.

3. <u>GROWING THE PLANT</u>:
   a. Teams will attempt at least 3 different growing variables with a goal to grow the longest green bean with the largest bean distribution for a Contender green bean plant (bush bean variety). Example conditions include, but are not limited to: varying the type of soil, fertilizer type/brands, frequency/amount of watering and exposure to light. Teams may need multiple plantings throughout the year.
   b. Log books should be used to document the progress of each type of growing variable. Information recorded must include: the growing variable, length of longest bean and bean distribution (# of beans on a single stem plant). Dates and times must be included for variables such as amount/frequency of watering or fertilizer utilization.
   c. Teams without a log book and/or plant will result in a penalty (see scoring below).

4. <u>IMPOUND</u>:
   a. Teams may impound a live unmodified, naturally growing bean plant and a Log Book. The Log Book and plant must be clearly labeled with the team # and participant names. Team members must clearly label an unmodified, naturally attached bean they intent to have measured for the Length Score.
      i. miniSO: Log Books will be scanned or photographed (information must be legible to count toward scoring) and will be uploaded by the coach to the designated folder outlined by the tournament director.
   b. Participants must be able to answer questions from the Event Supervisor, either during impound or during the written exam period, related to the growing of their green bean plant.

5. <u>THE COMPETITION</u>:
   a. Teams will be given 50 minutes to complete the written exam consisting of multiple choice, matching, T/F, essay and/or short answer.
   b. Exam content will include aspects of horticulture including the three subset areas: pomology, olericulture, and ornamental horticulture. Topics will include the importance/advantage of horticulture techniques, equipment and career opportunities. Participants should also know which garden plants grow best in certain climates zones, which grow well together and which compete and should be avoided. Specialized propagation techniques such as budding, grafting, and micropropagation along with genetic engineering will only be covered at the Division C level.
      i. A minimum of 20% of exam questions will come from the three main subject areas.
   c. During the written exam, at least one team member will bring their plant to the Event Supervisor to measure the longest green bean and count the number of beans. Measurements are recorded to the nearest mm.
      i. miniSO: On the day of competition, teams will take a photo of their unmodified, naturally attached bean. The photo should be against a white background with a ruler in cm next to the bean. This photo will be uploaded by the coach.

6. <u>SCORING</u>:
   a. Highest Final Score wins.
   b. Final score = Exam Percentage/2 (max 50 points) + Length Score + Distribution Score + Log Book Score
      i. Length Score: 0.1pts will be awarded for each mm of the bean length. (e.g. Bean length of 152 mm will receive 15.2 points for the Length Score)
      ii. Distribution Score: 1 point will be awarded for each bean growing on the single stem plant. Beans must be >10mm to be counted as a bean.
      iii. Log Book Score (max 12 points):
         • 1 point per growth variable tested - max 3 points

- 1 point for documenting longest bean – max 3 points
- 1 point for documenting bean distribution – max 3 points
- 1 point for each replanting attempt – max 3 points

    iv. Scoring example: Exam Score was 80%, Length Score was 15.2, Distribution Score was 12, Log Book Score was 10. Final score = 80/2 + 15.2 + 12 + 10 = 77.2.

c. Penalty: Teams that do not impound a log book and/or plant or are unable to answer questions about their growing experiments from the Event Supervisor will not receive a Length, Distribution, and Log Book Score.

d. Ties are broken by pre-selected exam questions chosen by the Event Supervisor.