**SORGHUM**

*Sorghum bicolor*

**Equipment**

A pair of scissors. forceps, fine pointed needle, thermometer, Hot water container, rubber bladder, camel hair brush, Petri dish, methylated spirit, lead pencil and tag

**Procedure**

Sorghum is an often cross pollinated crop. Blooming starts in the upper most panicle branch and progresses downward. All the flowers in a panicle bloom Within 6-9 days. Pollen of sorghum loses its viability very rapidly. The stigma is receptive ‘1-2 days before the opening of flower and continues to be receptive for 8-16 days after blooming.

**Selfing**

Cover the panicle with a Kraft paper bag before the opening of flowers. Mere bagging of the panicle will result in self-pollination, avoid foreign pollen contamination.

**Crossing**

**Emasculation**

You can use two methods for emasculation.

**i. Hand Emasculation**

1. In the evening, visit field and select a desirable plant
2. Retain 8-15 florets on a panicle and clip off the rest with the help of a pair of scissors.
3. Cut off 1/3 of the upper portion of the floret very carefully
4. Open the glumes of the floret very gently with a fine pointed needle and forceps by holding the floret with thumb and the fore-finger
5. Remove the anthers very gently with a forceps. taking care the pistil is not damaged
6. Cover me panicle with Kraft paper bag.

**ii-Hot Water Emasculation**

1. Select the panicle whose flowers are not yet opened-
2. Place a large rubber bladder on the panicle and tie it with the peduncle by a jute twine (seba).
3. Punch the bladder on one side near the mouth.
4. Insert the centigrade thermometer in the mouth of the bladder
5. Heat the water in the container on the stove.
6. Take the hot water from the container and pour it into the bladder through the punched hole
7. Let the panicle remain dipped in the hot water with a temperature ranging from 42-48 C for about ten minutes
8. Keep an eye on the thermometer
9. Maintain the prescribed temperature by adding the hot or cold water
10. Remove the bladder from panicle after exposing the panicle to a desirable temperature
11. Cover the panicle with a Kraft paper bag. The pollen is killed with the hot water treatment

**Pollination**

1. In the evening bag the panicle of the male parent before anthesis with a Kraft paper bag
2. Next morning collect the pollen grains from the bagged plant and place them in the petri dish
3. Dust the pollen on the emasculated floret with the camel hair brush after removing the Kraft paper bag or place the mature anther within the emasculated floret
4. Again cover the panicle with the respective bag
5. Sterilize your hands and equipment with Methylated spirit after every pollination.

**Labelling**

Tag the plant, indicating the name of the cross, date of pollination and your signature. Write the-female parent first and then the name of the pollen parent (male). Always use lead Pencil as it is water proof and will, not be damaged during rains or due to dew.