

Duchy College, Rosewarne

Micro-propagation of Winter Cauliflower – Wednesday 30th March 2011

The Brassica family provides many different vegetables throughout the year:

Cauliflower, Spring Greens, Cabbage, Calabrese, Broccoli, Brussel Sprouts, Swedes, Turnip, Kohlrabi, Radish.

The Winter Cauliflower crop is grown on 2,250 ha. Of land in Cornwall to provide vegetables from the end of October to early May

Approximately 20,000 cauliflowers/ha. Are planted, but usually around 70% are marketable. Cauliflower breeding work has improved the uniformity of the crop in Cornwall by producing F hybrids so that only 4-5 harvests are necessary to clear the field whereas open pollinated plants require 13 or more passes which is not very sustainable. Extra traffic through the crop also increases the damage to the curd. Breeding can create varieties more suited to the local climate.

Today you will be beginning the process of improving the cauliflower through the micro-propagation of small pieces of floral buds (curd) to produce vegetative shoots which can then be grown on to be used in a breeding programme.

Method

Put on plastic coats and gloves.

Everyone to cut 5 small pieces of cauliflower using the scalpel provided and place in the empty pot.

Add the 20% bleach solution (red dot) and a few drops of wetter (green dot). Place lid onto pot and swirl gently for 20 minutes.

Tipp off the bleach solution and rinse the pieces of cauliflower two times with sterile distilled water (white dot).

Put the clear plastic bag on the table and carefully place the glass tile and bag of swabs inside. Place the sterile pack of scalpel and tweezers inside, too. Put the 5 pots of nutrient jelly close by.

Wipe over the glass tile with one of the swabs and empty the cauliflower pieces onto it. Carefully unwrap the scalpel and tweezers and place either side of the tile.

Cut a small slice of tissue from the base of each of the 5 sterile cauliflower pieces and with your tweezers place them carefully in the pot jelly. Replace the lid. Label with your name.