

國立嘉義大學 99 學年度
園藝學系碩士班招生考試試題

科目：專業英文

一、Translate the following paragraph into Chinese and give one example of horticultural progress in Taiwan. (25 分)

Horticulture is the art and science of the cultivation of plants. Horticulturists work and conduct research in the fields of plant propagation and cultivation, crop production, plant breeding and genetic engineering, plant biochemistry, and plant physiology. The work particularly involves fruits, berries, nuts, vegetables, flowers, trees, shrubs, and turf. Horticulturalists work to improve crop yield, quality, nutritional value, and resistance to insects, diseases, and environmental stresses.

二、Translate the following paragraphs into Chinese. (25 分)

1. The most common form of embryogenesis is zygotic, but plant cells can undergo several other pathways to make embryos. Differentiated somatic cells can be induced to undergo embryogenesis, usually as a result of hormone treatments. Stress treatments cause microspores to become embryogenic and produce haploid embryos instead of pollen grains.
2. Complex pollen-pistil interactions are vital for successful fertilization and reproduction in flowering plants. The tissue of the pistil acts as a physical and chemical interface between the male and female gametophytes, beginning at the stigma surface during pollen germination and continuing until successful fertilization at the ovary.

三、Translate the following paragraph into Chinese. (25 分)

Studies on fruit ripening processes showed that tissue calcium content usually affects senescence aspects e.g. respiration rate. Pre and postharvest application of calcium (Ca) prevented postharvest disorders, retarded fruit ripening and decreased postharvest fruit weight loss and decay. It also prevented fruit softening during storage and delayed total soluble solids decrease especially when it was combined with 45 °C hot water treatment. Calcium dipping did not affect titratable acidity. Postharvest heat treatment decreased fruit damage against pathogen attack, modified fruit responses against other stresses and kept fruit quality during storage. Heat treatment can delay fruit softening in different fruits. Heat treatment also was effective on fruit flavor characteristics e.g. soluble solids content and titratable acidity. Heat treated strawberry fruits showed higher levels of ascorbic acid than the

controls, after 7 days but not after 14 days. Garcia et al. (1995b) showed that untreated fruits effectively maintained the brightness of skin. No clear differences were observed on the red color (a^*) between heat treated and control fruits. Heat treatment diminished fruit lightness (L^*). In addition, the heat treated fruits showed higher hue angle than controls.

四、Translate the following paragraphs into Chinese. (25 分)

1. “Periclinal chimera” : The dicot shoot meristem is usually organized into three layers – LI, LII, and LIII. Typically, LI gives rise to epidermal cells. LII provides the next inner layer of cells and also the gametes. LIII cells become the inner most cells and the vascular system. A chimera is a meristem with different genetics in one or more of the layers of the meristem. Types of chimeras include: periclinal, mericlinal, and sectorial.
2. The most stable chimera type is the periclinal chimera. In this type of chimera, one entire layer in the meristem contains the mutation. This is a common type of chimera for variegation. The image to the right illustrates a “sandwich” periclinal chimera where two normal layers surround a central mutated LII layer. In this cause, the LI and LIII produce cells with normal chlorophyll production while the LII does not produce chlorophyll and is colorless resulting in a variegated leaf.