

## 2011 Section B Q1

**(a) Using the information provided in the chart, comment and elaborate on consumer consumption of milk and dairy products in Ireland.**

This chart shows that milk is the most consumed dairy product by the Irish at 39%. This is accurate as milk is used as a drink, in cereals, in cooking and baking. Milk is widely available throughout Ireland in a variety of ways- condensed, evaporated and powdered, and at reasonably cheap prices.

Yoghurt is the second highest consumed at 26%. Yoghurt is used also in a variety of ways - yoghurt drinks, sauces, desserts, cooking and baking. Yoghurt can be used instead of cream as a healthier option. Yoghurt is also a convenient food for a snack or in children's lunchboxes, providing protein and calcium.

Cheese is the third most consumed dairy product at 18%. Cheese is available in a wide variety of types and tastes - low fat, processed cheddar, blue cheese, etc. It is a HBV food that provides protein and calcium. It is popular as a filling in a sandwich as it is nutritious and good value.

Cream and fats are the least consumed at 17%. It is good that cream and fats are the least consumed as they are high in saturated fats and cause high cholesterol. Again, cream and fats come in a variety of ways including cream, butter and ice-cream.

**(b) Give an account of protein and refer to: the structure of an amino acid, how a peptide bond is formed and properties.**

Proteins are made up of amino acids. Each amino acid contains a carbon, hydrogen, oxygen and nitrogen atom. The carbon atom is in the centre which has a bond with the hydrogen atom (H), amino acid group (NH<sub>2</sub>), the carboxyl group (COOH) and the variable (R).

A peptide bond is formed when 2 amino acids join together. One hydrogen from the NH<sub>2</sub> atom of one amino acid joins to OH from the COOH on the other amino acid, resulting in a condensation reaction releasing a water molecule.

Properties of protein include:

Denaturation: The protein chain unfolding, changing the structure permanently. The change may be a result of agitation – mechanical action (whisking egg whites), chemicals – adding acids and alkalis (lemon juice causes milk to curdle), heat – albumin in eggs coagulates and sets, enzymes – rennin in the stomach coagulates casein.

Solubility: Most proteins are insoluble in water except egg white in cold water and collagen in hot water.

Maillard reaction: A non-enzymic browning that results when an amino acid reacts with carbohydrates in dry heat e.g. toasting.

Elasticity: Gluten is very elastic, it allows breads to rise during baking.

**(c) Describe one process used by manufacturers to prolong the shelf life of milk. In your answer refer to: name of process, how the process is carried out and the effect of the process on the nutritive value of milk.**

Manufacturers prolong the shelf life of milk by UHT (Ultra Heat Treatment). The milk is heated to 132 degrees for 1-3 seconds by pouring it over a heated surface. It is then cooled to 10 degrees and packed in a sterile container. UHT causes vitamin B and vitamin C to be lost in the milk.

**(d) Comment and elaborate on the growing popularity of foods produced by small businesses and home enterprises.**

There is a growing popularity of small businesses and home enterprises producing foods. This is due to the foods being healthier, more nutritious and tastier. This can also be a result of using organic foods. Including organic ingredients increases the cost of the food but people are willing to pay the extra cost as the quality is better.

The availability of these products has increased because of better transport but also because of farmers markets and supermarkets. Supermarkets e.g. Supervalu are now recognising and selling local produce which is helping the popularity of small businesses and home enterprises to grow.

The small businesses and young enterprises provide employment across the board – locally and widespread to suppliers. This is valuable to the economy. Local produce is generally used which benefits local farmers trying to make a living. It is good for supporting local and keeping the money in the area as well as jobs.

People nowadays have changed their diets e.g. gluten-free or vegan which a lot of these small businesses and home enterprises specialize in. This results in a growing popularity for these foods.

However big supermarkets are also producing own brand products which lessens the shelf space for small businesses and home enterprises, making it more difficult for these businesses to grow.