

1. PROTEIN—COAGULATION	2. PROTEIN—EGGS	3. ENZYMATIC BROWNING
<p>Solidify— Make or become hard or solid.</p> <p>An enzyme is a type of protein. Protein molecules can be easily denatured due to acid (A change in PH) or heat.</p> <p>Coagulation is the change in the structure of protein (from a liquid form to solid) brought about by heat, mechanical action or acids.</p> <p>Denatured protein molecules take up more space than normal. Because of this they knock into each other and start to join together which is called coagulation.</p> <p>Coagulation is irreversible, the protein cannot be turned back into a liquid form.</p> <p>Coagulation changes the appearance and texture of foods.</p> <p>For example, frying an egg. As heat is applied, the egg turns from a liquid form to a solid.</p> <p>The same happens when boiling an egg for different amounts of time.</p>	<p>Solidify—Make or become hard or solid.</p> <p>Coagulation is the change in the structure of protein (from a liquid form to solid) brought about by heat, mechanical action or acids.</p> <p>Coagulation changes the appearance and texture of foods.</p> <p>Due to their ability to coagulate, eggs are used in recipes to hold other ingredients together. <i>I.e. quiche or a breadcrumb or a batter coating on fish.</i></p> <p>If a food containing protein is overcooked, the coagulated protein molecules tighten up and squeeze out the water that they are holding.</p> <p>This is why overcooked meat or fish is dry and chewy and why overcooked scrambled eggs become rubbery and watery.</p>	<p>Enzyme—A natural substance that are found in foods all living things.</p> <p>Enzymes cause foods to ripen. Enzymes change the texture, flavour and aroma of foods.</p> <p>Enzymic browning is an chemical reaction that takes place in some foods, mostly fruit and vegetables, causing the food to turn brown.</p> <p>Oxygen causes the browning, this is called oxidation.</p> <p>This can appear when you cut, bite, crush, grate, bruise or peel fruits or vegetables.</p> <p>Enzymatic browning can result in negative effects on colour, taste, flavour and nutritional value.</p> <p>Adding citric, ascorbic or other acids, such as vinegar, lowers the pH and prevent enzymatic browning</p>
4. PREVENTION OF ENZYMATIC BROWNING	5. CARBOHYDRATES—STARCH	6. CARBOHYDRATES—SUGARS
<p>Catalyst—A biological catalyst has the ability to speed up chemical reactions. An enzyme is a catalyst.</p> <p>Enzymic browning is an chemical reaction that takes place in some foods, mostly fruit and vegetables, causing the food to turn brown.</p> <p>Oxygen causes the browning, this is called oxidation.</p> <p>To prevent enzymatic browning you can:</p> <ul style="list-style-type: none"> • Acid (E.g. lemon juice) This denatures the enzyme protein. • Cooking the food. • Putting the food into cold water. <p>Blanching—You can also blanch fruits and vegetables to prevent enzymatic browning.</p> <p>Blanching is to plunge the food into boiling water, drain the water, plunge into ice cold water so they retain their colour and flavour, drain again and freeze them.</p>	<p>Gelatinisation—Occurs when starch (carbohydrate) granules are heated in liquid, causing them to swell and burst resulting in the liquid thickening.</p> <p>Foods such as porridge, rice pudding, pasta and savoury rice all rely on gelatinisation.</p> <p>A roux sauce is also known as a béchamel. This is used in recipes such as lasagne. Roux sauce is a mixture of butter, milk and flour.</p> <p>Flour contains starch which is a type of carbohydrate. As the flour reaches a high temperature the starch granules begin to swell and absorb the liquid.</p> <p>The starch granules then bump into each other releasing starch into the liquid. The starch released into the liquid causes it to thicken. As the mixture cools it thickens even more, setting and firming.</p>	<p>Gelatinisation—Occurs when starch (carbohydrate) granules are heated in liquid, causing them to swell and burst resulting in the liquid thickening.</p> <p>Sugar also effects the thickening of a sauce.</p> <p>Ingredients such as sugar can effect the rate that the water is absorbed.</p> <p>For example, a sauce containing sugar. Sugars are competing with the starch to absorb the liquid.</p> <p>This can disrupt and slow down the process, meaning it takes longer for the starch to thicken the sauce.</p> <p>If too much sugar is present it can completely prevent gelatinisation.</p>