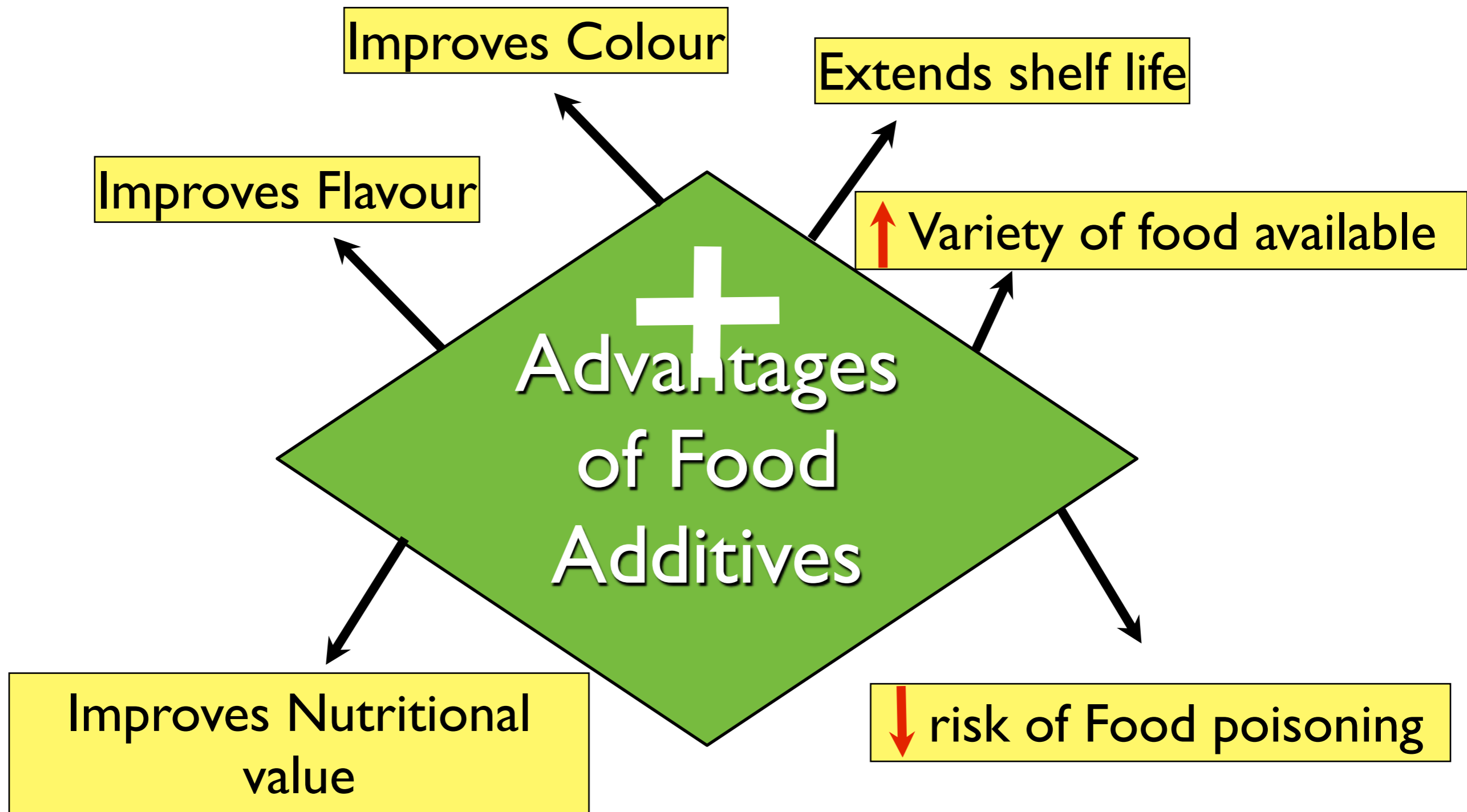


Food Additives Leaving Certificate Notes

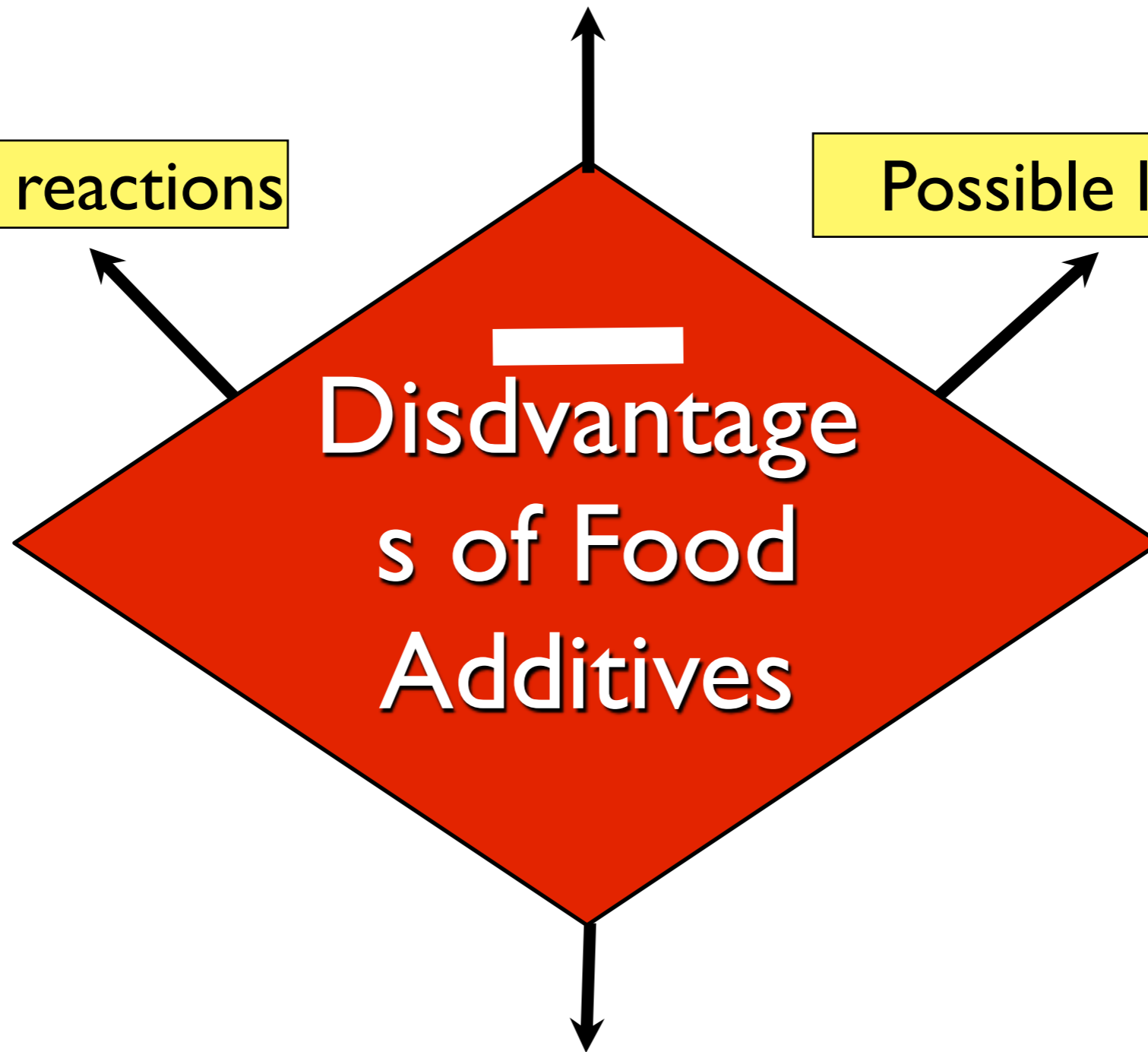




Lack of info on long term accumulation in the body

Allergic reactions

Possible link to Cancer



Can deceive the consumer

Classification of Additives

Colourings (E100-E199)

Preservatives (E200-E299)

Anti-oxidants (E300-E399)

Physical conditioning agents (E400-E499)

Flavouring (NO E-number)

Sweeteners (E900-E999)

Nutritional supplements

Colourings (E100-E199)

What is the function of Colourings?

- (1) improve colour of food
- (2) improve colour of processed food
- (3) replace colour lost during processing
- (4) to meet consumer demands

Colourings (E100-E199)

Natural

Chlorophyll (E140)

Caramel (E150)

Carotene

Artificial

Tartazine (E102)

Amaranth

Preservatives (E200-E299)

What is the function of Preservatives?

- (1) prevent growth of micro-organisms
- (2) extend shelf life
- (3) make 'out of season' food available
- (4) prevent food poisoning

Preservatives (E199-E299)

Natural

Sugar

Salt

Alcohol

Vinegar

Smoke

Artificial

Sulphur Dioxide

Sorbic Acid

Benzoic Acid

Preservatives (E199-E299)

Natural

Sugar



Salt



Alcohol



Vinegar



Smoke



Preservatives (E199-E299)

Natural

Sugar



Salt



Alcohol



Vinegar



Smoke



Preservatives (E199-E299)

Artificial

Sulphur Dioxide

Sorbic Acid

Benzoic Acid



Preservatives (E199-E299)

Artificial

Sulphur Dioxide



Sorbic Acid



Benzoic Acid



Anti-Oxidants (E300-E399)

What is the function of Anti-Oxidants?

- (1) prevent oxidative rancidity
- (2) reduce food waste

Anti-oxidants (E300-E399)

Natural

Vit A (beta-carotene)

Vit C (ascorbic acid)

Vit E (tocopherols)

Artificial

Butylated hydroxyanisole (BHA)

Butylated hydroxytoluene (BHT)

Anti-Oxidants (E300-E399)

Natural

Vit A (beta-carotene)



Vit C (ascorbic acid)



Vit E (tocopherols)



Anti-Oxidants (E300-E399)

Artificial

Butylated hydroxyanisole (BHA)

Butylated hydroxytoluene (BHT)



Flavourings (no E number!)

What is the function of Flavourings?

- (1) improve flavour of foods
- (2) increase attractiveness of food
- (3) substitute/ replace /enhance flavour of food

Flavourings (no E number!)

Natural

Sugar

Salt

Herbs

Spices

Artificial

Esters

Amyl Acetate (pear)
Ethyl Acetate (rum)

Aldehydes

Benzaldehyde (Almond / Cherry)
Maltol (freshly baked bread smell)

Flavour Enhancers (E620 - E640)*

What is a Flavour Enhancer?

- (1) Substances that have no flavour themselves
- (2) They intensify the flavour of the food that they are added to
- (3) e.g Monosodium Glutamate (MSG)
- (4) Used in packet soups, crisps, Chinese food, sauces

Flavour Enhancers (E620 - E640)*

Write a short note on MSG

- (1) Flavour enhancer
- (2) Also known as E621
- (3) Used in Pringles, soups, sauces, snack foods
- (4) Not allowed in baby food
- (5) Made from Glutamic acid (amino acid)
- (6) Large amounts can cause a reaction known as 'Chinese restaurant syndrome'
- (7) Symptoms include dizziness, neck pain, palpitations

Physical Conditioning agents
(E400-E499)

What is the function of
Physical Conditioning agents?

(1) improve texture and consistency of food

Physical Conditioning agents (E400-E499)

Type	Function	Examples	Use
Humectants	-prevent food drying out	Sweeteners - sorbitol & mannitol	-sweets -confectionary
Polyphosphates	-prevent lumping	Magnesium carbonate	-cake mixes
Buffers	-control pH of food		
Anti-caking agents	-prevent lumps in dried foods		-flour -baking powder
Stabilisers	-assist emulsifiers prevent emulsion separating	Carrageenan Guar gum	-ice cream -confectionary
Emulsifiers	-force oil & water to mix without separating	Leicithin (egg yolk) Alginates (seaweed) Glycerol monostearate	Mayonnaise Ice cream

Sweeteners (E900-E999)

What is the function of Sweeteners?

- (1) *sweeten food*
- (2) *used in low kcal / low sugar foods*
- (3) *used in diabetic foods*

Sweeteners (E900-E999)

Natural

Sugar

Fructose

Glucose

Artificial

Intense Sweeteners

Aspartame
Saccharin

Bulk Sweeteners

Mannitol
Sorbitol
Xylitol

Sweeteners (E900-E999)

Differentiate between the 2 types of
Artificial sweeteners used in food production

Intense Sweeteners:

- much sweeter than sugar
- used in small amounts
- low in Kcal
- Aspartame (NutraSweet) , Saccharin (Hermesetes)

Bulk Sweeteners:

- same sweetness as sugar
- used in large amounts
- high in Kcal
- Mannitol, Sorbitol, Xylitol

Nutritional Supplements / Nutritive Additives

What is the function of
Nutritional Supplements / Nutritive Additives?

- (1) replace nutrients lost during processing
- (2) add nutritive value to food
- (3) meet consumer demand for healthier foods
- (4) to increase sales

Nutritional Supplements / Nutritive Additives

Example	Use
Vitamin A Vitamin D	Margarine Low fat milk
B group Vitamins	Breakfast cereals
Vitamin C	Fruit drinks
Iron	Breakfast cereals
Calcium	Milk & Flour

Food Additives & The Law

Explain how the use of Food additives in the food industry is controlled?

- (1) EC 1989 adopted a framework for controlling the use of Food Additives
- (2) Before a Food Additive is used it is tested & evaluated for its purity & safety
- (3) 'E' numbers are allocated when the additive is deemed to be safe for human consumption
- (4) Flavourings and Nutritive additives are not covered by EU directives
- (5) Under EU law additives must -
 - not reduce nutrient content of food
 - not deceive the Consumer
 - not disguise faulty processing
 - not be a health hazard
 - be used in the smallest quantity

Food Additives & The Law

List the Agencies involved in the regulation of Food additives ?

- (1) European Scientific Committee for Food (ESCF)**
- (2) Joint Expert Committee on Food Additives (JECFA)**
- (3) Food and Agricultural Organisation (FAO)**
- (4) World Health Organisation (WHO)**
- (5) Food Safety Authority of Ireland (FSAI)**
- (6) Department of Agriculture and Food**