

Comic Strip Answers

Comic Strip 1 - Finlay's Oats

Q1

Three from:

winter wheat, spring oats, winter oilseed rape, winter barley, spring barley, vining peas, potatoes, vegetables, set aside

Q2

The vehicles have on-board computers linked to satellites.

Q3



Q4

The highest pH is 7.0 and the field has a neutral pH.

Q5

$\frac{1}{2}$ of 1980ha = 990ha

990ha x 6.5t/ha = 6435 tonnes of oats

Total storage is 14000 tonnes

So storage of oats is $6435 / 14000 = 0.459$ of the whole storage

So rounded to the nearest percentage $0.459 \times 100 = 45.9 = 46\%$

Finlay uses around 46% of his storage for his oats.

Comic Strip 2 - Karen's Eggs

Q1

Karen's farm produces Free Range, Organic, Barn and Enriched Colony eggs.

- a) Free-range eggs are laid by hens that can go outside during daytime to an area with vegetation and have quite a bit of room because they have a stocking density of less than 2500 birds per hectare.
- b) Organic eggs are laid by free range hens - their food and the land they are on must be organic.
- c) Barn Eggs are laid by hens that live in similar conditions to free range hens, but they do not have outdoor access.
- d) Enriched colony eggs are laid by hens that are in groups of up to 80 birds indoors.

Source of further information: <https://www.egginfo.co.uk/egg-facts-and-figures/production>

Q2

The lion mark shows the hens are vaccinated against salmonella.

Q3

The chicken that laid this egg was in a Free-Range system because the code starts with number 1.

Source of further information: <https://www.egginfo.co.uk/british-lion-eggs>

Comic Strip 3 - Scott's Sheep

Q1

The Suffolk is a large stocky sheep with a black face and legs. It has down-turned ears. It grows fast in good conditions to become large with lots of muscle. Rams can be used to breed big lambs with other Suffolk Ewes or cross with other breeds.

The Shetland is a fine-boned, small and tough to live in the parts of the Northern Islands with rougher grazing. It can be several colours and often has horns. It has lean meat, and ewes are sometimes bred with rams from larger breeds with more muscle to have lambs with a mixture of toughness and muscle for meat.

Source of further information: <https://www.nationalsheep.org.uk/uk-sheep-industry/sheep-in-the-uk/sheep-breeds/>

Q2

The Suffolk is sold by Scott to farmers that need a ram (adult male) that can breed with smaller breeds of ewes (adult female) so their flock will have the inherited characteristics of fast-growing sheep with good muscle to make lots of meat.

Q3

The male sheep breeds with several female sheep so it costs less per lamb to scan the male for good inherited breed characteristics. He looks for muscle and fat to see which will give lambs with good meat carcasses (the part of the dead lamb that the butcher uses).

Q4

Air is black; fat is dark grey; muscle is light grey and bone is white.

Q5

If he scans the ram, he can prove how much of it is muscle (and how much is fat) while it is still alive. He then gets more money for the good rams as breeding stock than it costs to have the scan.

Comic Strip 4 - Ian's Sprouts

Q1

6 months

Q2

parsnips, kale, beetroot, cabbage, swede, turnips

Source of further information: <https://www.rhet.org.uk/media/1536/seasonality-calendar.pdf>

Q3

The leaves and stalks provide food (organic matter) for the soil. This helps the soil microorganisms, bacteria and worms. These creatures all have a role to play in breaking down the leaves and stalks and releasing the nutrients back into the soil.

Q4

People sit in the machine. The machine cuts the plant from the ground and the person puts the sprout stem into the machine, which separates the sprouts from the stems. The waste falls back onto the ground.

Source of further information: <https://www.youtube.com/watch?v=hkx3vLMcgOs>

Comic Strip 5 - Gordon's Biscuits

Q1

Mouldy food contains bacteria and fungi both of which can cause serious illnesses in both people and livestock. The mouldy food could make the animals that ate it ill and also contaminate the people working with it.

Q2

We could all be a bit more willing to eat wonky foods. A broken biscuit tastes just the same as a whole one!

Q3

Sieves separate out paper

Blowing air separates out plastic

Magnets separate out metals

Q4

Protein and fat are both important for producing muscle, which is what produces a good quality animal carcass.

Comic Strip 6 - James' Milk

Q1

500 acres

Q2

Recycled stone from the castle

Q3

22 cows and the milk was used to make butter

Q4

Cool the milk

Wash the machinery

Wash the floors

Mixed with cow poo (to make slurry) and spread on fields as fertiliser

Q5

A cow brush that helps keeps cows clean and helps with their blood circulation.

Comic Strip 7 - Natasha the Dairy cow

Q1

160 stalls each with a rubber mat covered in sawdust

Q2

Half of the year (6 months)

Q3

Some of the grass on the farm is left to grow and then cut in May and August. This cut grass is made into silage which is pickled grass. The grass is pickled by covering it with a plastic sheet to keep out all the air.

The process of stacking and squashing the grass is called buckracking

Q4

The lick provides extra minerals for good health

Q5

Grain husks, orange peel and sugarbeet

Comic Strip 8 - The Dairy Farm

Q1

300

Q2

130

Q3

Ayrshire, Holstein and Jersey

Q4

Jersey

Q5

The bulk tank cools the milk down

Q6

A tanker collects the milk from the farm and its taken to a processor to be bottled or made into other products like butter.

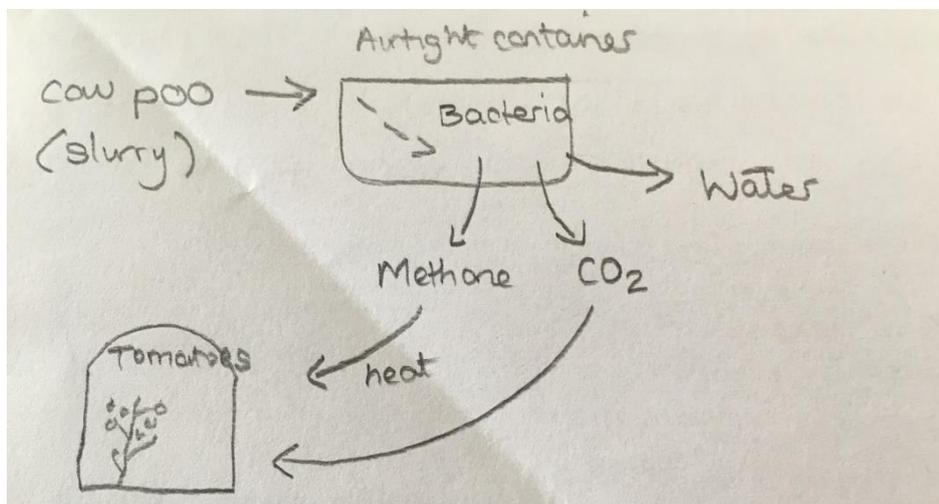
Comic Strip 9 - Jim's Tomatoes

Q1

450 tonnes is the total quantity

If 150 tonnes are cherry tomatoes, the % of cherry tomatoes is $150 / 450 * 100 / 1 = 33\%$

Q2



Q3

Jim is getting multiple products from his cows. He gets milk (but the price is not always good). He also gets a free heat supply for his tomatoes and CO₂ to help with ripening.

Q4

Rockwool is a product made from spun rock fibres (the rock is melted and so this requires a lot of energy). Rockwool has the benefit of being light and easy to move around and is good at retaining (holding onto nutrients so the plants get the correct nutrition. In contrast soil is heavy and its harder in enclosed systems to get nutrient levels just right.

Q5

No bees = no tomatoes as the flowers on the plant need to be pollinated before they produce tomatoes

Q6

March - November (9 months) $9 / 12 * 100 / 1 = 75\%$ of the year