

20.1 Food supply

Name: _____ Class: _____ Date: _____ **Total: 19 marks**

KEY WORDS monoculture 单一栽培 • livestock 牲畜 • weeds 杂草 • selective breeding 选择育种
• herbicides 除草剂

Objective

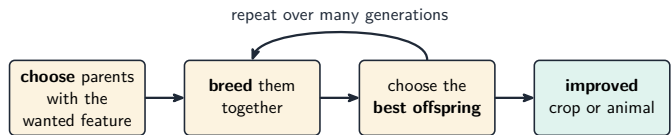
Build the skills to answer exam questions on **food supply** 食物供应 — methods of increasing it, and the pros and cons of **monoculture** 单一栽培 and intensive farming.

You must be able to:

- give the methods used to increase food production
- state the advantages and disadvantages of monoculture
- discuss intensive livestock farming

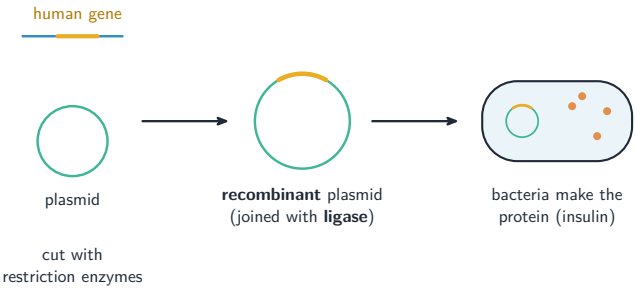
1 Worked examples

■ Increasing food supply



humans choose which breed (not the environment)

Methods: machinery, fertilisers, insecticides, herbicides, selective breeding



Genetic modification can raise food supply

- **monoculture:** big easy harvest but one pest can destroy it and biodiversity falls.
- **intensive livestock:** cheap meat but welfare and disease concerns.

2 Practice

2.1 State two methods used to increase crop yields. [2]

2.2 State what a monoculture is. [1]

3 Exam-style questions

3.1 Herbicides are used in farming to: [1]

- **A** kill insect pests
- **B** kill weeds
- **C** add nitrate
- **D** breed crops

3.2 A farmer grows a large monoculture.

(a) State one advantage of a monoculture. [1]

(b) State two disadvantages of a monoculture. [2]

3.3 A farmer plants one crop across a whole large field, uses fertiliser and pesticide, and keeps hens indoors in cages.

(a) Name **three** methods used to increase food supply, other than the ones described above. [3]

(b) State **two** advantages and **two** disadvantages of monoculture. [4]

(c) Explain how intensive indoor livestock production increases the yield of meat. [3]

(d) Give **two** concerns raised by intensive livestock production. [2]

Solutions

2.1 any two of: machinery; fertilisers; insecticides; herbicides; selective breeding.

2.2 growing one crop over a large area.

3.1 B. Herbicides kill weeds.

3.2 (a) a big/easy harvest.

(b) one pest or disease can destroy the whole crop; it lowers biodiversity.

3.3 (a) Any three of: machinery for ploughing, sowing and harvesting; irrigation to supply water; selective breeding, or genetic modification, for higher-yielding varieties; adding fertiliser or using pesticides and herbicides is also acceptable if not already described.

(b) Advantages: one crop can be sown, treated and harvested by the same machinery, so it is efficient and cheap; a large amount of one product can be produced for market. Disadvantages: pests and diseases of that crop spread very easily through the whole field; the same minerals are removed from the soil every year, so fertiliser use rises and biodiversity falls.

(c) The animals are kept warm, so less of their food energy is used to keep their body temperature up; movement is restricted, so less energy is used in moving; more of the energy in the food is therefore converted into growth, and food, water and medicine can be supplied exactly.

(d) Animal welfare — the animals cannot move or behave naturally; heavy antibiotic use encourages antibiotic-resistant bacteria, and large amounts of waste in one place can pollute water.