

BIOLOGY

BOOKS - NAVNEET PUBLICATION

INTRODUCTION TO MICROBIOLOGY

Examples

1. Which different microboes are useful to us?



2. Which different products can be produced with the help of microbes ?



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3. We use the fermentation process while conversion of milk into yoghurt. Which microbes are useful for this process?



4. Which different type of cheese are used in western food like pizza, burger, sandwich, etc. ?



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5. What is difference between those types of cheese?



6. What for Probiotic food is famous?



7. Which function are performed by enzymes secreted in human digestive system?



8. Give names of some such enzymes.



9. What do you mean by antibiotic?



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10. Which precautions should be taken about their consumption?



11. Which different materials are decomposed in biogas plant ?



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12. Which useful materials are obtained through biogas plant? Which is the fuel out of those?



13. In biogas plant, Decomposition occurs through which organisms?



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14. You must have seen or read the news of dead fishes or oily water accumulating at the sea coasts. Why does this happen?



15. How the bacteria present in soil and root nodules of leguminous plants are useful?



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Exercise

1. Enzyme _____ obtained from fungi is used to produce vegetarian cheese.

A. lipase

B. protease	
-------------	--

C. amylase

D. trypsin

Answer: B



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2. Milk is _____ at the beginning to destroy unwanted microbes.

A. pasteurization

- B. Vanillin
- C. coagulation
- D. decomposition

Answer: A



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3. _____ like compounds are formed due to lactobacilli that give characterstic taste to the yoghurt

- A. Lactose
- B. Caesin
- C. Acetyldehyde
- D. All the above

Answer: C



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4. Choose the correct alternative ana write its

alphabet against the sub - question number :

Methane can be obtained by

decomposition of urban agricultural and industrial waste aerobic anaerobic microbial anaerobic chemical A. aerobic B. anaerobic C. microbial anaerobic D. chemical **Answer: C**

5. Choose the correct alternative ana write its alphabet against the sub - question number : gas is considered to be the fuel of future.

Hydrogen

Nitrogen

Methane

Butane

A. Hydrogen

- B. Nitrogen
- C. Methane
- D. Butane

Answer: A



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6. Choose the correct alternative ana write its

alphabet against the sub - question number :

..... are mixed with waste materials at land-

filling sites for quicker decomposition

Microbes **Bioreactors** Fungi Worms A. Microbes **B. Bioreactors** C. Fungi D. Worms **Answer: B Watch Video Solution** 7. Choose the correct alternative ana write its alphabet against the sub - question number:
...... bacteria decompose the xenobiotic chemicals present in sewage.

- A. Hydrocarbonoclastic
- B. Decomposing
- C. E.coli
- D. Phenol oxidizing

Answer: D

8. Choose the correct alternative ana write its alphabet against the sub - question number:

Microbes are used for of environment polluted due to sewage.

- A. protection
- B. conservation
- C. bioremediation
- D. decomposition

Answer: C



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9. Choose the correct alternative and write its alphabet against the sub - question number :
...... is a powerful antibiotic against tuberculosis.

A. Streptomycin

B. Tetracycline

C. Rifamycin

D. Bacitracin

Answer: C



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10. Choose the correct alternative and write its alphabet against the sub - question number:

Bacteria used to clear the oil spills are called
........... bacteria.

A. phenol oxidizing

- B. electrolytic
- C. hydrocarbonoclastic
- D. decomposing

Answer: C



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11. Choose the correct alternative and write its

alphabet against the sub - question number :

..........-.... convert these salts of uranium into

insoluble salts.

- A. Saccharomyces
- B. Thiobacillus
- C. Acidobacillus
- D. Geobacter

Answer: D



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12. Choose the correct alternative ana write its alphabet against the sub - question number :

..... a byproduct of fermentation is a biopesticide.

A. Fluoroacetamide

B. Vanillin

C. Aspertame

D. Spinosad

Answer: D



13. Choose the correct alternative and write its alphabet against the sub - question number : beverage is obtained by fermentation of apple juice.

- A. Cider
- B. Wine
- C. Coffee
- D. Cocoa

Answer: A



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14. Choose the correct alternative ana write its alphabet against the sub - question number : Vinegar is the chemically acid.

A. Citric

B. Gluconic

C. Glutamic

D. Acetic

Answer: D

15. In which of the following industries are microbial enzymes not used?

A. Glass industry

B. Cheese industry

C. Tanning industry

D. Paper industry

Answer: A



16. Citric acid used in production of beverages, toffees, chocolates is obtained by fermentation of ______ by Aspergillus niger.

A. grapes

B. sugar molasses

C. apple

D. coffee nuts

Answer: B



17. Rewrite the statement using correct option and explain the completed statement
Salts which can be used as supplement of calcium and iron are obtained from ______

- A. carbonic acid
- B. acetic acid
- C. citric acid
- D. gluconic acid

Answer: D



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18. Rewrite the statement using correct optionand explain the completed statementProcess of ______ of milk proteins occursdue to lactic acid.



19. Rewrite the statement using correct optionand explain the completed statementProcess of ______ of milk proteins occursdue to lactic acid.



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20. Rewrite the statement using correct option and explain the completed statement Chemically, vinegar is ______



21. Rewrite the statement using correct option and explain the completed statement

Salts which can be used as supplement of calcium and iron are obtained from ______

acid.



22. Match the pairs:

*(1) 'A' group	'B' group
(1) Xylitol	(a) Pigment
(2) Citric acid	(b) To impart sweetness
(3) Lycopene	(c) Microbial restrictor
(4) Nycin	(d) Protein binding emulsifier
	(e) To impart acidity



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23. Match the pairs:

(2) Column 'A'	Column 'B'
(1) Vinegar	(a) Polylactic acid
(2) Xanthan gum	(b) Molasses
	(c) Icecreams and puddings
	(d) Acetic acid



24. Find the odd one out:

Lactobacillus acidophilus, Lactobacillus casei,
Bifidobacterium bifidum, Streptococcus
thermophilus



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25. Find the odd one out:

Lactobacillus lactis, Bifidobacterium bifidum,

Lactobacillus cremories, streptococcus

thermophilus



26. Find the odd one out:

Dark chocolate, Miso soup, wafers, corn syrup



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27. Find the odd one out:

Vinegar, soya sauce, ketchup, monosodium glutamate



28. Find the odd one out:

Actinomycets, streptomyces, Nocardia, yeast



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29. Find the correlation:

Bread: Baker's yeast:: Soya sauce:.....



30. Coffee: Coffea arabica:: Cocoa: _____



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31. Find the correlation:

Oil slick: Alcanovorax: Rubber from

garbage:.....



32. Find the correlation:

Conversion of metals into compounds:

Thiobacilli: conversion of uranium salts.....



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33. Microbial enzymes



Emulsifiers



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35. Name the following:

Microbe used in preparation of wine and cider.



Antibiotics effective against tuberculosis.



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37. Name the following:

Antibiotics



Bacteria which use sulphuric acid as a source of energy.



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39. Name the following:

Substance that makes biodegradable plastic.



Curd like food product made from sheep milk,



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41. Name the following:

Enzyme from which vegetarian cheese is produced.



Fungus used in production of soya sauce.



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43. Name the following:

Write the molecular formula for: 4% acetic acid(vinegar)



44. Comeplete the charts

Fruit	Microbe used	Name of beverage
	Lactobacillus brevis	Coffee
Caffea arabica Theobroma cacao	Candida, Hansenula, Pichia, Saccharomyces	Cocoa
	Saccharomyces cerevisiae	Wine
Grapes Apple	Saccharomyces cerevisiae	Cider



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45. Comeplete the charts

(3) (July '19)	Microbe	Amino acid
Source	Aspergillus niger	Citric acid
(1) Sugar molasses and salt	Aspergittus viga. Lactobacillus delbrueckii	Lactic acid
		Itaconic acid
(3) Corn steep liquor	Aspergillus itaconius	



46. Comeplete the charts

Substance obtained by microbial processing	Roles
(1) Citric acid	To impart acidity
(2) Ascorbic acid	Antioxidants, vitamins
(3) Beta carotene	Edible colours
(4) Glycolipid	Emulsifiers
(5) Vanillin	Essence
(6) Xylitol Artificial sweetener	



47. Use of mutant strains has been increased in industrial microbiology.



48. Enzymes obtained by microbial process are mixed with detergents.



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49. Microbial enzymes are used instead of chemical catalysts in chemical industry.



50. Give the sicentific reasons:

Microbial enzymes are said to be eco-friendly.



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51. How the bread and other products produced using baker's yeast are nutritious?



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52. How does the bread become spongy?



53. Answer the following questions:

Which microbes are used in the baking industries?



54. Which are the reason for increasing the popularity of probiotic products ?



55. Which fuels can be obtained by microbial processes? Why is it necessary to increases the use of such fuels?



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56. How can the oil spills of rivers and oceans be cleaned ?



57. There is an oil layer on the water surface of river in your area. What will you do?



58. How can the soil polluted by acid rain be made fertile again ?



59. What is role of microbes in compost production?



60. Explain the importance of biopesticides in organic farming.



61. Which plants are cultivated to obtain the fuel?



62. Which fuels are obtained from biomass?



63. What are the benefits of mixing ethanol with petrol and diesel?



64. Which precautions are necessary for proper decomposition of domestic waste?



65. Why is it necessary to ban the use of plastic bags?



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66. Answer the following questions:

How are microbes used in sewage management?



67. Answer the following questions:

How is the sludge produced in this process utilized?



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68. Answer the following questions:

What is clean technology?



69. Answer the following questions:

Why is it essential to ban plastic bags?



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70. Use your brain power. In earlier class, you had prepared the solution of dry yeast for observation of yeast. Which substance is prepared by its use on commercial basis?



71. Use your brain power. Food materials like cold drinks, ice creams, cakes, juces are available in various colours and flavous. Whether these colours and flavoures are really derived from fruits?



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72. Write short notes on Production of yoghurt.



73. Write short notes on Production of yoghurt.



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74. Write short notes on:

Land-filling sites.



75. Complete the following conceptual picture.





76. Why is it asked to segregate wet and dry waste in each home ?



77. What is done with the segregated waste?



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78. Which is most appropriate method of disposal of dry waste?



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79. Complete the paragraph by choosing the approprite words given in the brackets:

(mechanical, Rhizobium, aquatic, Toxic, co 2 Nitrogen, Pseudomonas, Amoeba, bacteria, hydrocarbons) Spilling of petroleum oil occurs in ocean due to various reasons. This oil may prove fatal and toxic to organisms. It is not easy to remove the oil layer from surface of water by method. However, bacteria like spp. and Alcanovorax borkumensis have the ability to destroy the pyridines and other chemicals. Hence. these are used to

clear the oil spills. These are called

Complete the papragraph using proper words:

hydrocarbonoclastic bacteria (HCB). HCB decompose the- and bring about the reaction of carbon with oxygen. ...--- and water is formed in this process.



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80. Complete the paragraph by choosing the approprite words given in the brackets: (Nocardia, Geobacter, Ideonella sakaiensts. Pseudomonas, Alcanovorax borkumensis, hydrocarbonoclastic, Acidophillium, streptomyces) Bacteria like spp. and have the ability to destroy the pyridines and other chemicals. Hence, these bacteria are used to clear the oil spills. These are called bacteria. It has been observed that species like Vibrio, can decompose the PET. Similarly, species of fungi like have ability of decomposing rubber from garbage. Sulphuric acid is source of energy for some species of bacteria like Hence, these bacteria can control the soil pollution

occurring due to acid rain. - convert the salts of uranium into insoluble salts.



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81. Paragraph based Questions:

Read the paragraph and answer the questions given below:

Remediation is the process of removing dangerous or poisonous substances from the environment, or limiting the effect that they have on it. When any biological organism is

used for remediation, it is called bioremediation. When plant species are used for the purpose of remediation, it is called phytoremediation. When any microbes are used then it is named as microbial remediation. The methods of such remediation have helped to clean the environment from toxic effluents, especially sewage and crude oi]. Dr. Anand Chakraborty, a scientist of Indian origin, has worked on Pseudomonas aeruginosa which have reduced the crude oil films into carbon dioxide and

water.

What is the meaning of remediation?



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82. Paragraph based Questions:

Read the paragraph and answer the questions given below:

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What is the difference between phytoremediation and microbial remediation?



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83. Paragraph based Questions:

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Which environmental pollutant is mainly removed through bioremediation processes?



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84. Paragraph based Questions:

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water.

What is the role of Pseudomonas aeruginosa?



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85. Paragraph based Questions:

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Why Dr. Anand Chakraborty's work phenomenal?



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86. Paragraph based Questions:

Read the paragraph and answer the questions given below:

Lady bug beetles are friends of farmers as the destroy harmful insects. It is a predatory insect which lives on biting worm, white fly worm, whit moth, flower insects and bread

worms. It acts as natural insecticide for crops like maize, jawar, cotton, sugarcane, cereals, vegetables, fruit trees, etc. These are attractive red or yellow or grey coloured insects. Many species of this insect are, found in our farms. The lifecycle of this insect follows: eggs, larvae, cocoon & moth stages. The eggs, found in flutter. The larvae are grey in colour. Larvae and adults both live on sucking insects.

How does the lady bug beetle live?



87. Paragraph based Questions:

Read the paragraph and answer the questions
given below:

Lady bug beetles are friends of farmers as the

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The lifecycle of this insect follows: eggs, larvae,

cocoon & moth stages. The eggs, found in flutter. The larvae are grey in colour. Larvae and adults both live on sucking insects.

Of which colour the lady bug beetles are?



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88. Paragraph based Questions:

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89. Paragraph based Questions:

Read the paragraph and answer the questions given below:

Lady bug beetles are friends of farmers as the destroy harmful insects. It is a predatory insect which lives on biting worm, white fly worm, whit moth, flower insects and bread worms. It acts as natural insecticide for crops like maize, jawar, cotton, sugarcane, cereals, vegetables, fruit trees, etc. These are attractive red or yellow or grey coloured insects. Many species of this insect are, found in our farms.

The lifecycle of this insect follows: eggs, larvae, cocoon & moth stages. The eggs, found in flutter. The larvae are grey in colour. Larvae and adults both live on sucking insects.

How does it help the farmers?



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90. Paragraph based Questions:

Read the paragraph and answer the, questions given below:

Sulphuric acid is present in the acid rain and materials coming out of mines . You know that erosion of metals present in statues, bridges and buildings occurs due to it. Sulphuric acid is a source of energy for some species of like Acidophilum spp. and bacteria Acidobacillus ferrooxidans Hence. these bacteria can control the soil pollution occurring due to acid rain water soluble salts of uranium are present in the wastes produced during electroplating and in effluent released in the environment from the atomic energy Plant. Geobacter convert these salts of yranium into insoluble salts and thereby prevent those salts from mixing with groundwater sources.

What causes metal erosion in statues pridges and buildings?



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91. Paragraph based Questions:

Read the paragraph and answer the, questions given below:

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Sulphuric acid is the source of energy for which bacteria?



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92. Paragraph based Questions:

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groundwater sources.

What kind of pollution do these bacteria control?



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93. Paragraph based Questions:

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What are the water soluble salts in nuclear power plants and in the process of electroplating?



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94. Paragraph based Questions:

Read the paragraph and answer the, questions given below:

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Which bacteria prevent these salts from mixing with ground water by converting them into insoluble salts?



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95. Diagram based question:

Observe the diagram and answer the following questions:



Fig. 7.1 : Modern landfill site

Name the following method of solid waste Management.



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96. Diagram based question:

Observe the diagram and answer the following questions:

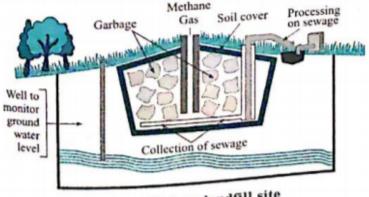


Fig. 7.1 : Modern landfill site

What type of waste is used in this method?



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97. Diagram based question:

Observe the diagram and answer the following questions:



Fig. 7.1 : Modern landfill site

What kind of useful substances can be obtained from such methods?



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98. Diagram based question:

Observe the figure and answer the following questions:



Fig. 7.1 : Modern landfill site

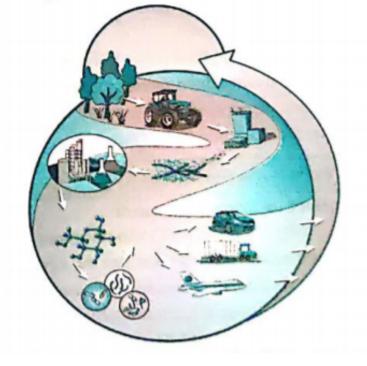
Identify the process shown in the figure.



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99. Diagram based question:

Write the answers to the questions by observing the figure



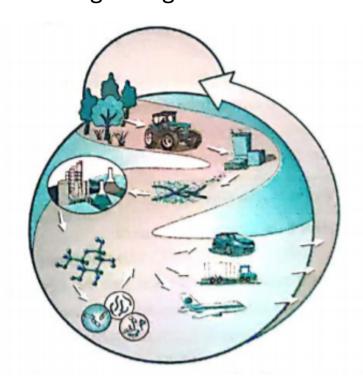
What type of fuel production process is shown in the figure?



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100. Diagram based question:

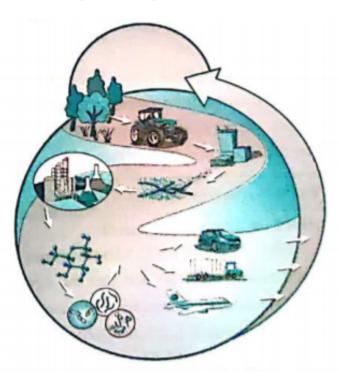
Write the answers to the questions by observing the figure



Write two examples each of the solid, liquid and gaseous fuels produced in this fuel production process?

101. Diagram based question:

Write the answers to the questions by observing the figure



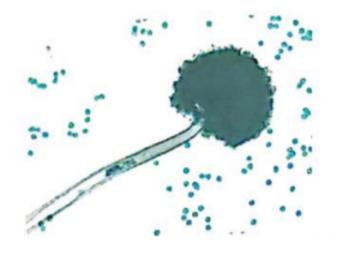
How do microorganisms play their role in this process?



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102. Diagram based question:

Observe the figure and write the answers to the questions asked.



Write the name of the fungus in the figure above.



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103. Diagram based question:

Observe the figure and write the answers to the questions asked.



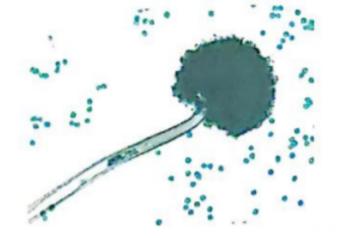
What is the source of these fungi?



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104. Diagram based question:

Observe the figure and write the answers to the questions asked.



Which organic acid obtained from this organism is used in commercial production?



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