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ФАКУЛЬТЕТ ГОСУДАРСТВЕННОГО И МУНИЦИПАЛЬНОГО УПРАВЛЕНИЯ

PLANT LIFE

Методические указания по английскому языку для практических занятий

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Цель методических указаний – научить студентов читать, понимать и переводить оригинальную литературу по специальности, накопить словарный минимум по представленной тематике, практически владеть научной речью для активного применения иностранного языка в профессиональном общении. Оно может быть в равной мере эффективно использовано как в аудиторной, так и в самостоятельной работе обучающихся и может прекрасно сочетаться с другими учебными пособиями и дополнять аутентичные учебники.

Данные методические указания предназначены для практических занятий студентов агрономического факультета очной формы обучения по направлениям подготовки 35.03.04 «Агрономия», 35.03.03 «Агрохимия и агропочвоведение», 35.03.01 «Лесное дело», 35.03.10 «Ландшафтная архитектура», 20.03.02 «Природообустройство и водопользование».

Методические указания по английскому языку для практических занятий утверждены и рекомендованы к изданию учебно-методическим советом агрономического факультета (протокол № 08 от 14 октября 2016 г.).

ВВЕДЕНИЕ

Данные методические указания предназначены для практических занятий студентов всех направлений подготовки бакалавриата агрономического факультета НГАУ и рассчитаны на изучение в течение двух семестров. Издание содержит систематизированный материал как по основным языковым аспектам (профессиональная лексика, грамматика), так и по видам коммуникативной деятельности (чтение, говорение, письмо).

Данные методические указания по английскому языку состоит из 10 тематических блоков (Units) и обширного текстового банка (TEXT BANK) по разным равлениям агрономии. В основных разделах пособия представлены тексты, устные и письменные задания, которые направлены на активизацию изучаемого материала и совершенствование навыков монологической речи.

Цель методических указаний – научить студентов читать, понимать и переводить оригинальную литературу по специальности, накопить словарный минимум по представленной тематике, практически владеть научной речью для активного применения иностранного языка в профессиональном общении.

Пособие может быть использовано в различных условиях учебного процесса для развития базовой коммуникативной компетенции – умения получать, перерабатывать и передавать информацию на иностранном языке. Оно может быть в равной мере эффективно использовано как в аудиторной, так и в самостоятельной работе обучающихся.

Предлагаемые упражнения дают возможность гибкого планирования занятий. Издание может прекрасно сочетаться с другими учебными пособиями и дополнять аутентичные учебники.

Методические указания направлены на целевое формирование иноязычной коммуникативной компетенции (речевой, языковой, социокультурной, компенсаторной и учебно-познавательной).

PART 1. TEXTS FOR COMPREHENSIVE READING

UNIT 1

TEXT A

Gardening

The English are obsessed with flowers. If you don't believe it's true, look at all gardening books in the book-shops, find out how many flower arranging societies there are in England – thousands and thousands. It's a useful obsession because it doesn't harm anyone.

If you want to please an English person, be very polite about his garden. He will "probably show you his garden and tell you all about it. So you listen and say – "How lovely!" or "How interesting!" "How clever of you!"

The English garden is internationally famous. Some of them are very beautiful, especially the big ones that are open to the public.

When you come to England you will decide for yourself whether English gardens are as beautiful as they are famous.

Comprehension check

1. Answer the questions.

1. What should you do to please an English person?
2. Are the Russian obsessed with flowers?
3. Have you ever seen an English garden?

2. Find English equivalents to the following.

Англичане, выяснить, никому не причиняет вред, угодить, быть очень вежливым, вероятно, решите для себя, книга по садоводству, «помешанный» на цветах.

3. Render the following sentences into English.

1. Англичане просто помешаны на цветах.
2. В Англии существует множество обществ, занимающихся флористикой.
3. Английские сады славятся на весь мир.
4. В Англии есть большие прекрасные сады, открытые для посещения.

TEXT B

Nature corner

One of the first flowers to bloom in the spring is the coltfoot. Its clusters of yellow flowers, rather like small pale dandelions, rise on their thick woolly stems, long before the leaves appear, in waysides and waste places. The large rounded leaves, dark green above and downy-white below, come out after the flowers fade.

"Why do coltsfoot flowers come up suddenly all over places where we never used to see any before?"

This is partly because coltsfoot is rather a "pioneer plant:" that is, one of the first to appear on freshly disturbed soil. Its white, fluffy seeds are dispersed by the wind, like dandelion clocks, and get blown far and wide across bare ground, where they are not trapped by grass and tall weeds already growing. In this way the plants will appear all at once over a wide area.

Words and phrases

coltsfoot – мать-и-мачеха обыкновенная
cluster – пучок, кисть
dandelion – одуванчик

wayside – сторона дороги, придорожный

fluffy – пушистый, мягкий

disperse – рассеивать, распространять

to trap – задерживать.

weed – сорняк

to appear – появляться

Comprehension check

1. Name the main parts of the flower.

2. Find the "why-question" in the text and try to answer it.

3. Give the English equivalents to the following.

Цвести; больше похожие на…; за долго до…; невозделанные места; тёмно-зелёные сверху; появляться после; это отчасти потому что..; то есть; один из первых; как; голая земля; таким образом; одновременно.

4. Give a short summary of the text/article.

Make use of the following standard phrases and expressions while writing your summary.

The article is called... = The title of the article is ...	Статья называется…, статья озаглавлена.
The article is published in ...	Статья опубликована в…
The article is about/on	Статья повествует о …
The article is devoted to	Посвящена
The article is concerned with	Касается
The article deals with	Имеет дело с…
The article touches upon the problem of	Затрагивает проблему
In the introductory part of the	Во вводной части статьи автор

article the author points out	указывает
The following facts are stressed in the article	В статье акцентируется внимание\подчеркивается
The article contains useful information on ...	Статья содержит полезную информацию о …
In concluding paragraphs it is pointed out that	В заключительной части статьи указывается, что...
The article contains statistics about...	Содержит статистику о…
The reader's attention is drawn to...	Внимание читателя привлечено к…

UNIT 2

TEXT A

Flowers

Flowers are a great treasure. They are delightful to look at because they have so many shapes and colours, and most of them have a pleasant scent. It is mild in the tulip, overpowering in the jasmine, elusive in the violet, captivating in the carnation.

Flowers grow almost everywhere. There are flowers for all seasons and all places – flowers for spring, summer, autumn and winter. There are flowers of the fields and woods and hedgerows, of the seashore and the lake's margin, of the mountain-side up to the very edge of the eternal snow.

Flowers which grow in the fields, in the woods, or by the roadside are called wild flowers, those which grow in our gardens are called cultivated or garden flowers, but the flower of a tree is called blossom.

The commonest wild flowers are the daisy, the forgot-me-not, the poppy, the lily-of-the- valley, the corn-flower.

Perhaps the commonest garden or cultivated flowers are the rose, the peony, the dahlia, the tulip, the pansy.

Flowers are arranged and combined in different ways. They can be made into bouquets, garlands, wreaths, bunches and so on.

Let us have a look at some of the flowers.

1. DAISY

The daisy is a small wild and garden flower. It has a yellow centre and white petals. The name of this much loved flower means Day's Eye: the flower opens its eye to the day or when the day dawns. It opens widest when the sun is at its height and shuts when the sun goes down.

A daisy is like a little sun
With rays of silver, heart of gold,
And when the summer day is done
Its red-tipped petals droop and fold.

2. IRIS

The iris is an ornamental plant remarkable for its handsome delicately-scented flowers and sword-shaped leaves. The iris and the daisy differ in this that the daisy opens widest when the sun is at its height, and shuts altogether, when the sun goes down; while the iris opens widest in darkness and closes when the sun shines full upon it.

The iris has a peculiar history. The Greeks believed this flower to be the personification of the rainbow and gave it the name of the goddess of the rainbow. At one time the iris was used for making scents and powders, and as a remedy for many diseases. In the 19th century a French scientist discovered that the seeds of iris when well roasted made a drink very much like coffee.

It is worthwhile mentioning, too, that when the iris root is dried, powdered and distilled it has the smell of violets.

3. ORCHID

Orchids are exotic flowers of fantastic shapes and brilliant colours.

Orchids are remarkable for the unusual shape of their flowers which are so varied in form that there is hardly a reptile or insect to which some of them have not been compared.

Orchids are the most showy flowers that can be found anywhere. In Japan and Sumatra they are superb. Some are purple, and some are red, some are spotted and some are striped, some are white with purple stripes, and others are purple with white stripes. Some are spotted and tinted with yellow, with a deep crimson and purple at the edges, but there is not one of them which is not a handsome flower.

In the forests of Siberia lovely yellow, pink and spotted orchids grow wild. They bloom in early June and have a delicate smell. The flowers look very much like pretty slippers. They hang so gracefully from the stem that you feel almost tempted to put them on.

4. HAWTHORN

The hawthorn is a thorny shrub 10–20 feet high with white, red or pink flowers. It is used in England for hedges. Though the shrub is beautiful not everyone likes it because of its faintly fishy smell. Neither bees nor butterflies will touch it, because bees and butterflies like sweet scents.

But Keats (John Keats (1795–1821), the English poet) loved the thorny shrub, and modern English gardeners are keen on cultivating it. Besides it is a plant around which grew up the picturesque rural May Day festivities in England.

5. TULIP

The tulip is a plant with bell-shaped and mildly-scented flowers. Tulips are strange plants: they can walk. If you plant them in dark, shady places, where it is cold and damp, they will walk away from the dark place into the sun. The bulb does not actually move but its substance is transferred little by little, until only the outer wrapping of brown tissue is left. The bulb sends out a delicate shoot that runs below the ground till it has reached a distance of several inches. Then near its point a swelling begins to take the shape of a tulip bulb which grows larger and larger as the food-material of the old

bulb is brought into it. This is done by the little shoot. If the sunny or light spot toward which the tulip is walking gets unexpectedly shaded, it will immediately begin to move in some other direction.

The Dutch have always loved tulips. In the 17th century there was a craze in Holland for the cultivation of the flowers (tulpanomia) which spread like an epidemic; bulbs in those days were sold and resold at fabulous prices.

6. HONEYSUCKLE

The honeysuckle is a climbing shrub with yellowish-white and sometimes red-tinted flowers fragrant only at night. The scent is indescribably sweet, tinged with a spicy odour, which makes its flowers a delight to the young but, as an Englishman once said, "almost too rich for any middle-aged liver".

The honeysuckle must be used with caution in the garden, for its perfume may become a nuisance. Besides it may completely smother neighboring shrubs, since it will bloom throughout the season.

7. JASMINE

The jasmine is a shrub with white or yellow heavy-scented flowers. Charles Dickens once said that the jasmine should be crowned "the empress and queen of the flowers". Cleopatra thought the flower most captivating. It was customary in her day for brides to wear garlands of jasmine and to strew banquet-rooms with rose and jasmine petals.

Words and phrases

scent – запах

tulip – тюльпан

cornflower – василек

elusive – неуловимый, слабый

violet – фиалка

captivating – чарующий

carnation – красная гвоздика

droop – свисать, увядать

tissue – ткань, сплетение

smother – душить

dahlia – георгин

pansy – анютины глазки

wreath – венок

petal –лепесток

hedgerow – живая изгородь

bulb – луковица

daisy – маргаритка

a thorny shrub – колючий куст

the poppy – мак

a climbing shrub – вьющийся куст

hawthorn – боярышник

honeysuckle – жимолость

showy – пышный, яркий

swelling – напыщенный

a shoot – побег, росток

bloom – цветение, цвести

a nuisance – неприятность

harbinger – предвестник

Comprehension check

1. Answer the following questions.

1. What is the scent of the violet like? Can you compare it to that of any other flower?
2. Which do you like better, spring or autumn flowers?
3. Some people dislike the jasmine because of its heavy scent. Is it as intoxicating as that of the lilac?
4. Could you give the names of some scentless flowers?
5. Have you ever seen a water-lily? What sort of a flower is it?
6. Where do lilies-of-the-valley grow? Have you ever picked any?
7. Are you good at bouquet-making? Which make more effective bouquets, garden or wild flowers?
8. What is the difference between the iris and the daisy?.
9. What is the hawthorn much used for in England? What about the smell of its blossoms?
10. Tulips are shade-loving flowers, aren't they? Where is it advisable to cultivate them?
11. The geranium is a wonderful plant. Where did it come from to Europe?
12. You have just been to the Botanical Gardens and seen a great many orchids there. Will you describe some of them?
13. What are the commonest wild flowers?

14. Why has the sunflower been called the “Sun Worshipper”?

2. Describe a flower or two you like most of all.

3. What flowers are spoken about in Text A? Read the short descriptions and try to guess.

1. Springtime’s harbinger.
2. Having gold in the heart.
3. Fresh and bright at night.
4. Of fantastic shape and brilliant colour.
5. With its great honest face always looking toward the sun.

TEXT B

Lilac time

The scent of lilacs is synonymous with the culmination of spring. There is an old country saying that the flowering of the lilacs marks the beginning of summer. I often ponder this. It is perhaps true, for they are followed by a wealth of early summer shrubs and flowers- irises, lupines, poppies and the first roses. But for me, lilacs are the culmination of spring, coming with the last of the tulips and the apple blossom. For substantiation there is Ivor Novello’s familiar song, “We’ll gather lilacs in the spring again”, though Alfred Noyes in his famous poem “The Barrel Organ” took another view when he wrote:

“Go down to Kew in lilac – time (it isn’t far from London!)
And you shall wander hand in hand with love in summer’s wonderland;
Go down to Kew in lilac-time.”

If we plant them, feed them and prune them they will flower in late May or June.

Lilacs are treasured for their attractiveness in gardens, their extreme usefulness in flower arrangements and, above all, for their fragrance. Fortunately they are

completely hardly and easy to cultivate. Like the rose, they are inextricably linked with romance and have been immortalized in poetry, painting and song.

The Latin name for lilac is Syringa. Lilacs are so ubiquitous that we have come to think of them as native, but this is far from the truth. There are about 30 species and the majority come from China, with a few from Persia and the northern Balkan Peninsula. Our garden lilacs are essentially varieties of Syringa vulgaris, introduced to Britain from Eastern Europe in the 16th century. The usual plant has clusters of small, very fragrant, single mauve flowers. By hybrydisation the range of colours has been steadily increased to include pinks, reds, blues, purples and, of course, whites. The size of the truss and of the individual pips (flowers) has been vastly increased, but often at the expense of fragrance.

Lilacs like full sun or a little light shade. They will grow, of course, in fairly heavy shade but they do not flower freely. A good strong loam, rich in humus and not too dry, suits them, and they prefer a neutral or alkaline soil. Lilacs are heavy feeders so treat them well. Plant lilacs at any time during the autumn, winter or early spring when the ground is free from frost. Prune lilacs after flowering, removing all dead trusses, weak growths, and any vigorous shoots that throw the bush out of balance. Old bushes can be cut back drastically in late winter or immediately after flowering. Standards tend to flower more profusely than bushes.

Words and phrases

ponder – размышлять

shrub – куст

poppy – мак

wander – бродить

prune – обрезать, подстригать

treasure – дорожить

arrangement – приготовления

lupine – люпин, лупин, волчий боб

mauve – розовато-лиловый

fragrant – ароматный

truss – связка

pip – зернышко

expense – трата, расходы

loam – плодородная почва

fragrance – аромат

ubiquitous – вездесущий

native – родной, местный

cluster – пучок

profusely – обильно, чрезмерно

alkaline – щелочной

vigorous shoot – сильный побег

drastically – решительно

Comprehension check

1. Answer the questions.

1. What are lilacs treasured for?
2. What is the birth place of the lilacs?
3. What is its Latin name?
4. Under what conditions do lilacs grow?
5. What is the best time to plant lilacs?

2. Give the English equivalents to:

старая поговорка, возможно, это истина; что касается меня; в конце мае; они будут цвести; лилии ценятся за; более того; как роза; но это далеко от истины; в любое время.

3. Fill in the gaps with the words from the text.

1. A good strong ... suits them. 2. Lilacs prefer... soil. 3 ... lilacs after flowering, removing all dead trusses. 4. The usual ... has clusters of small, very fragrant, single mauve flowers. 5. They will ..., of course, in fairly heavily shade but they don’t flower freely. 6. There are about 30 ... and the majorities come from China.

4. Translate into English.

1. Аромат сирени – это синоним кульминации весны.

2. Ирисы, люпин, маки и первые розы – это цветы начала лета.

3. Сирень выращивать очень легко.

4. Латинское название сирени – Syringa.

5. Большинство сортов пришло к нам из Китая.

6. В Британию сирень была ввезена в 16 веке.

7. Сирень любит солнце или легкую тень.

8. Сирени требуется хорошо удобренная почва.

9. После цветения срежьте все старые гроздья.

10. Решительно срежьте все старые кусты.

11. Штамбовые растения цветут очень обильно.

TEXT C

Plant containers

Plants are grown in containers for various reasons. The basic one, perhaps, is to ensure their survival in unsuitable soil or surroundings; another is to make it possible to display them in a room or courtyard where there is no soil; and yet another is to accentuate their effect by combining them, as a matter of design, with the container.

Containers for plants have been with us almost as long as civilization. Urns and comparable ornaments were a feature of Roman gardens, and examination of their frescoes shows that occasionally were grown in these.

Modern gardens use ornamental containers a great deal. In limited areas anything that distracts the eye from the proximity of the enclosing walls is welcome, and though an architectural plant or grouping in an attractive container can be even better.

Nor must we forget the enormous numbers of town-dwellers for whom window-boxes, or a few containers on a small balcony or roof-top, may be the only means of growing plants.

The last five years have seen a positive revolution in decorative “planters”, as the Americans often calls them. Before then one might, if one’s pocket was deep enough,

acquire antique containers of stone or lead, but for the ordinary gardener there were plain clay pots and wooden window-boxes.

Words and phrases

to ensure – страховать, гарантировать
survival – выживание
surroundings – окрестности
display – выставлять, показывать
accentuate – делать ударение, подчёркивать
urn – урна
a great deal – много
distracts – отвлекать
proximity – близость
enclose – огораживать
enormous – огромный
roof – top крыша
acquire – приобретать, получать
lead – свинец
ordinary – обычный, заурядный
clay pots – глиняный горшок
window-boxes – оконный ящик
nor – и не, также не, не, ни

Comprehension check

1. Answer the questions.

1. What are the main reasons for growing plants in containers?
2. What were the features of Roman gardens?

3. Where do town-dwellers grow plants?

4. What revolution has happened for the last five years?

2. Match 1-7 with a-g.

1. Plants are grown...

2. The basic reasons are...

3. … a feature of Romans gardens.

4. Modern gardens use...

5. The only means of growing plants for town-dwellers are...

6. The ordinary gardener used...

7. Rich people acquired...

a) ... in containers.

b) ...ornamental containers a great deal.

c)...antique containers of stone and leads.

d)...window-boxes, roof-tops, a few containers on a small balcony.

e)...plain clay pots, wooden window-boxes.

f) urns and comparable ornaments were... .

g)...to ensure their survival in unsuitable soil or surroundings; to make it possible to display them in a room or country yard, where there is no soil; to accentuate their effect by combining them, as a matter of design, with the container.

3. Translate the following sentences into English.

1. Очень часто растения выращивают в контейнерах.

2. Контейнеры помогают растениям выжить в непривычных для них условиях.

3. Для городских жителей выращивание растений в контейнерах, на маленьких балконах или на крышах – это зачастую единственный способ общения с флорой.

4. Контейнеры изготавливают из дерева, камня, глины или свинца.

5. Правильно подобранный контейнер – это дополнительное украшение вашего растения.

TEXT FOR CLASS DISCUSSION

How can you help your plants?

These are some of the most basic things you can do to help your plants to grow strong and healthy. Remember to read and find out about your plant and what it likes.

1. Select your plant carefully. Make sure it's young and healthy. Check that it has plenty of buds, and that its leaves aren't spotty or diseased. You're making life hard for yourself if you buy a diseased plant.

2. One of the commonest mistakes is overwatering. Some plants only need a very little water. If the leaves of your plant are pale and droopy, this may be because you've watered it too much. Water it less often.

3. However, some plants need lots of water. Are your plants leaves dry and brown? This shows you are not watering it enough, and it needs more.

4. Some plants like a lot of sunlight. If your plant is tall and spindly, and its leaves are pale and small, this could be because it wants more light. You'd better move it nearer to the window.

5. On the other hand, some plants don't like direct sunlight (sunlight on their leaves). Does your plant have dry, brittle leaves, and do the leaves drop off easily? This could be because it's getting too much light, and would prefer to be in a shadier spot. However, it could also be because your plant is in a draught (current of cold air), so check this too.

Words and phrases

bud – почка

spindle – вытягиваться

spotty – пятнистый
disease – болезнь
droop – увядать
brittle – ломкий, хрупкий
draught – сквозняк
current – течение

Comprehension check

1. Give English equivalents to the following:

выбирать
растение
листья
бледный
поливать
сухой
солнечный свет
с другой стороны
опадать
тенистое место
предпочитать
тем не менее

2. Discuss with your classmates: How can you help your plant if...?

1. Its leaves are spotty and diseased.
2. Its leaves are pale and droopy.
3. Its leaves are dry and brown.
4. Your plant is tall and spindly; its leaves are pale and small.
5. Its leaves are dry, brittle and drop off easily.

UNIT 3

TEXT A

Dwarf trees

Part one

Bonsai is the art of dwarfing ordinary or normal trees until they can be grown healthily and happily with their roots confined in a small, shallow bowl; and it is interesting to note that “bonsai” is the Japanese word for pot plant, as “bon” means “pot” and “sai” is “plant”. This art of bonsai goes a step further than mere dwarfing in that it trains the growing tree to a desired form. A well-grown bonsai should have all the individual characteristics of the particular species or variety conspicuously brought out. Bonsai are cultivated to increase one’s appreciation of trees in their natural state. They are classified by the shape of the trunk and also by the number of trunks growing from one stump.

It seems like an incredible miracle that a pigmy tree, a miniature copy of a towering giant, can be kept alive for several hundred years. This is an accomplished fact in Japan, for there are any number of these trees that have been handed down from generation to generation to generation. Norio Kobayashi, in his book for the Japan Travel Bureau, tells of a five-needle pine that was the pet of a man in the late 1500’s, and which is still alive today in the palace grounds.

Words and phrases

dwarf – карлик, гном, превратить в карлика, уменьшить до карликового размера
to confine – ограничить
shallow – мелкий, низкий
bowl – чаша
pot – горшок

to train – приучать

conspicuously – видимо, зримо, заметно

bring out – выявлять, обнаруживать

state –состояние

trunk – ствол

stump – пень

pigmy – пигмей, малыш, карлик

towering-participle – возвышающийся, как башня

hand down – передавать

needle – игла

palace grounds – императорский сад

Comprehension check

1. Match the synonyms:

dwarf-	shape
normal	miracle
form	today
wonder	pigmy
cultivate	art
now	pot
skill	grow
bowl	ordinary

2. Fill in the blanks with the words from the list: *alive, trunks, shape, copy, bowl, grow.*

1. The roots of a bonsai are confined in a small, shallow...

2. A well- grown bonsai is a miniature… of a giant tree.

3. Bonsai are classified by the… and the number of their…

4. It takes several hundred years to…some bonsai trees.

5. The oldest bonsai pine is about 500 years old, and it is still…

3. Answer the questions

1. What does the Japanese word “bonsai” mean?

2. What are bonsai trees cultivated for?

3. How long can a bonsai tree live?

4. Have you ever seen a bonsai tree? If yes, where?

4. Translate into English.

1. Бонсай – это искусство выращивать миниатюрные деревья в горшках.

2. Бонсай – это японское слово, где «бон» значит «горшок», а «сай» – это «растение».

3.Деревце бонсай – это крошечная копия большого дерева со всеми его индивидуальными чертами.

4. Чтобы вырастить бонсай, требуется не менее 30 лет.

5. Есть бонсай, которым несколько сотен лет, и они все еще живы-здоровы.

6. Деревья бонсай передаются из поколения в поколение.

5. Give a short summary of the text.

TEXT B

Dwarf trees

Part two

Anyone can grow and train a bonsai tree, provided he has the patience and the will to carry through the day-to-day care that these plants must have.

The kind of plant doesn't matter too much. If it is a pine it should have short needles, as they are more in keeping with the size of the plant once you get it dwarfed. Small-leafed maples, the ginkgo and cedars are fine. Then there are the flowering and fruit-bearing trees such as the crabapple and the persimmon.

Almost any kind of favorite plant material can be used, but the idea is to get them small and to keep them that way. And then, of course, they can be started from seed.

There are seven main factors in successful bonsai growing: soil preparation, transplanting, watering, pinching of buds, or pruning, fertilizing, spraying for insects and fungus diseases, and the careful placing of the pets for summer and winter growing.

Words and phrases

provided – при условии, что…
patience – терпение
will – воля, желание
carry through – осуществлять что-либо
matter – иметь значение
be in keeping with – быть в гармонии, в согласии с чем- либо
maple – клен
ginkgo – гинкго

cedar – кедр

crabapple – дикая яблоня

persimmon – хурма

to pinch – прищипывать, пинцировать

bud – почка

to prune – обрезать, подрезать ветки

to fertiliz – удобрять

to spray – опрыскивать

fungus – гриб (биол.), мн. ч.

disease – болезнь

Comprehension check

1. Match the parts of the sentences.

1. Bonsai trees need... a)... he has great patience.

2. Anyone can grow a bonsai provided... b)... to get it small and to keep them that way.

3. The idea of growing a bonsai is... c)... in successful bonsai growing.

4. There are seven main factors... d)... day-to-day care.

2. Match the synonyms:

pot	if
grow	it isn’t important
provided	cultivate
will	desire
disease	bowl
it doesn’t matter	illness

3. Give the English equivalents to:

вид растений, клены с мелкими листьями, кедры, дикая яблоня, полив, опрыскивать, заботливое размещение горшков на зиму.

4. Translate these sentences into English.

1. Для получения бонсай можно взять дикую яблоню, кедр, сосну, клен или хурму.
2. Цветущие и фруктовые деревья прекрасно подходят для бонсай.
3. Подготовка почвы – один из главных факторов успешного выращивания деревца бонсай.
4. Будьте внимательны и терпеливы, выращивая бонсай.

UNIT 4

TEXT A
Plant, its parts and their functions

Plants are highly important sources of food for man and farm animals. They also supply people with clothing, shelter and many other things as well.

To obtain high yields of farm crops it is necessary to study the principal parts of the plant and their functions. The principal parts of a plant are the root system and the above ground portion consisting of stems, leaves, flower and seeds. The root performs two main functions. It absorbs plant nutrients as well as water from the soil and anchors the plant. There are two types of roots: fibrous roots and tap roots. All grain crops have fibrous roots, while tap roots are typical of legumes and root crops. Alfalfa and sugar beets are examples of crops having tap roots.

As to stems and leaves they are usually above the ground. To support leaves and to conduct water and nutrients from the roots to the leaves are the main functions of the stem. The food used by green plants is produced in the leaves through the process known as photosynthesis.

A flower is the part of the plant where seeds are produced. Thus, to produce seeds the plant must have flowers.

All parts of a plant must be developed well in order to function properly. If conditions for plant growth are not favorable the plant will be weak to develop its parts well.

Words and phrases

above ground portion – надземная часть
as – так как; когда; по мере того, как
as well – тоже, также
as well as – также как; а также
as well to – что касается.
absorb – поглощать всасывать
root – корень
alfalfa – люцерна
root crop – корнеплод
fibrous – мочковатый (о корне)
seed – семя
ground – земля грунт
stem – стебель
leaf (leaves) – лист
sugar beets – сахарная свекла
legume – бобовое растение
tap – стержневой (о корне)

Comprehension check

1. Answer the following questions on text A.

1. What is the importance of the plants?

2. What do roots absorb from the soil?

3. Which crops have fibrous roots?

4. What kind of roots do legumes fibrous have?

5. What are the functions of the stem?

6. Where are seeds produced?

7. Why must all parts of a plant be developed well?

2. Match 1 to 7 with a–g.

1. The principal parts of a plant are...

2. There are two types of roots...

3. ... are above the ground.

4. The main functions of the stem are...

5. The food used by green plants is produced in the leaves through the process known as...

6. ... is the part of the plant where seeds are produced.

7. The plant will be weak to develop its parts well...

a) ...if conditions for plant growth are not favorable.

b) A flower...

c) Stems and leaves...

d) ... the root system and the above ground portion consisting stems, leaves, flower and seeds.

e) ... to support leaves and to conduct water and nutrients from the roots to the leaves.

f) ... fibrous roots and tap roots.

g) ... photosynthesis.

3. Give the English equivalents to the following:

корень, стебель

источник пищи

достичь высокого урожая

обеспечивать

4. Give a short summary of the text.

TEXT B

From seed to plant

Seed o germinate only under certain conditions. The optimum temperature at which seeds germinate best varies with different kinds of seed. The optimum temperature for the germination of wheat, for instance, is about 27 ºC. Cotton and corn germinate best about 35 ºC.

Seed of all crops need enough air for germination as oxygen is necessary for certain chemical reactions which take place in the plant food in the seed.

These reactions take place only when water is present. So, moisture is also necessary for the germination of seeds.

Thus, a seed doesn't germinate: 1) if the temperature is not proper, 2) if there is not enough moisture and air in the soil.

Words and phrases

to germinate – прорастать, пускать (давать) ростки

oxygen – кислород

moisture – влажность, влага

proper – подходящий, отвечающий требованиям

Comprehension check

1. Answer the following questions on text B.

1. Under what conditions does the seed start to germinate?

2. Under what conditions the seed doesn't germinate?

2. Give the English equivalents to the following words:

прорастать

рост

семя

зерно

культура

кислород

влажность

воздух

подходящий

определенные условия

растения

3. Match the synonyms:

optimum	too
so	approximately
also	best
about	thus
as	because
proper	suitable

4. Translate into English.

1. Какая температура является оптимальной для прорастания пшеницы? –

Это около 27 ºС.

2. Химические реакции в питательном веществе семени могут происходить только в присутствии кислорода и влаги.

3. Хлопок и кукуруза прорастают при температуре 35 ºС

TEXT C

Photosynthesis

The most important difference between plants and animals is that plants can produce their food known as photosynthesis.

The conditions necessary for photosynthesis are light, CO2 (carbon dioxide), water, some essential nutrients and proper temperature. Water and nutrients required for photosynthesis come from the soil through the roots. So, leaves function well if the plant has a highly-developed root system.

The word "photosynthesis" consists of two parts. "Photo" which is light and "synthesis" which is building. So, photosynthesis is building .So, photosynthesis is building with light.

Words and phrases

photosynthesis – фотосинтез
carbon dioxide – двуокись углерода
nutrient – питательное вещество, питательный
require – требовать

Comprehension check

1. Answer the following questions on text C.

1. What is the difference between animals and plants?
2. What is necessary for photosynthesis?
3. What does the word "photosynthesis" mean?

2. Give the English equivalents to the following words.

условия

питание

питательные вещества

свет

почва

корни

функционировать

добывать

UNIT 5

TEXT A

Life cycle

Many important crop plants complete their life cycle in one growing season. Such plants are known as annuals. Some annuals are spring annuals planted in spring and harvested in autumn. There are also winter annuals planted in autumn and harvested next summer. Winter wheat is an example of winter annuals and corn is a typical spring annual.

Some plants start their growth in one season but produce seed and die at the end of the second season. They are biennials. Sugar beet is a good example of a biennial plant.

Many plants grow for more then two seasons. Most of our hay and pasture crops are perennials.

Words and phrases

annual – однолетнее растение

biennial – двулетнее растение

perennial – многолетнее растение

winter – зд. озимый

spring – зд. яровой

Comprehension check

1. Give English equivalents to the following words:

однолетнее растение

убирать (собирать) урожай, жать

рост, развитие

двулетнее растение

сено

пастбище

многолетнее растение

сельскохозяйственная культура, урожай

2. Answer the following questions on text A.

Why are some plants called annuals/ biennials/ perennials? Name these plants.

3. Give a short summary of the text.

TEXT B

Sowing the seeds for survival

When people mention endangered species the first thing that come to mind are probably whales, pandas or tigers. Not 1) ... people would think of plants, but, in fact, there are far more threatened species of plants 2) ... of threatened mammals, fish, birds and insects to combine.

One of the 3) ... threats to the survival of many plants is industrialization. This causes pollution and acid rain, 4) ... destroy forests and harm many species of plant.

Another threat is man! Many products that man uses 5) ... from plants. For instance, many plants are collected from the Amazon and are used to make medicines. Other plants, 6) ... as mahogany trees, are valued for their timber and are very popular building materials. There are even plants that have become desirable collectors' items. Luckily, 7) ... and more people are becoming aware of the problem and change is on the way. 8) ... are now a number of organizations that are working to protect endangered plants as well as animal species and preserve all living things for the future.

Words and phrases

endangered species – подверженный опасности вид
acid rain – кислотный дождь
mind – ум, по-моему, мнению
whale – кит
threaten – грозить, угрожать
mammal – млекопитающее
insect – насекомое
to combine – комбинировать, сочетать
survival – выживание
cause – причинять
harm – наносить вред
are valued – оценивать
luckily – к счастью
preserve – сохранять

Comprehension check

1. Read the text and think of the word which best fits each gap. Use only one word each time:

many; than those; main; are derived; as; such; more; there are; which.

2. Do some research in the library/on the internet and find out what plants are endangered in your country.

TEXT C

Poisonous plants

Some plants, if eaten affect a certain organ or organs of the body only, though they do not cause serious harm. As an example may be mentioned some varieties of the sunflower family which cause cirrhosis in man and animals, and prevent the liver from carrying on its normal functions.

Certain plants (some of the yams) are poisonous to man and animals in the fresh state, but lose their toxicity when dried or cooked, and are used as articles of food.

Several plants, for example potatoes, which provide valuable food for animals, at the time of sprouting produce poisonous substances which may be deadly.

Many plants such as chickling vetch give rise to pathological conditions when fed in large doses over long periods.

Belladonna is highly poisonous to several animals but rabbits can withstand it in large quantities.

Words and phrases

poisonous plant – ядовитое растение

affect – воздействовать, поражать

though – однако же, хотя

varieties – разнообразие

sunflower – подсолнечник

cirrhosis – цирроз

liver – печень

carry on – поддерживать

yam – ямс, диоскорея, торица полевая

lose – терять

article – предмет, вещь

sprout – отросток, побег

substance – вещество

chickling vetch – чина посевная

feed (fed) – питать, кормить, питаться

withstand – противостоять

quantity – количество

Belladonna – красавка, белладонна, сонная одурь, атропа

Comprehension check

1. Answer the following questions on text C.

1. What poisonous plants do you know?
2. What organs of the body are usually affected by the poisonous plants?
3. When do some poisonous plants lose their toxicity?
4. When can potato produce poisonous substance?

2. Match the parts of the sentences.

1. There are … …cause cirrhosis in man and animals

2. Certain plants are
poisonous to man and
animals only… …some poisonous plants
3. Some varieties of
the sunflower family… …in the fresh state
4. Robbits can withstand… ...belladonna
5. Some of the yams… …lose their toxicity when dried or cooked
6. Be careful:
chickling vetch is… …poisonous.

3. Give a short summary of the text.

UNIT 6

TEXT A

CLASSIFICATION OF FIELD CROPS

Crops are variously grouped and classified. They may be classified as cultivated crops such as potatoes and corn or as non-cultivated crops such as wheat and barley.

Crops may also be grouped according to the duration of their growth. Annual crops complete their life cycle in one growing season. Biennials require 2 seasons to produce seed. Perennials grow for more than two seasons, producing seed each year.

According to their use field crops may be classified into many groups. The most important of them are:

1. Cereal or Grain Crops. A cereal is a grass grown for its edible grain. Wheat, corn, rye, barley, oats and rice are to be mentioned as the most important grain crops.

2. Legumes for Seed. The principal legumes grown for sees are field peas, field beans and soybeans. Sometimes the aim of growing them is to improve soil fertility because they are able to fix atmospheric nitrogen through the bacteria living on their roots.

3. Forage Crops. These are crops used as for farm animals in the form of pasture, hay or silage. Most of them are perennials.

4. Root Crops. Unlike cereals root crops are grown because of the food value of their roots. There are many root crops grown by man. They are sugar beets, carrots, radishes and others. They are biennials.

5. Tuber Crops. The most important tuber crop cultivated throughout the world is potatoes. Like root crops they are biennials but people grow them as annuals.

Words and phrases

cultivated crops – культурные растения

corn – зерно, кукуруза (амер.)

barley – ячмень

wheat – пшеница

duration – продолжительность, длительность

life cycle – жизненный цикл

require – требовать

cereal – хлебный злак

grain crop – зерновая культура

oat – овёс

legume – бобовое растение

peas – горох

fix – укреплять, оседать

forage-crop – кормовое растение

pasture – пастбище

root crop – корнеплод

Comprehension check

1. Complete the sentences using the text.

1. Some crops are grown during one season. They are... 2. Crops providing grains are known as... 3. Soil fertility is increased by growing... 4. Winter feeds for cattle are hay and ... 5. In summer cattle should be kept on... 6. Forage crops grow for many seasons; they are...

2. Answer the questions.

1. Is wheat a cultivated crop?
2. What is a biennial crop?
3. For how many years does alfalfa?
4. Do perennial crops produce seed each season?
5. Why do legumes increase soil fertility?
6. What root crops do you know?
7. Is potato a biennial crop?

3. Give the essential points of the text.

TEXT B

Wheat

The cultivation of wheat began in prehistoric times and the cereal was greatly valued by the ancient Persians, Greeks and Egyptians. Cultivated wheat seems to have originated by the accidental hybridization of certain species of wild grasses.

Each grain of wheat consists of an embryo plant in close contact with an ample store of starchy and nitrogenous food material, the whole being surrounded by a coat. Wheat is especially always self-fertilizes. The great majority of wheats have been produced by artificial cross-fertilization of pre-existing distinct varieties, with selection of the best types.

The first and the most important criterion is yielding capacity. Thick-walled and short straw is highly resistant to lodging, which is of prime importance under

conditions of high fertility. Winter hardiness is of great importance of spring and winter wheat.

Wheat is extremely deep rooted and drought resisting, and all except very light soils gives the best yields in dry and sunny seasons; it is also more resistant to winter frost than either barley or oats.

Perfect crops of wheat can be grown on heavy loams and clays. Satisfactory crops can be grown on light land in good condition. When wheat is grown on peaty soils the quality is usually poor, while the vegetation is luxuriant and the yield of straw very large.

Words and phrases

seem to have originated – вероятно появились

by the accidental hybridization – в результате случайной гибридизации

in close contact with – окруженный

ample store – обильный запас

starchy and nitrogenous food material – питательные вещества, содержащие крахмал и азот

in common with – наряду с…

artificial cross-fertilization – искусственное перекрестное опыление

resistant to lodging – устойчива к полеганию.

fertility – плодородие; fertilize – опылять

clays – глинистые почвы

peaty soils – торфяные почвы

hardiness – устойчивость.

Comprehension check

1. Answer the questions.

1. When did the cultivation of wheat begin?
2. What is the origin if the wheat?
3. What is the most important criterion of wheat?
4. What soil is the most suitable for wheat?

2. Translate into English.

1. Выращивание пшеницы началось в доисторические времена.
2. Пшеницу высоко ценили древние персы, греки и египтяне.
3. Пшеница – это результат случайной гибридизации отдельных видов диких злаков.
4. Пшеница самоопыляющееся растение.
5. Этот сорт пшеницы устойчив к полеганию.
6. Тяжелые суглинистые и глинистые почвы особенно хороши для пшеницы.

3. Find out topic sentences in each paragraphs of TEXT B and write a short summary making use of them.

TEXT C

Rye

Rye is a drought resistant plant which thrives under a great variety of conditions; it is productive upon almost any class of soil and very resistant to acid conditions. When rye is grown for grain on good soil it is usually less profitable than the other cereals, and its cultivation is therefore confined to districts of poor, dry, light land that produce inferior wheat and oats. It also succeeds on peaty soils and on the poorer sorts of black

fen. Rye does best on good loams, which however, yield more profit under other crops. Rye is considerably more winter-hardy than wheat. When rye is grown on good land it is mostly cultivated for forage purposes and it is extremely valuable for feeding-off or for soiling.

The seed-bed is prepared as for wheat, and the grain may either be broadcast or drilled in the usual way. Seeding should take place from two to three weeks before wheat sowing begins.

Cutting takes place about the beginning of August. When high-quality rye straw is required for special purposes it may be cut before the ear has filled then dried and used this avoids the threshing process which damages the stems considerably. Where it is grown as a forage crop, it must be cut early-before it shoots as towards the end of its growing period it becomes hard, dry and unpalatable.

Words and phrases

its cultivation is therefore confined to districts… – ее возделывание поэтому ограничено районами…

it also succeeds on peaty soils – здесь: она (рожь) также дает хорошие урожаи на торфяных почвах

as for wheat – как для пшеницы

before the ear has filled – до наливания колоса

before it shoots – до выхода в трубку

a drought resistant plant – засухоустойчивое растение

thrive – буйно расти, разрастаться

acid – кислый

profitable – прибыльный, выгодный

Inferior – низший, плохой

black fens – чёрные торфяники

loam – суглинок, жирная глина, глина

yield – урожай

winter – hardy зимостойкий

seed-bed – грядка,пашня

broadcast – разбрасывать (семена)

drill – сеять, сажать рядами

feeding off – откорм (животных)

soiling – приготовление зеленых кормов

threshing – обмолот

Comprehension check

1. Answer the questions.

1. What kind of plant is rye?
2. What soil is the most suitable for rye?
3. When does the seeding of rye take place?
4. When is the better time for cutting rye?

2. Find out topic sentences in each paragraphs of TEXT C and write a short summary making use of them.

TEXT D

Alfalfa

Alfalfa is a perennial plant. It may grow for many years producing nutritious forage for farm animals and increasing nitrogen in the soil.

Alfalfa is used in many different ways. About 80 % of the crop is made into hay. Alfalfa hay is high in protein and is a good winter feed for different classes of cattle. Alfalfa is also used for pasture but it should not be used for this purpose alone as it may cause disease in cattle. To obtain good pasture alfalfa is to be grown with grasses. In addition alfalfa is a good crop for making silage.

Words and phrases

alfalfa – люцерна

perennial – многолетний

hay – сено

pasture – пастбище

in addition – в дополнение

Comprehension check

1. Answer the questions.

1. What kind of plant is alfalfa?

2. How is alfalfa used?

2. Find 10 words in the text:

пастбище

фураж

сено

с-х. культура

силос

причинять

способ

на протяжении

болезнь

трава

3. Translate into English.

1. Люцерна – это прекрасная кормовая культура.
2. Сено, приготовленное из люцерны, богато протеином.
3. Силос, сделанный из люцерны, очень хорош.

5. Describe alfalfa.

UNIT 7

TEXT A
The Tubers

The potato The potato (Solanum tuberosum) was introduced from South America in the sixteenth century. The most suitable soil for potatoes is a light deep loam or alluvium, but the crop does well on black-top or peaty land. The potato is one of the few farm plants that tolerate a rather highly acid condition of the soil, but the yield suffers where there is an extreme deficiency of calcium.

Potatoes do badly on heavy soils and under wet conditions. The most favorable seasons are those of moderate rainfall: in rainy seasons the temperature is too low for optimum growth, and the incidence of blight is high; in dry summers the yield is often limited by the water supply. The best eating quality is generally obtained when the last phase of the growing season is fairly dry, as it is then that the tubers are formed with the lowest moisture content.

Comprehension check

1. Study carefully the meaning of the following phrases to avoid any difficulty in working through TEXT A.

1. That tolerate a rather highly acid condition of the soil – которые выносят довольно высокую кислотность почвы.

2. The yield suffers where there is an extreme deficiency of calcium – большая недостаточность кальция пагубно сказывается на урожае.

3. Potatoes do badly – картофель плохо растет.

4. As it is then that the tubers are formed with the lowest moisture content – так как именно тогда образуются клубни с самым низким процентом содержания влаги.

2. Answer the questions.

1. When was the potato introduced?
2. What soil is the most suitable for potato?
3. Which season is the most favorable?

3. Render the sentences into English.

1. Научное название картофеля – Solanum Tuberosum.
2. Картофель – уроженец Южной Америки.
3. В 1565 г. картофель был ввезен в Европу.
4. Испания – первая европейская страна, которая познакомилась с картофелем.
5. Существует множество сортов картофеля.

TEXT B

Root crops

Sugar beet. Sugar beet is a biennial plant closely related to the red beet. Sugar beets are white-coloured; their average weight is about 1lb. They have high dry-matter content, their sugar content alone amounting to from 13 to more than 20 per cent of their weight.

Although the main object of growing beet is the production of sugar, the by-products, tops and pulp, are important to many growers, especially dairy farmers. In other cases the tops are ploughed in as manure.

The best soil for beet is a deep free-working loam, but the crop has been grown quite satisfactorily on well-drained soils of practically all types.

The yield of the crop depends very largely on the number of beets that can be grown to the acre, and experience has shown that on average land an endeavour should be made to produce at least 30 000 plants on this acre.

Words and phrases

high dry-matter content – высокий процент содержания сухого вещества
tops are ploughed in as manure – ботву запахивают как удобрение
sugar beet – сахарная свекла
a biennial plant – двухлетнее растение
average weight – средний вес
by-products – побочный продукт
loam – глина
on average land – на умеренно плодородной почве
endeavor – старание, усилие
lb. – сокр. форма от libra (фунт, 456 г); читать следует pound
dairy farmers – фермеры, занимающиеся разведением молочного крупного рогатого скота

Comprehension check

1. Answer the questions.

1. What kind of plant is sugar beet?
2. What part of sugar beet is ploughed in as manure?
3. What soil is the most suitable for beet?
4. What does the yield of the crop depend on?

2. Translate the sentences into English.

1. Фермеры любят выращивать сахарную свеклу, т. к. ее ботва и пульпа для скота.
2. Свекла – двулетнее растение.
3. Свекла хорошо растет на любой почве.

3. Say a few words about sugar beet.

TEXT C

Pulse crops

***Beans*.** The common bean is one of the most ancient of cultivated plants.

They give the best results when grown on stiff clay soils, and may even fail on the lighter portions of a field. Probably the best soils are the chalky boulder clays, as the bean does best where there is plenty of lime; but the crop will not thrive unless the land be well drained. On land rich in humus the yield of grain is often disappointing, though the weight of straw may be very great.

***Peas*.** Peas are very similar in composition to beans, i.e. they contain nearly 20 per cent of digestible protein and have low fibre content. When intended for animal food, peas may be grown either pure or in mixture with oats, and the mixed crop may be either treated as a grain crop or cut green for soiling, ensilage, or hay. Peas grown for human food are dealt with in three different ways. Firstly, any of the dwarf garden sorts can be grown in the field and be picked for market when the pods are still green

and the seed still soft. Secondly, the crop may be sown and the whole material sent to a factory, either to be canned or to be preserved by “quick freezing”. Thirdly, the crop may be ripened and threshed and then put in packets for sale or canned. The best pea soil is a medium calcareous loam, but dry sand or gravelly land is required for the production of early picking crops.

Words and phrases

to a greater or less extent – в большей или меньшей степени

arable districts – земледельческие районы

stiff clay soils – грубые глинистые почвы (глиноземы)

chalky boulder clay – известковая валунная глина

the yield of grain is often disappointing – урожай зерна часто вызывает разочарование

a low fibre content – низкое содержание волокон

i.e. – лат. Id est, англ. – that – то есть

pulse crops – бобовые культуры

fibre – клетчатка

ensilage – силос

pods – стручки

to can (не путать с мод. гл. can!) – консервировать.

Comprehension check

1. Answer the questions.

1. What soil is the most suitable for beans?
2. What do peas contain?
3. What is the difference between peas grown for human food and for animal food?
4. What is the best soil for peas?

2. Translate into English.

1. Бобы и горох очень полезны, т.к. они содержат много витаминов и минеральных веществ.
2. Бобы известны с незапамятных времен.
3. Горох используют и как кормовую культуру.
4. Я очень люблю гороховый суп.

3. Write an essay "Pulse crops".

TEXT D

Forage crops

Cabbage. The cabbage is a cruciferous plant which has been obtained by a long process of selection from the wild cabbage (Brassica oleracea). Cabbage varieties differ in appearance, size, hardiness and the time required for their development.

The cabbage is a typical heavy-land crop and attains its greatest perfection on strong clays that contain plenty of lime. However it grows well on light soils which have been given body by manuring. It doesn't start well unless it gets a good deal of rain; in dry climate it is less resistant to parasites.

A common method of growing cabbage is to sow the seed in a green house or hotbeds in seed boxes 4–6 weeks before outdoor planting.

Words and phrases

which have been given body by maturing – которые получили свою структуру благодаря удобрению навозом

good deal of – достаточное количество, множество

outdoor planting – высадка в открытый грунт

a cruciferous plant – крестоцветное растение

hardiness – крепость, выносливость

unless – до тех пор пока

a green house – теплица, оранжерея

hotbed – парник, рассадник

to sow – сеять, засевать

Comprehension check

1. Answer the questions.

1. What kind of plant is cabbage?
2. What soil is the most suitable for cabbage?
3. What is a common method of growing cabbage?

2. Translate into English.

1. Капуста известна с древнейших времен.
2. В Древней Руси она появилась в X веке.
3. Существует множество сортов капусты.
4. Капуста хорошо растет на глинистых почвах.
5. Капусту следует хорошо поливать.
6. Съедобная часть капусты – кочан (head).

7. Капуста богата витаминами С, Р, К, В и многими минералами.

8. Попытайся вырастить капусту брокколи.

UNIT8

TEXT A

Soil and soil fertility

All plants grow in the soil. If you want to have high yields of grains, fruits and vegetables you must have a fertile soil. All crops grow well in a good soil. They can't grow well if the soil is poor. People who have vegetable gardens must work hard there. They must dig the ground with a spade and loosen it with a rake. They may apply some fertilizers. They must water the plants and weed their vegetable gardens.

All vegetables and other crops respond to fertilizers very well. Agricultural soils must have some organic matter and some mineral matter.

Crops can't grow well if there is not enough water, plant food, heat and air.

Collective farmers work many hours in the fields they get good yields of wheat, rye, oats, barley, corn, millet, buckwheat, cabbage, beet, carrot, beans, peas, lettuce, onion, radish and other crops.

Soil fertility is very important for agricultural crops.

Comprehension check

1. Give English equivalents to the following.

урожай

почва (плодородная, хорошая, бедная)

копать землю

разрыхлять

поливать растения

полоть

органические \ минеральные вещества

с.-х. культура

пшеница

рожь

овес

ячмень

2. Answer the following questions.

1. Can crops grow in a poor soil?
2. Can crops grow well if there is not enough water, plant food, heat and air?
3. Do all vegetables and crops respond to fertilizers well?
4. Is soil fertility a very important factor for the good growth of agricultural crops?

3. Translate into English.

1. Земля у нас в саду очень твердая и обрабатывать (till) ее трудно.
2. Мы вносим удобрения, и наши овощи растут хорошо.

4. Retell the text.

TEXT B

Essential elements of the soil

Primary elements. Of the eleven essential elements obtained from the soil by plants, six are used in relatively large quantities. They are nitrogen, phosphorus, potassium, calcium, magnesium and sulphur. Because they are used by plants in relatively large amounts they are sometimes called the primary elements. Plant growth may be retarded because these elements are lacking in the soil, because they become available too slow, or because they are not balanced by other nutrients. This is very often true with nitrogen.

When nitrogen, phosphorus and potassium are artificially applied to the soil, they are usually added as farm manure and especially as commercial fertilizers. Therefore they are often called fertilizer elements. In the same way calcium and magnesium are applied as lime and are called lime elements. Sulphur usually goes into the soil as an incidental ingredient of such fertilizers as farm manure, superphosphate, and sulphate of ammonia.

Microelements. The other nutrient elements (iron, manganese, copper, zinc and boron) are used by higher plants in very small amounts and therefore are sometimes called trace or microelements. These elements are just as important for the growth of plants as the primary elements.

Notes

a) primary elements – основные элементы (макроэлементы);

b) because these elements are lacking in the soil – из-за недостатка этих элементов в почве;

c) because they are not balanced by other nutrients – зд: потому что они не дополняются в соответствующей мере другими питательными веществами;

d) this is very often true with nitrogen – зд. это особенно касается азота.

Words and phrases

phosphorus – фосфор

potassium – калий

calcium – кальций

magnesium – магний

Sulphur – сера

retard – задерживать, замедлять

artificially applied – исскуственно вносить

manure – удобрение, навоз

commercial fertilizer – минеральное удобрение

lime – известь

incidental ingredient – случайный, несущественный ингредиент (составная часть)

superphosphate – суперфосфат

manganese – марганец

copper – медь

boron – бор

nutrient – питательный

trace elements – микроэлементы

Comprehension check

1. Answer the questions.

1. What essential elements of the soil can you name?
2. Under what conditions may plant growth be retarded?
3. What is a fertilizer element?
4. What elements are called lime elements?
5. What microelements do you know? Are they important for the growth of plants?

2. Write a short essay "Soil".

UNIT 9

Miscellaneous information

1. Did you know?

1. Vanilla is the dried fruit of a parasite orchid, a native of the tropics. It is much used for flavoring ices, syrups etc.

2. The hemp-plant is a native of Persia. It is much grown in Russia, Asia, as well as Africa and North America. It is used for making canvas, ropes, etc.

3. Sago is produced in India. Sago powder is used for making bread.

4. Dried grapes are called raisins. The best raisins are grown in Turkey, Spain and Syria.

5. Sugar is extracted from different plants. It is made from the sugar-cane, the beet-root, the sugar-maple, the date palm, etc.

6. Rice is grown in many parts of the world. It is usually sown on watery soil, because it requires much moisture. Its straw is used for making hats, baskets, etc.

7. Mustard is the powder got from the mustard plant. It is made by crushing the seeds of the plant.

8. Maize is not much used for brad-making, because cornbread is very crumbly. But it is widely used as food for livestock.

9. The lemon tree is a native of Asia. Now it is grown in all warm countries, especially in those around the Mediterranean. Citric acid is extracted from lemon juice, but it can be got from other citrus plants as well.

10. Peas, beans and lentils are grown in temperate climates. Their most striking characteristic is their bright, butterfly-shaped flowers.

11. Dried plums are called prunes. They are mostly produced in France.

12. Spices are aromatic substances. They are used to flavor food. Some of the commonly used spices are pepper, mustard, cloves, cinnamon and vanilla.

2. The latest news.

New dwarf trees good for show and apples.

The new dwarf apple trees can be for show as well as for fruit. You can stick a couple on the smallest lot. Or in a 20-by 20-ft. plot you can plant 8 dwarf apple trees and a pear, a plum, and a cherry. And you'll have fruit from this Tom Thumb* orchard in 2 years-bigger fruit than from normal-sized trees.

* Tom Thumb – мальчик-с-пальчик.

3. Four tips for early tomatoes

From Michigan State horticulturists come these four tips for getting early tomatoes:

1. Grow plants in 4- by 4-in.* bands or pots. Result will be stocky, well-formed plants, needed to support early crop of fruit.

2. To get more early tomatoes from a given space, plant two to a pot, then transplant them two to a hill. This doubles potential number of early flower clusters.

3. Waxed paper protectors which later can be punctured give plant protection against wind and weather, and result in tomatoes 2 weeks earlier.

4. Night temperature of 70 and more the first 3 weeks, plus fluorescent light from 6 to 11 p.m., gives much more vigorous tomato plants. After this period, let night temperatures drop to 60.

*In.-inch – дюйм (2,5 см).

4. Start a one-tree family orchard

Read text 4–6 for pleasure. Use a dictionary.

You can grow a family apple tree on which four or five different kinds ripen from July to frost. No wonder they call it the “one-tree orchard!”

You either buy a multy-variety tree or graft it yourself. John Snyder, Washington State horticulturist, has “built” such a tree in his backyard. In July, he has Lodi and Yellow Transparent. He picks Duchess and Wealthy in August and September, and McIntosh ripen in October.

Here are two ways to do this yourself:

1. Graft new varieties to top-worked branches of an old tree in March or April. Use the cleft-graft method on limbs 1 to 2 in thick.

2. Bud a 1-year-old tree in August. Select a hardy variety like Lodi, Duchess, Wealthy, Northern Spy, or McIntosh as the foundation tree. Avoid varieties like Delicious that tend toward narrow-angle branching.

5. Skim milk to up yield: “Put a little skim milk on your garden!”

That may be the advice of the future. At Montana Experiment Station, 1/4 oz*. of dried skim mixed in each cubic foot of soil stimulated root growth of many flower and

vegetable seedlings. Experimental work was done especially with tomatoes and pansies. It caused pansies to bloom earlier and oftener and give bigger blooms. It made tomatoes ripen sooner and produce larger yields. Work has also shown up** well with onions, potatoes, and other garden crops.

(oz.* – ounce – унция ~31 г; to up** – поднять)

6. Are there any plants that can attack others plants?

The answer is yes. There are many large flowering plants that are parasites, attacking crops and trees, and causing extensive damage.

These parasitic plants are members of various botanical families. Some attack only another plant's roots, others attack only the stems. Some live on weeds and annual crops while others take the roots of jungle vines or the trunks of trees as their hosts. There are even trees that attack other trees in Brazil and Australia. They, unlike other green plants, have a greatly reduced need (and therefore capability) for photosynthesis to produce carbohydrates.

An extremely unique feature of these flowering parasites is their ability to grow one on top of the other, each new parasite using the one before it as the host. No one knows how long this parasitic chain reaction can continue.

Mistletee, a member of the family Loranthaceae, is the most common of the parasitic plants.

The dodder of the family Cuscutaceae is the second most common parasitic plant.

In India and the West Indies, it has been observed that two genera of dodder, Cuscuta and Cassytha, attack each other and "fight" for survival.

PART 2. PRESENTATION MANUAL

Preparing a presentation

Step 1. Know the context of the presentation: Who are the audience, and what are their interests? How big will the audience be? How long is the presentation to be? What facilities are available for visual aids? What about time for questions?

Step 2. Decide on your topic. Think carefully about the main point or points that you want to communicate. You should be able to write these clearly in one or two sentences.

Step 3. Structure the content. Most people begin with an unordered collection of ideas and then put them into sequence. Then decide on the relative weight of each section of the talk.

Step 4. Think of ways of catching the listeners' interest: examples, anecdotes, impressive statistics, interesting quotations.

Step 5. It is useful to “rough-draft” visual aids at this stage, because they can help you make the sequence of points more clear and logical. Think about whether some information should be put into handouts.

Step 6. Check overall length, and the relative weight of sections. A little too short is better than even a little too long. As a rough guide, allow about 1 minute for every 100 words, plus time if necessary for changing transparencies. One A4 page, double-spaced, takes about 3 minutes of speaking time.

Step 7. Finish preparation of visual aids. If you are using PowerPoint data projection, having slides or transparencies is a useful back-up in case of last-minute technical problems.

Step 8. Prepare handouts, if you want them. Make copies.

Step 9. Plan the exact words you will use for the opening, the transition points, and the conclusion. Practice them again and again. If you are anxious, write on cards the introductory and concluding sentences. Make more notes if you need them (see Checklist 2).

Step 10. Reherse your presentation, as often as necessary. Do not omit this step! You can practice alone, or ask a friend or colleagues to listen to you. With practice, you will become more fluent and at ease. Make sure you speak simply, but in academic not

conversational style. Project your voice across the room. You will find this slows your speech. Check the timing carefully and make adjustments if necessary. Mark a time reference at one or two points in the presentation.

Step 11.Think about the questions the audience may want to ask you. Plan how you will answer them.

Step 12. On the day of your presentation, be calm and organized. If you are unfamiliar with the location, go beforehand to plan where you will stand and where you will put your papers and to see how the projection works. Arrive in good time for your presentation. Remember to take all your visual aids, notes and papers.

If you feel nervous, do not worry. That's normal. Breathe slowly and deeply for a few minutes beforehand, and try to relax the muscles of your face, mouth and neck. This will make you look relaxed, and will improve the quality of your voice. Then remind yourself how well prepared you are, and enjoy it. Concentrate not on yourself or your notes, but on the audience and making clear to them what you have to say.

Visual aids

If you are using an overhead projector, follow steps 1–4 below.

1. Before your presentation check that the equipment works. Decide on the best place to stand, so that you do not obscure the view of the audience; decide where to put transparencies before and after use; decide whether you will point at the transparency or at the screen (or not at all).
2. If you point at the transparency, use a pen as a pointer.
3. Detach the transparencies from their backing paper to make things easier during your presentation. Interleave them with plain paper.
4. Number the transparencies in case you drop them.

If you are using PowerPoint data projection, follow steps 1–6 below.

1. Check beforehand whether you should bring your presentation on diskette or CD or DVD. If you are bringing a computer, check on the type of connection required for the data projector.

2. If possible, set up your presentation before your talk. This can take several minutes, even if all goes well.

3. Have a blank slide at the start and end of your presentation. This makes your start and finish smooth.

4. Power Point has an excellent online tutorial and help system. Use it when *you* are preparing your presentation so that you can make full use of its faculties (such as time monitoring, handouts and notes).

5. Don't be tempted, because of PowerPoint's capabilities, to make your slides too “busy”. That will distract the audience's attention.

6. Even if you are giving your presentation in a well-equipped room, technology can go wrong. Print out your PowerPoint slides on to transparencies, so that you have an alternative.

Handouts

Handouts are useful in three ways.

1. They show data that are too detailed for a visual aid, such as transcript data from interviews, or mathematical calculations. If there is a lot of detail, the points you want to refer to in your presentation should be clearly highlighted in the handout. The handout is given immediately before the presentation, and then referred to.

2. They provide a “signposting” framework to guide the audience through your talk. In this case, the handout will be a note-frame, which is given out before the presentation. Don't put too much into it, or the audience will read the handout instead of listening to you.

3. They act as a record of your presentation, which the audience can take away. This could be either a note-frame or a fuller text. For this “record” type of handout, it's common practice to add your address and email address, so that people working in the

same field can contact you later. Some presenters like to give out this type of handout at the end of their talk, so that the audience listens with full attention. Others give it out at the start, as a support to listening.

Keep your handout short – one page if possible.

Notes

Visual aids often provide sufficient support for your presentation. If you feel you need notes as well, remember that they will be more to cope with during the presentation: you will have to deal with the visual aids, the notes, and the audience.

1. Cards or A5 paper are often recommended because they are neater in the hand than big pages. Make sure you number them clearly!
2. A good alternative is to use photocopies of your visual aids, with notes written on them. It is then easier to coordinate your progress through notes and visual aids.
3. Write very large and clear, with plenty of space.
4. Use colour, so that you can quickly locate key points or words.

Signposts and language signals

Introducing the talk

I'd like to talk about...

I'm going to discuss...

I want to tell you about...

What I'd like to do is to explain to you...

What I'm going to do is to describe...

What I want to do is to give an account of...

Ordering points (Time order)

To begin with At the beginning At the start

Secondly Then Next After that

Finally At the end

Ordering points (Listening and adding)

First(ly)

Second(l)

A second reason

Another point

Also

Last(ly)

Third(ly), The third aspect Other factors In addition Finally

Transition

Having considered (X), let us now move on to (Y). So these were our methods. What about our results?

Contrasting

But However Nevertheless,

On the other hand By contrast

Referring to visual aids

This slide (graph, chart) shows... Here you can see Here are This is

Defening

By X we mean yy.

X is defined as yy.

We call Xyy.

We can define X as yy.

Rephrasing

That is, In other words, To put it another way,

Giving an example

For example, For instance, such as say, like

To give you an example, Let me give you an example.

Including

An example of this is.

Here is an example.

Emphasising

Actually in fact indeed

Importantly surprisingly interestingly

It is clear that clearly obviously

I'd like to underline highlight stress

It's important to bear in mind keep in mind remember

Concluding the talk

So, f*inally*

To summarize Summing up To 'Conclude In conclusion

I'd like to finish by saying...

I'd like to conclude now with a few remarks about...

Non-verbal communication

Posture

a) Stand straight but not stiff.

b) Balance your weight evenly on both feet.

c) Standing well allows your diaphragm to move more easily to control your breathing and voice production. So you feel better, sound better, and look better.

Movement and gestures

Too much movement is distracting; no movement at all is boring and uncommunicative.

b) Use movements and gestures to signal transition points or to stress pointsof importance.

c) Avoid meaningless gestures and repetitive movements. Don't wave your left hand about in circles or wave the pointer about. Use the pointer only when necessary, and with a firm movement. If you have a laser pointer, keep your hand close to your body when using it; don't hold it at arm's length Like a gun.

Facial epression

a) Your facial expression must match your message. If you claim somethingis interesting, look as if you find it so.

b) Relax your facial muscles. If you look nervous, the audience will not be comfortable.

c) In the 10 minutes before you start, make sure your tongue is relaxed and not raised tensely against the roof of your mouth. If you can discreetly yawn widely once or twice, this will help to relax your facial and throat muscles and to feel less tense.

Voice

a) Speak a little louder than you think is necessary. Project your voice to the back of the room. Use your diaphragm to do this, not the muscles of your throat. Keep the muscles of your throat and mouth relaxed, otherwise your voice loses resonance and power, and is less pleasant to listen to.

b) Speak a little more slowly than you normally do, especially if you feel nervous. This will help you sound and feel more confident. A useful rule-of-thumb is: the larger the audience, the more slowly you should speak.

c) Use your voice as a communication tool. Vary the speed-speak more slowly in the introduction and the conclusion. Use stress for important points and contrasts. A short silence can also serve to emphasize a point or a transition. All these techniques contribute greatly to making a presentation interesting to listen to.

Eye contact

a) Eye contact creates a relationship between the speaker and the audience. It encourages the audience to listen. It helps to relax the speaker. So look atpeople.

b) Start and end with direct eye contact, looking round the whole audience. During the talk, don't gaze over people's heads or out of the window. Look at your visual aids (and notes if you have them) as much as is necessary, but don't stare at them and talk to them. Look at the audience as much as you can.

c) Don't look always at the same section of the audience or, even worse, at one Victim'. Don't dart your eyes about quickly or sweep your gaze round like a searchlight. Focus on one person or group for 1–2 seconds; then look at another person or group, then another.

Asking and dealing with questions

Introducing a question

I've got a question about... Could I ask a question...? Sorry, could I just ask...?

Clarification

Sorry, I didn't follow what you said about. What did you mean when you said ? Could you give me an example of ?

More information

I was interested in what you were saying about...

Could you tell us more about...?

Could you expand a bit on what you were saying about...?

Checking comprehension

So *you mean...?*

So *you're saying...?*

Can I just check I've understood - did you say...?

Have I got this right:…?

Responding to answer

Yes, I see.

OK, thanks.

Thanks, that's clear now.

That's not really what I was asking. What I meant was...

OK, but what I really wanted to know was...

Sorry, I'm still not clear about...

Perhaps I didn't make my question clear. What I was really asking was...

Dealing with questions

Answering directly

Well, *as I understand it...*

If I've understood X correctly,...

Well, according to our results...

OK -1 think I can answer that quite simply..

Playing for time

Er, let me see... Well, I suppose I'd say...

That's an interesting/a very good question! Well…

Handling complex questions

Well, those are really two different questions. OK, let me deal with those questions one at a time. Your first question/point was about... I'll deal with your second question/point first, if I may.

Dealing with awkward questions

haven't had time to look into that, sorry.

I really don't know / I'm not (quite) sure / I've really no idea.

I'd need to think about that.

I'm not absolutely sure, but I'd guess that...

I don't really have any experience of that, but X might like to comment?

I don't think there's enough evidence to say for sure.

I was just coming to that / I'll come back to that in a minute, if that's all right. I just wanted to...

That's rather outside my field.

That isn't really my field, but perhaps X could say something about... ?

That's an important question, but it's really too complex, to deal with now.

That's really a whole different argument / discussion / topic.

There isn't really time to go into that now/here.

I think we're going off the point a little.

Well, I think you'd be wrong to assume that...

You seem to be assuming that...

Do I take it you don't think / believe / accept...?

PART 3. ELSP TEXT BANK

Vegetation and wildlife

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The UK was originally a land of vast forests, mainly oak and beech in the Lowlands and pine and birch in the Highlands, with great stretches of marshland and smaller areas of moors. In the course of time, much forest land was cleared and almost all the Lowlands outside the industrial areas were put under cultivation. Today only about 6 per cent of the total land area remains wooded.

Extensive forests remain in eastern and northern Scotland and in southeastern and western England. Oak, elm, ash and beech are the commonest trees in England, while Scotland has much pine and birch. The Highlands with their thin soil are largely moorland with heather and grasses. In the cultivated areas that make up most of Britain there are many wild flowers, flowering plants and grasses.

The fauna, or animal life of the UK is much like that of northwestern Europe. Many larger mammals such as bear, wolf have been hunted to extinction, others are now protected by law. About 50 land mammals are still found in the UK. There are many foxes. Otters are common along rivers and streams, and seals live along much of the coast. Hedgehogs, hares, rabbits, rats and mice are numerous. Deer live in some of the forests in the Highlands of Scotland and England. There are several small lizards, two or three kinds of snakes and several kinds of frogs and toads.

Some 230 kinds of birds live in the UK, and another 200 are regular visitors, many are songbirds. The most numerous are blackbirds, sparrows and starlings. Robin Redbreast is the national bird of the UK. The number of ducks, geese and other water fowl has diminished during recent years. Partridges, pheasants and other large and rare birds are protected by law. Gulls, geese and other sea birds nest near the coast.

There are many threats to wildlife and ecological balance around the coast. The biggest threat to the coastline is pollution. More than 3,500 million tons of industrial waste is pumped into the North Sea every year. “We cannot continue to use our seas as

a dustbin and expect our coastline to survive", says Greenpeace. Many other ecological problems may be caused by privatization of the coast. The quality of rivers has also declined. Many of them are "biologically dead", i. e. unable to support fish and wildlife.

Soil

Soil plays a vital and important role in the life of the world and mankind. It is in fact a highly organized physical, chemical and biological complex all of us are dependent on. As the supporter of vegetable life, soil plays the most fundamental of roles in providing food for all animals and men.

Soils develop under the influences of climate, vegetation, slope and drainage, time, the nature of the parent material, and the culture. Climate influences plants, animals and soil directly. Plants influence the soil, the animals and the climate near the ground. Animals play a considerable role in soil development, the type of soil often influences the animals which are present in it, while the animals also influence the vegetation which is growing in the soil. Finally climate, through weathering, influences the rocks, which in time become part of the soil through the processes of soil formation.

All soils do not have the same utility, but man uses different soils in different ways. "Good" land for the production of food-stuffs must lie well and have good depth, for yields are dependent upon the ability of the soil to take up and use fertilizers and water. Man has done much to adapt crops to the soil and to provide various kinds of fertilizers for plant growth and development. Soils that are not good for the production of food-stuffs may be valuable in other ways. For example, podzols in high elevations are poor for crops but they comprise excellent forest soils.

Each soil series requires skilful handling if it is to produce to its maximum potential; but no two series make the same demands. From season to season conditions of temperature and moisture change, so the farmer must change the management to produce better drainage, improve tilth, prevent erosion, and test the soil to identify the proper kind and the correct proportion of fertilizer needed. Only by careful study of the soil, resulting in an understanding of the complexity of its nature and uses, will man be

able to provide food for all the people who will inhabit the earth. The soil cannot reproduce itself. Therefore, man should improve it through good management and treatment so that future generations can farm more efficiently than their fathers and grandfathers have done. Man can improve the soil now in use and even discover how more kinds of soils can be utilized more productively.

So, the results obtained in soil science can be applied to practical problems in agriculture, horticulture, forestry, engineering, and in planning the future use of land.

Flora

In the 1800s when the first Europeans arrived, about 70 % of New Zealand was covered in native forest. Much of it was soon cleared for timber (as in the large kauri forests) or to make way for farming.

Despite there not being as much native forest around as there was before the arrival of Europeans, NZ still has some magnificent areas of native forest and bush. About 10 % to 15 % of the total land area of the country is native flora, much of it in protected parks and reserves.

The variety of vegetation types in NZ is enormous. Heading south from the giant kauri forests of Northland there are the luxuriant lowland kohekohe forests of the Bay of Plenty; the rainforests dominated by rimu, various beeches, tawa, matai and rata, and a great variety of tree ferns; the podocarp and hardwood forests of the lower parts of the North Island with its kahikatea, tawa, rimu, rata, and kohekohe; the summer-flowering alpine and subalpine herb fields; and the windswept scrub of the smaller islands.

In the South Island the vegetation changes dramatically as you climb into the mountains. The lowland supplejacks give way to rimu, miro, and then tree ferns at about 800 metres. Above 1000 metres the totara, wineberry, fuschias, rata and kaikomako are gradually left behind, to be replaced by subalpine scrub. At about 1200 metres the scrub gives way to the tussock grasses and alpine herb fields, and at the extreme heights only some hardy lichens hang on to the exposed rock.

Like the Australian species, most of the 72 NZ orchids are not large or brilliantly coloured; one exception is the beautiful Earina autumnalis, which has perfumed cream flowers.

Various introduced species have been planted in large tracts for the timber industry. The most obvious imports are the massive plantations of radiata or Monterey pine and Douglas fir (Oregon).

Tne Maori language has bestowed marvellous names on some of the native plants of NZ, names that are almost unpronounceable to Europeans-tawhairauriki, kowhaingu-tukaka, to name a handful. Some of the English names are nearly as colourful, and it's interesting to speculate about their derivations – gum digger's soap, wild Irishman, seven-finger, bog pine, flower of Hades and Dieffenbach's Spaniard.

Ferns

One of the prominent features of the NZ bush is the proliferation of tree ferns which are intertwined into the undergrowth. There are over 80 species of fern and five species of soft fern. Perhaps the most interesting are the mauku (hen & chickens fern; Asplenium bulhifenim) and the raurenga (Kidney fern; Trichomanes reniforme), and the rarest would be the para (horseshoe or king fern; Marattia salicina). A common sight on NZ hillsides is the bracken fern (Pteridium aquilinum), growing to three metres or more.

The mamaku (black tree fern; Cyathea medullaris) is the largest of the NZ ferns and grows to a height of 20 metres, with the fronds extending up to seven metres. It grows throughout the country, common in damp forest gullies.

The ponga (silvertree fern; Cyathea dealbata) is the national symbol which adorns the jumpers of many of NZ's sports representatives. It grows up to 10 metres in height and the fronds, which extend up to four metres, are white on the underside and dull green on the upper side.

The piupiu (crown fern; Blechnum discolor) is found throughout the country and is very noticeable because its bright green fronds, up to 1,5 metres in length, often form a significant part of the ground cover. When the frond is turned over it reveals a silvery-

grey side. Interestingly, it is the colour of the two types of fronds of Blechnum species, one brown and one green, which denotes whether they are fertile or sterile. The brown fronds look as though they are dead or dying, but they produce the reproductive spores. Other ferns produce spores seen as brown spots on the underside of green fronds.

What is genetic engineering?

Genetic engineering (GE), genetic modification (GM) or genetic manipulations – all the three forms mean the same thing, the reshuffling of genes usually from one species to another. Existing examples include: from fish to tomato or from human to pig.

Today we find it mixed in our food – genetically engineered soybeans and maize, sugar beet, wheat, potato, strawberries and so on. But if you want to understand genetic engineering, it is best to start with some basic biology.

A cell is the smallest living unit, the basic structural and functional unit of all living matter (a plant, an animal or a fungus). Some organisms such as amoebae, bacteria, some algae and fungi are single-celled. Humans are quite different and are made up of approximately 3 million cells. Cells are stacked together to make up tissues, organs or structures (brain, liver, bones, skin, leaves, fruit, etc.) In an organism, cells depend on each other to perform various functions and tasks.

Proteins are the basic building materials for a cell giving cells the capacity to function properly.

Chromosomes means “coloured bodies”. They look like bundled up knots and loops of a long thin thread. They are the storage place for all genetic (or hereditary) information. This information is written along the thin thread, called DNA. “DNA” is an abbreviation for dioxyribonucleic acid, a specific for acidic material found in the nucleus. The genetic information is written in the form of a code. When a cell multiplies it will also copy all the DNA and pass it on to the daughter cell.

The totality of the genetic information of an organism is called genome. Cells of humans, for example, possess two sets of 23 different chromosomes, one set from the mother and the other from the father. The DNA of each human cell corresponds to 2

meters of DNA if it is stretched out. The length of DNA contained in the human body is approximately 60,000,000,000 kilometres. This is equivalent to the distance to the Moon and back 8,000 times!

The information contained on the chromosomes in the DNA is written and coded in such a way that it can be understood by almost all living species on earth. Thus it is called the universal code of life.

The information for how any cell is structured or how it functions is all encoded in single and distinct genes. A gene is a certain segment (length) of DNA with specific protein.

Genetic engineering is used to take genes and segments of DNA from one species and put them into another species. Using a set of techniques, GE makes it possible to break through the species barrier and to shuffle information between completely unrelated species; for example, to splice an insect-killing toxin gene from bacteria into maize, cotton or rape seed, or genes from humans into pigs.

The dying planet

David Attenburg is a naturalist. He has been traveling around the world for over seven years and produced a lot of television documentaries named “Life of Earth” and “The Living Planet”. But his next series might be named “The End of Life on the Dying Planet”. David is very worried about our world. He is depressed by what human beings are doing to our world.

In the Himalayas, for example, people cut down forests simply because they need firewood to keep warm. This leaves fertile Himalayan hills naked, unprotected from the heavy rains. The trees were umbrellas, but now the rain washes out the good soil, which ends up as mud in the channels of the river Ganges. So cutting down trees in Nepal drowns people in Bangladesh.

In Africa the gathering of wood is making the desert grow. The Amazon jungle is being destroyed at the rate of 29,000 square miles in a year. That's an area the size of the whole of Scotland disappearing every year.

Trees are a vital part of the water cycle, and of course they give us the oxygen that we breathe. And cutting down the rain forests kills the plants that grow under the trees as well, plants which help us fight disease. 40 per cent of our drugs, our medicines, are derived from plants and most of those come from the tropical rain forests.

Those plants also help fight the diseases that threaten our food. The funguses and moulds that attack wheat, for example, are continually growing stronger. But they only evolve to match specific varieties of wheat. So plant breeders beat the funguses by changing the varieties with the help of new genes that come from wild plants. That happens with all our food plants: rice, potatoes, wheat, barley, etc. And if we lose those wild strains, the field could be devastated and mankind would starve.

David Attenborough says that it's not just a distant problem. It is happening now. The floods in India and Pakistan, the starvation in parts of Africa – these are direct consequences of man's activities.

The blackberry

One of the best-known members of the Rubus genus, the blackberry actually belongs to the famous rose family, which also includes some of our other major fruits – apples, pears, plums and peaches.

As fruit, blackberries are high in food energy and protein, besides containing good quantities of calcium, iron and vitamin A. I use mine for just about everything when they are in season and freeze a lot for winter use. Blackberry wines, jellies and cobblers are something to dream about.

No matter where you live or which kind you prefer to grow, remember that blackberries have a shallow root system and need good drainage, plus adequate and fairly constant moisture.

They do exceptionally well in mild climates, but are not limited to them if varieties are chosen with care. Hardy erect and trailing varieties, including several thornless introductions, take northern winters in stride.

Preparing the soild should be as thorough as for a garden. Plow to a depth of nine inches as soon as the soil is workable. If the area to be planted is large, a good disking and harrowing is advisable before setting out plants. Also mix compost or other organic matter into the berry beds to encourage greater fruit production.

When setting out plants, be careful not to let stock dry out. If I cannot plant as soon as it arrives, I protect the roots from drying by heeling-in. To do this, dig a trench deep enough to contain the roots. Spread plants along the trench, roots down, and cover with moist soil. If plants are dry when I receive them, I soak the roots in water for several hours before either planting or heeling them in.

When ready to set the plants in the field, I dip the roots in a thin mud made with clay and water, or keep them in polyethylene bags. The coating helps protect roots from rapid drying while plants are being set. Before setting out, I cut the tops back so they are about six inches long. I find this six-inch top useful as a “handle” when planting, and it also shows their location.

Fertile soil

It is common knowledge that the original existence of soil was due to the very slow process of wind and water, heat and cold, weathering and pressure breaking solid rock into small pieces. After this the plant life developed, died down to add small quantities of weak acids. These acids act on the hard cracked rocks, dissolving out parts of them. Some of these dissolved substances such as lime and soda drained through the soil to be lost eventually in the sea, which, of course, is why the sea is salt.

A soil chemist will tell you that. soil is comprised of different sized particles; the coarse ones are called sand, the finer ones silt and the smallest of all clay. It depends on the proportions in which these are found whether a certain soil is suitable for one crop or another.

Handling started seedlings

From the time vegetables and flowers emerge from their potting soil in March until they are safely in the garden many weeks later, they need the most delicate and careful

attention. Poor handling of started seedlings can set them back so far they are not worth planting, and that means wasted time, work and money. Proper handling gets them off to a vigorous start, and that means harvests that are early and big.

Light

Did you know that seedlings need more intense light that mature plants? The results of insufficient light become painfully obvious, usually within a week. The stem of the seedling will grow tall but weak, with large spaces between the leaves, and it will lean in the direction of available light. Ideally, seedling plants should receive 14 to 16 hours of direct sun or bright light each day, either from the sun (at a window or in a greenhouse) or from fluorescent lights or a combination of the two.

If you have started plants early while days are still short, you can shift them from the morning windowsill to a lighting arrangement for the evening hours. Some sort of greenhouse, sun-pit or solar room is less energy – expensive that a bank of electric lights, but often a bit trickier for the average gardener to arrange. We still use fluorescent lights, but we're reading all the information we can get about solar greenhouses.

Oversupplying a plant with light is self-defeating, though. While plant species vary in the amount of light they require, most plants need at least five hours of darkness in each 24 hours, during which they convert stored carbohydrates into a form their tissues can absorb.

When raising seedlings under lights, we keep the foliage of well-started seedlings no more than three of four inches away from the tubes. If your light fixtures are not adjustable, you can use egg cartons, piles of magazines or other household flotsam to elevate the flats to the correct height.

Nourishment

Young seedlings, still growing on the food stored in the seed, need no extra nourishment until their true leaves emerge. But once the seedling has been transplanted and is growing well with its second set of true leaves, it must have either good, rich soil or periodic feeding. The soil mix we favor is made according to Thalassa Caruso's

recipe: Equal parts of: (1) leaf mold, good garden soil or purchased potting soil, (2) shredded sphagnum or peat moss, and (3) perlite (expanded volcanic rock) or sharp sand.

Generally, we give our future vegetable plants a feeding of diluted fish emulsion (follow label directions) the week after transplanting and every two weeks thereafter until we set them out in the garden. The fish emulsion is easy to use, and it is a natural source of vital elements and trace minerals.

It is important to avoid fertilizing the plants too early or too often. If your plants leaves look green and sturdy and are not few and far between, you've hit the right schedule. Heavier feeders like lettuce and cabbage require more frequent feeding than peppers or onions. Plants that receive fertilizer need plenty of light in order to make good use of the extra growth stimulation.

Tomato

Tomato may refer to both the plant (Solanum lycopersicum) and the edible, typically red, fruit which it produces. Originating in South America, the tomato was spread around the world following the Spanish colonization of the Americas, and its many varieties are now widely grown, often in greenhouses in cooler climates.

The tomato fruit is consumed in diverse ways, including raw, as an ingredient in many dishes and sauces, and in drinks. Botanically tomato is a fruit, but in everyday life it is considered a vegetable for culinary purposes. The fruit is rich in lycopene, which may have beneficial health effects. When absorbed from the stomach, lycopene is transported in the blood by various lipoproteins and accumulates in the liver, adrenal glands, and testes. As preliminary research has shown a correlation between consumption of tomatoes and cancer risk, lycopene has been considered a potential agent for prevention of some types of cancers.

The tomato belongs to the nightshade family. The plants typically grow to 1–3 metres in height and have a weak stem that often sprawls over the ground and vines over other plants. It is a perennial in its native habitat, although often grown outdoors in temperate climates as an annual. Early and cool-summer tomato varieties bear fruits

even where nights are cool, which usually discourages fruit set. There are also varieties high in beta carotenes and vitamin A, and tomatoes which can be kept for months in storage. Tomatoes grow well with seven hours of sunlight a day. A fertilizer with an NPK ratio of 5-10-10 is often sold as a tomato fertilizer or vegetable fertilizer, although manure and compost are also used.

There are around 7,500 tomato varieties grown for various purposes. Heirloom (varietal) tomatoes are becoming increasingly popular, particularly among home gardeners and organic producers, since they tend to produce more interesting and flavorful crops at the cost of disease resistance and productivity.

Hybrid plants remain common, since they tend to be heavier producers, and sometimes combine unusual characteristics of heirloom tomatoes with the endurance of conventional commercial tomatoes.

Tomato varieties are roughly divided into several categories, based mostly on shape and size.

"Slicing" or "globe" tomatoes are the usual tomatoes for industry use and fresh market, used for a wide variety of processing and fresh eating.

Beefsteak tomatoes are large tomatoes often used for sandwiches. Their kidney-bean shape, thinner skin, and shorter shelf life make commercial use impractical.

Oxheart tomatoes can range in size up to beefsteaks, and are shaped like large strawberries.

Plum tomatoes, or paste tomatoes (including pear tomatoes), are bred with a higher solids content for use in tomato sauce and paste, and are usually oblong.

Pear tomatoes are obviously pear-shaped, and are based upon the San Marzano types for a richer gourmet paste.

Cherry tomatoes are small and round, often sweet tomatoes generally eaten whole in salads.

Grape tomatoes, a more recent introduction, are smaller and oblong, a variation on plum tomatoes, and used in salads.

Campari tomatoes are also sweet and noted for their juiciness, low acidity, and lack of mealiness. They are bigger than cherry tomatoes, but smaller than plum tomatoes.

Potato storage

Storage facilities need to be carefully designed to keep the potatoes alive and slow the natural process of decomposition, which involves the breakdown of starch. It is crucial that the storage area is dark, well ventilated and for long-term storage maintained at temperatures near 4 °C. For short-term storage before cooking, temperatures of about 7 °C to 10 °C are preferred.

On the other hand, temperatures below 4 °C convert a starch in potatoes into sugar, which alters their taste and cooking qualities and leads to higher acrylamide levels in the cooked product, especially in deep-fried dishes – the discovery of acrylamides in starchy foods in 2002 has led to many international health concerns as they are believed to be possible carcinogens and their occurrence in cooked foods are currently under study as possible influences in potential health problems.

Under optimum conditions possible in commercial warehouses, potatoes can be stored for up to ten to twelve months. When stored in homes, the shelf life is usually only a few weeks. If potatoes develop green areas or start to sprout, these areas should be cut before using.

Commercial storage of potatoes involves several phases: drying of surface moisture; a wound healing phase at 85 % to 95 % relative humidity and temperatures below 25 °C; a staged cooling phase; a holding phase; and a reconditioning phase, during which the tubers are slowly warmed. Mechanical ventilation is used at various points during the process to prevent condensation and accumulation of carbon dioxide.

When stored at home, mature potatoes are optimally kept at room temperature, where they last 1 to 2 weeks in a paper bag, in a dry, cool, dark, well ventilated location. If mature potatoes are refrigerated, dark spots can occur and conversion of starch into sugar can give rise to an unpleasant sweet flavour when cooked. Only new potatoes can be refrigerated, and should be kept so, where they have a shelf life of 1 week. If kept in a too warm temperature, both mature and new potatoes will sprout and

shrivel. Exposure to light causes them to turn green. Also, it is interesting to know that potatoes absorb odors produced by pears.

Powdery mildew

Powdery mildew is a fungal disease that affects a wide range of plants. Powdery mildew diseases are caused by many different species of fungi in the order Erysiphales. It is one of the easier diseases to diagnose, as its symptoms are quite distinctive. Infected plants display white powdery spots on the leaves and stems. Normally the lower leaves are the most affected, but the mildew can appear on any above-ground part of the plant. As the disease progresses, the spots get larger and denser due to large numbers of asexual spores are formed, and the mildew may spread up and down the length of the plant.

Symptoms of powdery mildew of cucumbers

Powdery mildew of cucumbers first appears as pale yellow spots on stems, petioles of the leaves and leaves. These spots are enlarging as the white, fluffy mycelium is growing over plant surfaces and producing spores, which give the lesions a powdery appearance. Affected leaves become dull, chlorotic, and may show some degree of wilting in the afternoon heat; eventually they become brown and papery.

Comments

The pathogens generally overwinter on weeds and their spores can be carried long distances by air currents. Water on the plant surface or high humidity (50 to 90 %) favor the infection, and vigorous plant growth and moderate temperatures favor the development of the disease.

Management of the disease

Producers are advised to grow resistant cucumber varieties, follow good sanitation practices and growing technology guidelines as well as control weeds. In case disease symptoms first occur, it is recommended to apply a treatment and repeat it, if symptoms reappear.

Types of tomatoes

Tomatoes are commonly classified as determinate or indeterminate. Determinate, or bush, types bear a full crop all at once and top off at a specific height; they are often good choices for container growing. Determinate types are preferred by commercial growers who wish to harvest a whole field at one time, or home growers interested in canning. Indeterminate varieties develop into vines that never top off and continue producing until killed by frost. They are preferred by home growers and local-market farmers who want ripe fruit throughout the season. As an intermediate form, there are plants sometimes known as vigorous determinate or semi-determinate; these top off like determinates, but produce a second crop after the initial crop. The majority of heirloom tomatoes are indeterminate, although some determinate heirlooms exist.

Most modern tomato cultivars are smooth surfaced, but some older tomato cultivars and most modern beefsteaks often show pronounced ribbing, a feature that may have been common to virtually all pre-Columbian cultivars. While virtually all commercial tomato varieties are red, some cultivars – especially heirlooms – produce fruit in other colors, including green, yellow, orange, pink, black, brown, ivory, white, and purple. Such fruit are not widely available in grocery stores, nor are their seedlings available in typical nurseries, but they can be bought as seed. Less common variations include fruit with stripes (Green Zebra), fuzzy skin on the fruit (Fuzzy Peach, Red Boar), multiple colors (Hillbilly, Burracker's Favorite, Lucky Cross), etc.

There is also a considerable gap between commercial and home-gardener cultivars; home cultivars are often bred for flavor to the exclusion of all other qualities, while commercial cultivars are bred for such factors as consistent size and shape, disease and pest resistance, suitability for mechanized picking and shipping, and ability to be picked before fully ripening.

Keeping the seeds

To keep seeds is to prevent germination and at the same time to preserve the life of the seeds. Seeds should be thoroughly ripe and dry before they are stored. Those of

pulpy fruits are removed and cleaned. If the seed-vessels are dry and hard, seeds may be left in them till sowing time, but usually they are removed.

Hard seeds, as of trees and nuts, may be buried, that is, mixed with earth exposed to frost or to moisture for a considerable time. Most seeds, however, are stored dry in paper bags or boxes in a cool dry room. The receptacles should be tight to keep out weevils; if there are any signs of bug work, a little bisulfide of carbon may be poured in the receptacle, and the vapor of it will destroy animal life. This material is inflammable, and it should be kept away from flames. If seeds at storing time are moist and the weather is damp, they may be lightly kiln-dried before put away for winter.

Influence of light on germination

The influence that light exerts on germination is not definitely understood for all horticultural seeds. It is known, however, that seeds will often germinate in full sunlight, if the proper conditions of moisture and temperature can be maintained. Seeds sown on a moist surface and covered with a grass present an interesting study. They may have difficulty in getting a foodhold, and they present peculiar reactions to light.

It is well known, on the other hand, that some seeds will not germinate, or will at least appear unevenly, if subjected to sunlight. At least some of the delphiniums, papavers and Adonises germinate very imperfectly, if at all, in direct light. It is always advisable to keep germinating seeds in shade or partial darkness. Of course, the soil itself is sufficient protection if the seeds are covered.

Nematodes

Nematodes are small parasitic roundworms about one – sixty-fourth to one-eighth inch long. They live in the soil and usually move into the plant through the roots. Underground parts are more apt to be infected, but the infection of stems, leaves, and flower parts is fairly common. The nematodes that attack alfalfa live mainly in the

plant tissue and suck juices from the cells. Alfalfa may be attacked by the root-knot nematode, the dagger nematode, or the stem nematode. Nematode damage in alfalfa has been a serious problem in Nevada, Utah and California.

Plants infected with the root-knot nematode develop galls or knot like growths on the roots. Severe infections cause the roots to become thickened, rough, and club like. Considerable rotting may occur, especially late in the season. The formation of nodules by nitrogen-fixing bacteria on alfalfa and other legume roots should not be confused with the galls and knot like growths caused by nematodes. Plants infected with stem nematodes may have swollen stem and buds, shortened internodes, and deformed leaves or other plant parts.

Verticillium wilt

Verticillium wilt is a relatively new disease of alfalfa in the United States. It is considered to be a serious disease in Europe where it has been known since 1918. It was first discovered in the United States in the Pacific Northwest in 1976 and was positively identified in Wisconsin in 1980. The disease is caused by a fungus that invades the vascular system of the plants and reduces the flow of water and mineral nutrients to the leaves. Early symptoms are temporary wilting of upper leaves on warm days and a yellow or pinkish-orange discoloration on some leaflets. Chlorotic, V-shaped lesions extend from the leaflet tip down the midrib. The leaflets soon become yellow, bleached, desiccated, and twisted. They are early detached from the stem, which often remains erect and green long after all the leaves have died. A key characteristic of verticillium wilt is that not all plants in a stand are affected, and within an infected plant only one to a few of the shoots shows the symptoms during the early stages. Later, as diseased plants and shoots become more prevalent, the more seriously affected plants also are stunted.

Fertilizing, weeding and combating pests

Fertilizer can be distributed during the winter or shortly before seeding time. Commercial fertilizers are commonly distributed, along with seeds, by drills and planters. Manure is distributed most efficiently by a manure spreader.

After crops have begun to grow, a cultivator is used to destroy weeds and loosen and aerate the soil. A flame weeder, which produces a hot-air blast, can be used to destroy weeds growing around crops, such as cotton, that have stems of tough bark. The weeds are vulnerable to the hot air, but the tough stems protect the crops from damage. Chemical herbicides applied in the form of a spray or as granules are used extensively for weed control.

Insecticides for pest control are applied to soil and crops in the form of granules, dust, or liquid sprays. A variety of mechanical spraying and dusting equipment is used to spread chemicals on crops and fields; the machinery may be self-powered, or drawn and powered by a tractor. Aircrafts are sometimes used to dust or spray pesticides in areas where large crops of vegetables and grain are grown.

Chemical pesticides are used in nearly all farming operations. However, increasing concern over the harmful effects which pesticides may have on the environment has led to the use of alternative forms of pest control. For example, farmers use crop rotation. Certain pests are controlled by introducing an organism that kills them. Some crops are being genetically engineered to be more resistant to pests.

Implements for harvesting crops

Most cereal crops are harvested by using a combine. It removes the fruiting heads, beats off the grain kernels, and cleans the grain. The cleaned grain is accumulated in a grain tank.

Wheat and other cereal crops are harvested by a combine which picks the ears from the stalks and husks them. The ears are then transferred to a sheller, which removes the kernels from the ear.

Hay harvesting usually requires several steps. First, the hay is cut close to the ground with a mower. After drying in the sun, most hay is baled. A machine called, a field chopper cuts down green hay for use as animal feed. The hay is stored in a silo.

Specialized machinery is also used to harvest large root crops such as potatoes and sugar beet and to harvest fruits and vegetables. Some mechanical fruit-pickers that are used to harvest tree fruits, such as plums, cherries, and apricots, shake the fruit tree, causing the fruit to fall on to a raised catching frame that surrounds the tree. Nut crops can also be harvested in this manner.

СОДЕРЖАНИЕ

СПИСОК ЛИТЕРАТУРЫ

1. *Новый* англо-русский и русско-английский словарь. 70 000 слов и словосочетаний / сост. В.В. Андреев, О.Г. Алексеева. ─ М.: Дом Славянской книги, 2009. ─ 699 с.

2. *Учебник* английского языка для сельскохозяйственных и лесотехнических вузов: учебник для студ. вузов по с.-х. спец. ─ М.: Высш. шк.,1984. ─ 336 с.

3. *Романов С.Д.* Большой современный англо-русский русско-английский словарь-справочник: 80 000 слов и выражений современного английского и русского языка. ─ Донецк: ООО ПКФ «БАО», 2003. ─ 510 с.

4. *Evans V.* Environmental science: Career Paths / V. Evans, J. Dooley, Dr. E. Blum. – EU: Express Publishing, 2013.

5. *O'Sullivan N.* Environmental science: Career Paths / N. O'Sullivan, J. D. Libbin. – EU: Express Publishing, 2011.

6. *Evans V.* Agriculture: Career Paths / V. Evans, J. Dooley, K. Rodgers – EU: Express Publishing, 2013.

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