

Topic 23: Tying the shoots and breaking off green shoots

PLAN:

1. Tying the bush.
2. Curing the green parts of vine bushes. Breaking off shoots.
3. Chilling green branches.
4. Chasing the vine shoots.
5. Letting out extra side shoots of wine.
6. Removing aging leaves.

GLOSSARY (ГЛОССАРИЙ)

Names of terminology			Context of the meaning
Uzbek	English	Russian	
Barg	Leaf	лист;	One of the main vegetative organs of plants, acts as photosynthesis, transpiration and gas exchange.
Bo'g'im	node	Нарост	In the vine plant, the eye of the shoot is the part where the bud complex is located, usually much thicker.
Bo'g'im oralig'i	internode	междоузлие	The part of the shoot between the two eyes.
Chekanka	chasing	чеканка	The tip of the green shoot to be longer chasing
Chilpish	chilling	пинсировка	Chilling the growth point of the green shoot
Fotosintez	Photosynthesis	фотосинтез	The process of formation of organic substances of carbon dioxide and water under the influence of light in green plants, algae cells and some microorganisms; the transformation of solar energy into chemical energy in organic substances.
G'ujum	berry	кисточка	A berry of grapes
Gul	Flower	цветок	The part of closed seed plants that serve for mating, consists of rosebuds, sepal, coronas, pollinators and seeders _Ю

Hosil	Harvest	урожай	Cultivated from crops, trees, removable grains, vegetables, etc.
ko'z	buds	Почка	In a vine plant, a bud complex in one joint is called an eye
Kordon	Cordon	Кордон	Type of shaping a vine plant
Kurtak	Germ	почка; зародыш;	A member of the plant that appears bulging on the body and shoots, develops and breaks into parts such as leaves, flowers, branches, the initial member.
Novda	shoot	ветка	One year of Vine
Oidium	oidium	оидиум	Fungal disease of the vine infects the blue part of the vine bush throughout the growing season
Organik	Organic	органик	Formed from rotting of animals or plants; a substance obtained from the product of living organisms.
Po'stloq	Bark	кора; корьё (дубильное);	The part of the plant covering its body, branches and roots.
So'ri (simbag'az, voish)	trellis	Сори (симбагаз, войш)	A support device for growing a vine bush consists of wire and columns made in a horizontal or vertical way
Tokzor	vineyard	Виноградник	Grape garden, built from any variety of grapes
Tup	Bush	куст	A grain of a bush or tree
Xo'raki navlar	table varieties	Столовые сорта винограда	Grape varieties consumed in freshness
Xomtok	break off green shoots	пасынкование	Removing excess green shoots of the vine
Yashil operatsiya	Green pruning	зеленая обрезка	Agrarian activities that are carried out during the growing season with green parts of the vine bush, in particular leaves and green shoots.
Zang	Old vine trunk	Старый ствол виноградной лозы	Perennial branch of Vine.

1. TYING THE BUSH.

By tying, the elements of the bush are given a certain direction, polarity is controlled and conditions are created for the maximum mechanization of production processes.

There are winter or dry and summer or green types of tying.

Dry tying of bushes is carried out in the spring after the bushes have opened or before the buds bulge. Perennial parts of the bush and branches of the previous year are tied to leeches, cymbals, supports, etc., in accordance with the type of shaping provided for.

By means of tying, it is possible to eliminate vertical polarity, strengthen the growth force of the rod and other bushes' parts, or, conversely, reduce, evenly distribute the parts of the bush along the base. The best period for dry tying is from the beginning of the vine harvest until the buds bulge. During this period, the branches bend well and do not break.

Before tying, activities such as sanitary shrubbery, cleaning from old and detached bark should be carried out.

The best material for tying is scraped ribbons from fabric woven from cotton fibers. It is not recommended to tie the branches too tight, as long as it can cause the conductive tissues to be crushed.

The best way to tie is to tie an "eight – figure". The fabric is folded in two from the middle of the ribbon and fastened tightly to the support, then the necessary rod is tied with the end in a looser way. In this case, the tie does not slip on the base or wire rope, there will be no direct approach with the rod and the base (because a thin cotton cloth strip separates the middle of them), as well as the need to tightly end the knot after tying the rod.

Bending the branch should always be done gently, and the angle should always be less than 90 degrees, otherwise the plant will fall into the position as if this branch was lost, and from the bottom of such a bent place epicormic branch will begin to develop.

2. CURING THE GREEN PARTS OF VINE BUSHES. BREAKING OFF SHOOTS.

"Green pruning" is understood as agrarian activities that are carried out during the growing season with green parts of the vine bush, in particular with leaves and green branches.

Breaking branches. In this, according to the rule, slightly more eyes are left on vine bushes at the time of autumn bushing, taking into account the partial death of the eyes during wintering. In addition, in low-yield varieties, two to three times more eyes are left to select their harvests from branches that have grown from the eyes. This issue was presented in more detail in the section "load of the vine bush".

Pirovard natijada bahorda ko'zlardan ko'plab novdalar rivojlanadiki, ularning

barchasini qoldirib bo‘lmaydi, negaki ular tuplarning haddan ziyod quyuqlashib, yuklamaning ortib ketishiga olib keladi. Shu bois zarur bo‘lmagan yashil novdalar olib tashlanishi lozim.

Ultimately, as a result, in the spring, many branches develop from the eyes, which cannot be left all of them, since they over-thicken the bushes and lead to an increase in load. Therefore, green branches that are not necessary should be removed.

Also removed are branches that are inconveniently located, such as those that have grown downward, which have been pulled into a bush or supports. All “twins” and “triplets” are unified, that is, the second and third branches emerging from one eye are removed (Picture 1).



Picture 1. Unification of “Twin” branches developed from one eye

The second stage of normalization is carried out during the period when the bunches are well visible on the bushes, taking into account the rod load of the bush. At the same time, unnecessary epicormic branches on the bush are re-controlled.

If all three green branches that have developed in one eye are also harvested, then a branch that is best developed and has a large inflorescence is left, and the rest is broken off (Figure 2).

Once the breaking of the green branches is complete, it is necessary that the amount of green branches left is in accordance with the intended load, and their location is in a convenient place without thickening the bush.



Picture 2. Unification of the “triple” branches developed from one eye
(shown green branches that are removed with a red mark)

3. CHILLING GREEN BRANCHES.

Chilling is the disconnection of the growth point of the green branch. Chilling is carried out only in certain cases. As the bush grows, in late spring – early summer, there may be cases when some branches are extremely exceeded by others in growth strength. This is a natural manifestation of polarization, which is especially observed when giving a corded shape. In this case, it is possible to equalize the growth of the branch to one degree or another by chewing gum (Picture 3).



Picture 3. The view of a strongly overgrown green branch before the sprout (above) and after the sprout (below)

The stem then continues to grow at the expense of the epicormic branch, which are located in the upper leaf axils.

Sometimes chilling is also held to obtain harvested epicormic branch. This event is especially relevant in cases where the frosts have lost the main crop of branches, and the branches that have grown from the substitute bud are not formed. In this case, the most “delicate” chilling can be transferred, in which even the smallest leaves are left and only the growth point itself is removed. These leaf axils may then develop fertile epicormic branch.

In accordance with the rule, epicormic branch are not removed in the chilling,

since the growth of the stem is continued precisely at the expense of these.

4. CHASING THE VINE SHOOTS.

The difference of chasing from chilling is that in addition to the growth point, several small leaves are also removed, that is, unlike chilling, the tip of the green branch is elongated longer. In other words, chasing is a deeper chilling. Picture 4 below shows exactly the green branch above, with a red line in this position indicating where it will be disconnected when making chasing.



Picture 4. Chasing a strongly overgrown green branch (the part of the branch that is interrupted by a red line is indicated)

Although the order of execution of chilling and chasing is similar, their purpose is different, in particular – the temporary redistribution of assimilants. All leaves that are older but not well developed, that is, are not producers of nutrients, but rather consumers, are removed. In this, the members remaining on the branch, in particular the heap and grape heads, receive increased feed at certain intervals. Scientists have found that photosynthesis increases in the leaves remaining on the branch after the transfer of chasing. This phenomenon is temporary, it continues until the branch begins to continue its growth at the expense of epicormic branch. Chasing is carried out before flowering to improve the finish of pores in some varieties. During the period of sugar accumulation, it is possible to accelerate the accumulation of sugar in the pores by transferring chasing, but if this operation is carried out in the wrong term, on the contrary, the accumulation of sugar can be delayed.

Often on ordinary steep slopes, even when the branches reach the highest wire,

the owners are forced to transfer to the chasing. In this case, this operation will not be associated with the above goals, but only to stop the growth of branches and prevent thickening.

5. LETTING OUT EXTRA SIDE SHOOTS OF WINE.

Chasing is the removal of developed epicormic branch from summer shoots located in the leaf axils on the branch. Chasing is the most popular green operation on the vine, it is often carried out even without understanding the essence of the process. The concept of chasing is the removal of epicormic branch, which is exactly what it is used in most other plants. A certain good result is achieved by removing the bunches on the branch in the grapes. More than all stacking is important in eatable varieties,



Picture 5. Epicormic branch grown on a branch of the powerful growing eatable grape variety

since the high level of growth strength of eatable varieties stimulates the development of side branches (epicormic branch) throughout the entire growing season (Figure 5).

In technical varieties, on the contrary, the load is given large so that the bush does not grow strongly, while in weak and moderately growing branches, epicormic branch develop poorly.

During the period of formation of the bushes, it is not recommended to completely remove the bunches. It also makes no sense to hold the epicormic branch, which will be removed later, as a competitor to the feed. The entire force must be directed to the growth of the main branch. Sometimes some selected epicormic branch may be used as a derivative branch, substitute, or additional side branch.

In cultivated bushes, epicormic branches are partially removed with one or two leaves left (Picture 6). In this way, an additional leaf is left on the stem, which serves as full-fledged assimilants, in particular sugar producers, allowing to increase loading and productivity.



Picture 6. Epicormic branches with the tip removed leaving two (left) and one (right) leaves

If the epicormic branches need to be completely removed, then it can be broken and disconnected by gently curling it with a finger as early as youth. If the epicormic branches have grown in size, in such a case it can be cut off with vine scissors, leaving it to a 1-2 cm lump, so as not to damage the wintering bud under it (Picture 7).



Picture 7. A completely removed view of epicormic branches, which grew on a branch of the powerful growing eatable grape variety

After the removal of the tip of the epicormic branches, if one or two leaves are left in it after a certain time, new branches begin to develop in the axils of these leaves – the second order epicormic branches. Most often they are completely removed or left one leaf by chilling.

In the methodology of working out with the leaf apparatus of the vine bush, the specialist relies on many factors. This takes into account the yield load of the branch, the structure of the sucker, the density of the branches scattered along the sucker and even the ripening period of the crop. In very early and early ripening varieties, the second order epicormic branches work with leaves does not make sense. In them, it is advisable to leave two leaves in the first order epicormic branches and completely remove the second order of epicormic branches. In evening varieties, it is advisable to work with the leaves of the second order of epicormic branches. In this, the old leaves, which have already done their job on the branch, are removed, leaving two leaves in them, and in this way the leaf mass of the bush is rejuvenated and the maximum productivity of photosynthesis is achieved.

It is worth noting that the described operations are not part of the group of activities that must be strictly carried out in viticulture, but its conduct increases the efficiency of managing the bush and allows for high results.

Here it is permissible to dwell on another feature of epicormic branches. Scientists have found that epicormic branches' buds are more frost-resistant compared to those on the main branch, and the harvest is more fertile. Perhaps the buds of epicormic branches are formed during the warm period of the year, in the best

weather conditions, and therefore its crop yield may be high. Such a feature of bunches allows you to get a high yield even in varieties with low crop yields of buds or when grown in unfavorable weather conditions.

6. REMOVING AGING LEAVES.

This operation is not considered necessary, and not everyone can do it. Even so, it has its own advantages. The vine leaf actively works for about 40-50 days from the time it is written for the development of the bush, that is, it produces organic compounds as a result of photosynthesis. Later, its productivity drops sharply. As early as the period of flowering, it is now possible to remove the leaves at the bottom of the stem. This improves the circulation of air in the bush, the flowers are well pollinated, the inflorescences dry out faster after rain, and, it means, the likelihood of it getting sick is also reduced. It is for this purpose that the leaves around the formed grape heads are also removed, this operation reduces the risk of damage to the pores by serious diseases such as oidium and rot.

Later, the old leaves above along the branch can also be removed, only in this case, the leaf mass must be increased at the expense of the leaves on the stem.

Thus, by replacing them with aging leaves on the main stem using epicormic branches, it is possible to maintain the productivity of the leaf apparatus of the bush until autumn. This has a positive effect on the accumulation of sugar in the crop.

Knowledge and experience are necessary for effective work with the leaf apparatus, all the effort must be carried out with understanding. It should be remembered that young leaves are considered absorbent until they reach a size of at least 50 cm², due to which the deliberate removal of adult leaves and their replacement with young leaves that have not yet reached a productive barrel can only harm the bush and its yield.

Questions and tasks for control

1. What are the goals for tying vine bushes?
2. In what ways are vine bushes tied?
3. List the work carried out on the green parts of the vine bush.
4. Why and how is it done to break green branches?
5. What is chilling and why is it held?
6. What do you understand when it comes to epicormic branches of the vine, and for what purpose is it held?
7. What is the effectiveness of removing aging leaves on a vine bush?

Main conclusions:

1. It is worth noting that the described operations are not part of the group of activities that must be strictly carried out in viticulture, but its conduct increases the efficiency of managing the bush and allows for high results.

2. By tying, the elements of the bush are given a certain direction, polarity is controlled and conditions are created for the maximum mechanization of production processes.

3. Before tying, activities such as sanitary shrubbery, cleaning from old and detached bark should be carried out.

4. Bending the branch should always be done gently, and the angle should always be less than 90 degrees, otherwise the plant will fall into the position as if this branch was lost, and from the bottom of such a bent place epicormic branches will begin to develop.

5. Once the breaking of the green branches is complete, it is necessary that the number of green branches left is in accordance with the intended load, and their location is in a convenient place without thickening the bush.

6. The chilling measure is especially relevant in cases where the frost has destroyed the branches of the main crop, and the branches that have grown from the substitute bud are not formed.

7. More than all epicormic branches is important in eatable varieties, since the high growth strength of eatable varieties stimulates the development of side branches (epicormic branches) throughout the entire growing season.

8. With epicormic branches of the vine, an additional leaf is left on the branch, which serves as full-fledged assimilants, in particular sugar producers, which allows you to increase the load and yield.

9. Knowledge and experience are necessary for effective work with the leaf apparatus, all the effort must be carried out with understanding.

10. It should be remembered that young leaves are considered absorbent until they reach a size of at least 50 cm², due to which the deliberate removal of adult leaves and their replacement with young leaves that have not yet reached a productive barrel can only harm the bush and its yield.

SIW: *Describe how to make Chilling, brighten up its differences from chilling.*

Informational-methodological support:

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Self-control tests:

What direction is given to the elements of the bush by tying?
polarity is controlled and conditions are created for maximum mechanization of production processes.
polarity is not controlled and conditions are created for maximum mechanization of production processes.
the growth process is controlled and conditions are created for minimal mechanization of production processes.
the summer growing process is controlled and conditions are created for the mechanization of production processes.
What types of binding are there?
Autumn or dry and summer or green
Autumn or green
summer or green and dry or winter
Fall or green and summer or dry
When is dry tying of branches carried out?
after the bushes open in the spring or before the buds bulge
in the summer, the bushes are at the time of growth or before the buds bulge
after the bushes open in the spring or when the grapes are ripe
when the bushes open or bloom in spring
Why is the best period for dry tying felt from the beginning of the vine harvest until the buds bulge?
During this period, the branches bend well and do not break.
During this period, the branches grow well and do not break.
During this period, the branches develop sluggishly.
During this period, the branches do not bend well and it will be possible to tie dry.
The best binding method– “ _____ ” tie.
Octal binding
double binding
Threefold binding
Full link
Normalization of branches should be carried out in two stages, the first – when the branches begin to grow, the second – when they reach a length of how many cm?
10-15 sm
15-20 sm
5-10 sm
10-20 sm
Chilling or pinching green branches, this is– _____.
disconnecting the growth point of the green branch

disconnecting the growth point of the buds
disconnecting the growth point of a ripe branch
disconnecting the growth point of the branch
What is meant by making chasing?
deeper chasing
superficial chasing
middle chasing
Chasing
What kind of event is carried out on ordinary steep slopes when the branches reach the highest wire?
Calking
Chasing
Break off green shoots
Engraftment
Removing the developed bunches from summer shoots located on the leaf armpits on the branch is _____.
epicormic branch
Chekankalash
Chilpish
Xomtok
If the sideburns have grown in size, then in such a case with vine scissors to prevent damage to the wintering bud under it can be cut left to the..... cm collar. Fill in the blank.
1-2 sm
5-10 sm
3-4 sm
5-6 sm
How many days do the vine leaf actively work from the time it was written for the development of the bush, that is, it produces organic compounds as a result of photosynthesis?
40-50 days
30-35 days
20-30 days
45-60 days
How to remove bunches on yield bushes?
partial with one or two leaves left
partial leaving two or four leaves
partial with five or six leaves left
partial with one or three leaves left
In what varieties is sideburns more important than everything else?
eatable

raisins
technical
kayizbop
At what time can you accelerate the accumulation of sugar in the berry by conducting chasing?
during the period of accumulation of sugar
during flowering
during the ripening period of the berries
during watering
How many different types of breaking off green shoots are there?
2
3
4
only 1 type
When is unripe breaking off green shoots held?
when the berries are green
during growth of branches
when fruiting
when it blooms
What agrarian activities are understood by the “green pruning”?
during the growing season, the green parts of the vine bush are understood, in particular, agrarian activities, which are carried out with leaves and green branches.
during the growing season, ripe parts of the vine bush are understood, in particular, agrarian activities, which are carried out with grown branches.
Agrarian activities are understood, which are carried out with leaves and ripe branches.
during the flowering period, the green parts of the vine bush are understood, in particular, agrarian activities, which are carried out with leaves and green branches.
Bending the stem is always done gently, and the angle is always..... should be less than the level. Fill in the blank.
90
180
30
25
What parts of the bush and the branches of the previous year are tied to leeches, trellis, supports, etc., in accordance with the type of shaping provided for?
perennial
one-year

broken
new branches
If three green branches developed in one eye are also harvested, then what branch is left and the rest is broken off?
the branch that is best developed and has a large inflorescence
a branch that is not well developed and has a large inflorescence
the branch that is best developed and has a small inflorescence
a branch that is not well developed and has a little inflorescence
As the bush grows, in late spring – early summer, there may be cases when some branches are extremely exceeded by others in growth strength. This is a natural manifestation of polarization, which is especially observed when giving shape in what way?
when giving a cordon shape
when giving a head shape
guyo in shaping
cachetin in giving shape
In non-burying viticultural regions, how many weeks after the harvest of the bush begins?
2–3 weeks
4–5 weeks
10 weeks
1-2 weeks
Annual branches and perennial old vine trunk are cut on the basis of the bush, how many mm leaving?
3–5 mm
6–8 mm
1–5 mm
4–8 mm
How are the branches cut at 6-9 (10) eye lengths named for harvest in buried viticultural areas?
crop arrow
sprouted branch
green branch
unproductive arrow