

Alternative agriculture

INTRODUCTION

One more thing that's alternative. Not biological, ecological or organic, (in fact it's all of it) but alternative. Today everything is alternative, from medicine to, let's say, history, which was a direct cause to call this topic *alternative*, and there is a serious reason for it. This isn't just about agriculture, but something more serious, a new (alternative) way of looking at things around us, new way of thinking, setting new paradigms (no need to waste effort on breaking down old ones, they will die out on their own when the world understands their fallacy). There's something else here alternative, and not to shake your stick at. It's recreation. Today when we say "recreation" we picture some sport, and not some useful activity that might even fall under the description of "work". If you think that actual physical work is something to be avoided and something meant for people that can't find a better way, then don't bother reading this book.

Today's elite *western* civilization, with their holy tenants of market economy and democracy is currently on a downward spiral. Their leadership is greatly aware of this and is trying to sustain it as long as possible in an effort to keep the ground under their feet from collapsing. In these old conditions they are successful; they know the way things work and all the tricks to keep themselves on the top. In the future we shouldn't expect anything from them. They simply aren't in the state to turn to some other solution. For a long time they, in a fit of panic, pose the question of sustainable growth, something to extend their lifespan. The answer is none, at least not one that would suit them and their needs, which is to promote status quo. Basic principle of the market economy is simple and is based on supply and demand, and with that, constant increase of production – the driving force of the western civilization. Not even stagnation is allowed, growth must persist above a certain minimal percentage otherwise everything collapses. A man doesn't require great wisdom to understand that increase in production cannot go into infinity, at one point you will saturate the market, demand and growth will stop, and panic will begin. The West needed demand, new gates had to open, Berlin Wall had to fall, China had to adopt the western approach, some wars had to be fought, anything to increase demand, and with it, production. At first the problems seemed to go away for a while and that for an extended time enough people are taken into the market economy to keep increasing the production with no worries. But it didn't work out that way. If all went well investments would flourish, bankers would have no problems increasing investment into development and production. To sell its goods The West had to (and it still does) loan money to the financially poor East, which could only buy goods by going into debt. Money is still invested into spending, instead of producing, only to keep the dying economy barely functioning. Production is also moving east, due to cheap, efficient workforce. Cheap workforce becomes a customer who has low paying power – there is demand, and it is sated by manufacturing cheap low quality goods, which floods the market. Quality criteria have fallen to such a low degree that it is questionable to call them criteria at all. Today's criteria for such goods and manufacturing revolve around profit; and if you can profit, why ask any more questions? Export of the market economy to the East went poorly, and the exporters can feel its effects. Price of workforce and social security of

the workers has fallen, people are unhappy, Western civilization has kept its domination for a brief time thanks to its propaganda which is capable of convincing anyone into anything.

What happened to the “export” of war – government terrorism? What was imported was miniature terrorism, those of fanatical groups, very easily and “marketable”. It is obvious that neither one nor the other deems responsibility for their “responses”.

Except the market economy, West seems to be very proud of its freedom and the “holy” democracy. Regarding the freedom, it is a distant dream, because the mere mention of terrorism was enough to bring laws which reduce human freedom to the level below those of their dictatorial predecessors beyond the “iron curtain”. Democracy, which stands for multiple representatives of the people, revealed to be nothing more than another dictatorship; that of the majority vote. If you don’t find this convincing enough should observe the meetings of their parliaments.

In whichever area you look, today’s lead civilization is in its last hours. A lot of people did not accept its purely materialistic views, nor moral degradation which came from putting personal interest above all else and they did not accept money as something sacred. Human consciousness today surpasses the old ways of thinking; we must abandon the old paradigms and find new solutions for the man of today. It won’t be fast or easy, so better to start right away, while we still function as a working society. We live in a transitional time which must be used and find ALTERNATIVE solutions. We must not allow the fall of Western civilization to catch us unprepared. Only if we can find new solutions and develop them to a level of functionality can we expect to transition into a new civilization whose values will be more aligned to the conscious man, who turned away from the materialistic blindness and towards his true nature.

It is interesting that alternative routes generally do are not found by people in that area of expertise, who are professionally engaged than in the area to which they have some preference, but are not strictly oriented towards currently applicable paradigms. Do not expect from Agriculturist to seek alternative solutions in agriculture, too focused on what makes a living, even if they mustered the strength for to some sort of zigzags, society would have rejected him "because it does not bring the expected earnings, and we all live off the money, even If you do not care about yourself, we care about ourselves." Also, nothing should be expected from any politician, do not require any explanation, their kind and its functioning are well known, if there are exceptions they are drowned in the mass. Everything is on the back of alternatives - amateurs, laymen, dilettantes, naive, ignorant, eccentric, etc.

I cannot resist not citing a few “images” that were left to us by Miloš and Mitar Tarabić. They were very well involved in the development of mankind and their downfall. Citations are from Zdravko Cikuša’s book “The Kreman Prophecies” (Kremanska proročanstva) by the publisher “Stari Grad” Zagreb 1999. If you didn’t read this book do not wait too long. Here are some excerpts that correspond with our time:

-The entire world will be ruled by some kind of disease, and no one will know how to heal it. Everyone will say “I know how, I know how, for I am a scholar!” but none will really know.

-People will wander about searching, but they will not find a cure, which will, by god's help, be everywhere around them and inside them.

-They will drill wells in the earth and out of the draw gold that will power everything and give them light, speed and strength, and earth will weep, because there will be more gold and light on top of it, than under it, the gaping holes will wound her deeply.

-Men will dig everywhere, where they should and shouldn't, and the forces (of nature) will be all around them, unable to tell them "come and take me, can't you see I'm all around you?"

-Situation here will be the same as in the entire world. People will hate the air, the breath of god, and all of god's beauty, and run into the stench. No one will chase them into it, they will choose it for themselves.

-Here in Kreman many fields will be turned into meadows, and many hearths will be abandoned. People will come back here to heal, breathe fresh air and to get well again.

Let's not fool ourselves with the things that are going on. I guess it is clear to everyone that we have harmed the natural balance of the world. Things that started to happen are things that were told to us by the people with farther sight than ordinary mortals. They are correct.

Global warming started a chain of natural disasters. At least this winter it was obvious. What will happen if we are struck by some unforeseen and of our climate unusual catastrophe? What if we will have to worry for our very survival? If living inside cities will be impossible until the situation improves? Will we grow vegetables in pots? It is important that we make a backup plan for this! Well, how will we make use of this backup plan if we don't know how to grow plants, recognize ones with healing properties or find edible mushrooms? How will we work the earth or cut the grass if we depend on tools that cannot work without oil or petroleum? We have allowed the art of living of our ancestors to be forgotten, as if it is of no use to us. Do we have our own seeds which we can plant, if need be? Do these words sound catastrophic and/or real? Ask yourselves if you are capable of surviving an entire year without electricity, phone, gas and all other things we take for granted these days. What will we eat if markets stop selling fresh organic produce?

A quote from the book "Thoughts on life and gaining awareness" by Janez Drnovšek " (president of Republic of Slovenia at the time of writing):

"Here is a plan for our backup world. All we have to do is to find it and put it in order, this will help us and supply us with energy even on this world.

Such a project is not simple. But if we really want to achieve that goal, we will...

Many have already taken to this task. Mankind is becoming more aware. Now if we have gotten this far, let's make another step forward. Our other home in the country, in nature, shouldn't be just a vacation spot for spoiled city-folk. Let's enable it to allow us survival, and in the same sense, to enable ourselves. A time is coming when warmth and food will become very important. Let's check how the things with water are, where it springs from and what it's like...

We should also have a supply of old-fashioned tools. Mechanization is alright, however, should oil suddenly become scarce it will be of no use. In that case even a donkey would be more useful. Cows and goats would be useful for their milk, not for the meat.

A lot can be done in order to secure a backup world like this. We will have to study long and hard in the time that we have remaining. In the course of several years we can empower ourselves if instead of watching sitcoms and dull-witted politicians we spend our time with serious preparation.

Let's find our own corner. Set up or repair a house. Get the tools ready. Learn the basic stuff that can be of use for living independently. All it takes is to start, and then things will get easier, maybe we actually enjoy it. At the end we might confess that this kind of lifestyle is better, even as a reserve, for now...

Realize the fact that this is the world we live in. Become aware of its limitations. Do not fool yourself with the false sense of security.

Let's follow our own intuition. It is already warning us that this cannot go on for long. Only the illusions of this world can put out intuition to sleep, and then shout at us louder than it can. However, awakening can be very rough. Very rough."

Us two "weirdoes" have arrived at this conclusion several years ago. Perhaps reading books on that subject, apocalypse movies and other things have opened our eyes. Perhaps spending time in nature, observing and noticing that which God had created spun a wheel which, in return, gave us awareness of things we weren't conscious about. You start to awaken and see the world differently: realistically! You realize that you have to do something, but unfortunately you can't change the world overnight. People don't take you seriously, they think you are in some "phase" of your life and that you will get over it when you realize you're wrong and that you can't live like your ancestors did.

Well we have, without electricity or plumbing, built our own little house in the nature, planted a garden, an orchard and a vineyard, just the way we liked it. We have proven that it is possible to get healthy food without use of mechanization, have a vineyard without digging, pesticides and torn down the theory that a vineyard requires a "servant". Produce from our garden are large, juicy and plentiful, without the use of artificial fertilizer. We even have a forest on the slopes of Bilogora which we planted ourselves.

I think we have secured a "reserve location". It is now a sanctuary where we go during weekends, and there we find peace and satisfaction. Nothing can compare with the pleasure we get after a long day of work, sitting on our porch. After a delicious dinner and a glass of good, homemade wine, we enjoy the songs of birds and crickets while we read some books or talk. In the morning we are awakened by birds, coffee smells more fragrant and the greenery around us gives us strength for new endeavors, nature calls us to become a part of it.

We return every weekend here to breathe some fresh air, to heal, or even better, to repel illness of the urban areas and the frantic haste which affects us badly both physically and spiritually. We will tell you a story about how we spend weekends what kind of recreation we are using. We are happy with the with the things we have accomplished in these few years in our garden, vineyard and orchard.

HOW IT ALL BEGAN

It started with the vineyard. We bought a traditionally kept vineyard and a piece of land (pasture) on which we wanted to plant some fruit trees and turn one part of it into a field. Some kind of a shack with a vineyard is in essence the traditional form of recreation around Bilogora. Technology of grassing the vineyard is a family heritage and there were no qualms over this. There were however many attempts of modernizing the mowing of the grass, but all of them failed and we will talk about that later.

There was also no question about what to do with the orchard, since we were dealing with an extensive cultivation of fruit trees without modern agro technical measures, only thing that was coming into consideration was a solid distance between trees and, of course, grassing.

The field was to be used for growing corn, beans and potatoes for our consumption (using a classical method – plowing and sprinkling). Since we had a garden next to the house along with all this we got the need for mechanization. First a motocultivator with a bunch of add-ons, in the end a tractor (old one of course).

Just so the situation is clear, it was the end of the 80-ies and the start of the 90-ties, a very hard time and there was a need for survival. We got the idea to produce some vegetables for the local market, since we already had the technological capabilities. We bought some more land and started using the most advanced agro technical techniques, in order to get a high amount of large fruits and vegetables to sell on the local market. Appearance of any kind of plant illness or harmful insects was unacceptable because it would lead into a financial debacle. In this situation you can't casually look around the plants and intervene with a chemical aid if you notice some problems because at that point it is already too late, it is a guaranteed loss. Any treatment should be a preventive one. You can predict possible illness of the plant in different periods of growth and in different weather conditions, in order to use the chemical aid. You have to just carefully listen to the advice of the agronomist at the agricultural pharmacy (notice that even though it is a pharmacy, all "medicine" is marked as poison, and the difference between them is the amount of toxicity) and read the instructions you get with the chemical aid and the time it takes from the start of the treatment to the moment when the fruit or vegetable is no longer toxic to humans. Aside from those you should also pay attention to the instruction that tells you what to do with the package and the residue chemicals you didn't use. When you read this you start to get a good sense what you are putting into the food that you will be eating. I remember this one product that was famous for the ability to get soaked into the plant, so you didn't have to spray every leaf, and when you realize that through the plant it also went to the food you have on your plate, well, I fear for you appetite.

What happens to the earth in which the plants grow? It gets ruthlessly filled with poison! Remember the tractors hauling huge containers of water mixed with various chemicals to protect the plants that sprinkle it all over the fields. Our farmers tend to say this about corn: "It grows so nice as if planted on concrete." All the other vegetable cultures receive the same treatment. If the weather throughout the year was favorable, they'd say they had to sprinkle (for example apples) **only seven times!**

The earth absorbs and suffers all that, and about the "after 15 days it becomes harmless", that's a story for those who don't want to admit to themselves or others that they're lying. By doing that you

destroy the things which make the earth what it should be: alive. Those tiny and small creatures have their purpose of being, for years they have lived with humans in harmony until someone decided to destroy them because they could eat a couple of plants or because they are disgusted by the sight of a caterpillar, an earthworm or spider. We fight for big yields and still people die of starvation; if the price of potatoes they use to make chips isn't high enough, manufacturers will choose to throw it away rather than sell it, or God forbid, give it away. Perhaps it is for the better, the potatoes may be harmful with regards to the way it was grown. Would anyone admit to that?

Winegrowers spray their vineyards after any considerable amount of rain, because the rain washes the chemicals that dried up on the leaves. If the rain continues the vine is in big danger, and that's why winegrowers like to add supplements which make the chemicals stick to the leaf and lengthen the duration of its effectiveness. I remember one startup winegrower who was very excited to use these new achievements of the chemical industry, until the grapes were ripe and, proud, took his children to the vineyard. He picked the finest grapes and tried to wash them, of course, it didn't work, because he used the additives. Does he give it to his children, or try to explain to them that these big grapes he grew aren't actually edible?

Gardening, the kind we tried, based on a production of varied vegetables and retail sale on the local market, has one interesting characteristic involving chemicals.

Total number of used chemicals = number of species of vegetable X number of diseases or pests per species

However not all species are the same, but in average you will get a fairly accurate result, because wide spectrum chemicals are rare. In the basement we put an old closet which served as storage for the plant "medicine". They were stored in a cold and dark place out of the way of children. By the end of the season it was full.

Well what are we doing? At one time we reached the breaking point, and we couldn't go on any longer like this. We, as manufacturers didn't believe that what we're making is harmless, even though we were doing everything by the regulations and using legal substances found on the market. We knew that some of those products were used for years for protecting the plants and weren't proclaimed dangerous or banned.

We decided to do something about it and no longer use the "medicine" we had in production of vegetables. What we were going to do, we didn't know, but we didn't want to do it the old way, for certain. Selling the produce on the market was out of the realm of possibility, since we didn't want to use the chemicals to protect the plants it increased the cost of production (manual weeding is more expensive), and the competition on the market is fierce, with the price as the most important, if not the only criteria. In one TV debate show about healthy food a food inspector was asked about the current situation on market, and whether the food sold is healthy or not. His response was quite educational: "If it weren't healthy it wouldn't be sold on the market, so there should be no worry about that." Wonderful! So apart from not producing vegetables for other, we also reduced buying them from the market to the minimum. After this experience we knew exactly how the fruit and vegetables that end up on the market were produced.

We started looking for alternative solutions to growing plants. The city library proved a good source of information. Meanwhile we encountered a book written by an American author called "The Ruth Stout No-Work Garden Book" which spoke about the practical implication of covering the garden with hay. The book describes how placing hay over weeds solves the problem of weeding;

however this doesn't work on morning glory and creeping twitch, since they are very hard to get rid of once they set in.



PICTURE 1 No such thing as "No-Work Garden"

This book was all it took to start applying a technology we already used for our vineyard. We reached a decision to no longer use chemicals in the vineyard, garden or the orchard and instead we would cover the garden with hay. After a couple of years we managed to solve most of the problems and learned of a few rules to ensure a harmonious process. Since the hay decomposes and fertilizes the ground, the overall state of the earth is constantly improved; the process is endless as long as there is sunlight and plants that are able to photosynthesize.

Plants are really something wonderful; they use the solar energy, water and air to produce something that is determined by their genetics. It's also important to note that plants, through the use of their roots also draw minerals and nourishment if they can find them in the soil, if it is unavailable the plant will through use of sunlight and air synthesize everything that it needs for life. Obviously if she needs to use that energy for survival she won't be able to create a strong stem, thick roots or large fruit. In order for the plant to flourish we have to remove the focus from survival, and that is our primary goal as gardeners. Humus is the best source of nourishment for the plants, which is created by microorganisms dissolving biomass (other plants). Except ensuring that the soil is rich with required elements (which is done by covering the soil with hay), we must also ensure that there is enough space between plants so they don't have to fight with the competition (same as in human society). Once we leave enough space we must also remove the unwanted plants from the garden (weeds) using the hoe. These plants will use as a fertilizer and will protect the soil from drying out during summer; some of them have even known healing properties (chamomile, horsetail, nettle, yarrow, plantain, creeping twitch etc.) which can be used for such purposes if the soil is not polluted.

Our vegetables don't grown "on concrete" , most common point of curiosity of our neighbors, and an oasis for the creatures of land and air. We are created to live together for obvious reasons, when we realize this and stop looking at them as vermin, but as creatures fighting for their survival we may yet see the meadows and fields flourish, and the earth that feeds us stay alive. **Maybe it's not too late!**

GROWING VEGETABLES

You must prepare the garden in order to be able to plant seeds in the spring. Instead of deep plowing in fall, get an ample amount of hay and cover the garden with it like a blanket. When winter and frost comes little creatures that do not hibernate will hide in there, and will do some work for you before spring comes. They will dig through the earth in search for food, decompose the hay and turn it into humus which will feed the plants, and the top part of the hay will stay dry and whole, not only until summer, but much longer, protecting the soil from draught and overgrowth.

You will be surprised how loose and supple the earth is in spring, you no longer need a spade or mechanization to prepare it. Simply part the hay into rows where you will plant your seeds. If you have a sharp spade you can cut a line in the hay. When you do make a line, dig it lightly with a small hoe or make a ditch in which you will plant the seeds, then bury the seeds with earth and your job is done. The easiest way is to dig the earth, loosen it with the appropriate tool, plant the seeds in a line, then using the same tool mix the seeds into the earth. Seed is much smaller than the chunks of soil and will fall in easily so it is important not to dig too deep, ideally the seed will drop to the bottom and receive moisture from the deeper layers, and the loose earth will protect it from drying (by loosening you cut the little veins through which water can pass). Also you can press in seeds of onions or garlic into the loose earth.

For seedlings it is enough to just make a hole in the hay and dig enough earth to plant the seedling. Rest of the earth stays covered with hay. For potatoes, corn and beans we use a special tool made out of two spades. You can see the process of planting in the following pictures



PIC 2 Garden covered with hay in fall



PIC 3 Onion planted in rows



PIC 4 Tool for loosening the earth which is also useful for mixing the seeds with the soil



PIC 5 Different sizes of hoes. Big one (left) is used on larger surfaces where we didn't plant anything for cutting weeds, note that you are not supposed to turn over the earth, just cut the plant and leave the earth in the same position with the residual hay that is covering it. It is important to conserve the layer of hay as much as possible. The middle hoe is used to dig the earth during planting and hilling.

As with hilling again it is important to cut the grass leaving the earth and hay intact. The last hoe is used mostly for hilling around the smallest plants because it is very precise and light. All hoes should be sharpened.



PIC 6 Two types of spade. The left one is used to harvest roots and bulbs (carrot, parsley, potato, horseradish). The right one is used to plant and replant fruit saplings and grape vine or cutting through hay during sowing, it has to have a very sharp edge.



PIC 7 this is a special tool made by combining two spades. Used for planting potatoes, corn and beans, how it works is shown below.



PIC 8 power of thrust should be determined by the hardness of the ground and depth of planting the seed.



PIC 9 when the spades are inside the earth, move the handles toward each other to make a hole.



PIC 10 plant a seed (in this case potato) in the hole.



PIC 11 remove the spades. Use a small hoe and cover the seed with the earth leaving an opening in the hay through which the plant will grow. It is important that there are no big chunks of earth that would prevent the plant from growing upwards.



PIC 12 Springing of corn and beans.

Always plant more than one seed at once, if too many of them sprout out they can be easily removed. Hilling is performed twice: first when the plants are springing to protect those plants that are yet to spring out, as plants tend to grow quite unevenly. Because the earth is covered with hay, you should give some time for it to warm up, which will make the plants sprout later, but compared to uncovered gardens you will have less of a problem with loss of moisture. Second hilling is performed when we decide that next weekend we won't be able to do so, because doing so would damage the plants (an example of beans throwing vines to a plant in another row). This hilling should be performed at the last possible moment, because after it you won't be able to use the hoe, thing you might be able to do is to uproot some unruly plants that get in the way. The final spacing is done during the second hilling. On the next picture you can see beans and corn in the phase in which no further hilling can be done, next phase is harvest. It is important to note that if you have two different species of corn (like we do) you will want to space them far away from each other to avoid crossbreeding. If you plant on a single field you will not be able to avoid it, nor the risk of crossbreeding with your neighbor's corn either. That in mind, be careful which ones you will pick for next year's seed and select the best representatives for that purpose. Some plants are more vulnerable to crossbreeding than others, zucchinis are one of the most affected.



PIC 13 No more hilling here! Next step is harvest.



PIC 14 Springing of zucchinis. They are planted into “houses”, when they grow a bit stronger excess is removed so that only 3 or 4 remain in one “house”.



PIC 15 Springing of potatoes.

You can see very successful growth in rows, which isn't usual. We use two stakes planted at the start and end of the row to make holes and plant in a straight line, but even with that you can see irregular growth. Do not worry about it, it doesn't mean something is wrong. Main problem with the potatoes are insects. Rootworms enjoy eating them and it wouldn't be so bad if they didn't multiply very quickly. If they are not removed regularly they will destroy the leaves, good weather helps their reproduction so you should remove them not only on weekends but also during one week day.



PIC 16 Two kinds of potatoes, to the right is the early sort (which can already be taken out) and to the left is the "late" sort.

Potatoes have no problem with crossbreeding because we plant bulbs instead of seeds. Potato plants that are used today can't even produce a seed to be used for planting, the plant blooms, but the flower falls off. They say that potato commonly deviates and it is possible to get very versatile sorts. When potato was brought from America he found a very good reception in Ireland, for its good nutritional value. The famine started when an unknown disease attacked potatoes but luckily, the plant recuperated from it on its own in a couple of years. If you want to get a good amount of potatoes, get the seeds, because if you buy a bulb on the market you don't know what kind of qualities it has, which tend to be worse than the original that came from the seed. To avoid always buying potato seeds you can make a selection of the bulbs. During the harvest of potatoes, we choose the healthiest and of appropriate size for planting next year. Reason we do it while harvesting is a common mistake people make: they pick the biggest bulbs from the entire harvest, which usually come from weaker plants which produced fewer, but bigger bulbs. Selection of potatoes from rows isn't that easy, because in good rows the majority of potatoes are large, so it's hard to pick out the ones that are the right size for planting next year.



PIC 17 Taking out the potatoes



PIC 18 Peas

Peas doesn't have a self-supported stem, so we must compensate for it. On the picture you can see a string tied to stakes on the opposite sides of the row. As the peas grow, it requires additional strings at bigger heights. On the picture you can also see that with the peas there is also grass, we suggest you leave it alone because you may bring more harm than good. Peas have a very short vegetation period and are sown very early, so the weeds can't do much harm. Stem of peas is very sensitive especially on the place where it sprouts from the ground, so any rough work around that area is hazardous for the plant. For these reasons you should pick all of the peas in one harvest. You should evaluate the moment when most of the pods are ripe without the lower ones (which formed first) being too ripe. If the peas that we planted are satisfactory you can also leave some of them to mature fully and use them for seeds. Only thing to bear in mind is not to be late with the harvest because when the peas mature they open the pods and drop the seeds.



PIC 19 shallot

We plant the majority of red onion in early spring. Somewhere around that time we also plant peas and those are our first activities in the garden during springtime. White onion is planted in autumn after the garden has been covered with hay. We also plant a small amount of red onion that will come sooner and we will eat it while it's still young. Regarding red onion we only plant shallot. It has shown to be the best option because we don't have to worry about the little bulbs, you can separate the cluster of bulbs and plant each individually and it will form a new plant. The only drawback to this type of onion is that it's small, which would be justifiable if you would have to clean it in big amounts. Regardless, shallot is a well known medicinal herb and tastes very good.



PIC 20 shallot ready for harvest

One of the earlier activities in spring is planting the seeds into a plastic greenhouse to grow seedlings. On the spot where the seeds will be planted we remove the hay and loosen the earth taking care that it isn't dug too deeply so that the seeds can get the moisture from under them. The technique is the same as previously mentioned, with the exception that the seeds are planted in squares rather than rows. Supporting iron arches are put over the area and covered over with a nylon sheet secured to the ground with bricks. It would be wise to write down where you've planted what to avoid confusion.

When it's time to replant the seedlings we remove the hay and leave enough area to fit the plant into the ground, dig a hole, place the seedling, put the earth back and press it around the plant. Hay which was pushed back is now returned only leaving the seedling to sprout out of it, after this the plant has to be watered well and, if the weather is hot, again next day. When planting such small plants people often make the mistake of planting them too near each other, so always make sure that you leave enough space. When planting tomatoes we must first set the stakes that will support the plant. When spacing the stakes you will get a good feeling of how the plants will be spaced.

When of planting the multiple varieties of plants and we intend to take the seeds for next year, we have to make sure that we have enough space between different varieties of plants. We started with two varieties of tomatoes and two varieties of peppers. Very quickly we chose the better the variety of tomatoes and we use it to this very day. It is the sort with fruits in shape of hearts and for our needs it is the superior one. Regarding the peppers, something else happened. We planted two sorts of peppers, and between them we planted tomatoes. Over the years the difference between them grew smaller, and we accepted them as a single variety of peppers. We mixed the seeds taken from one variety with the ones taken from the other, those that gave the most and the biggest fruit were used as the seeds for the next year, no matter the shape of the fruit.



PIC 21 tomato that has successfully started to vegetate, soon to be tied to the stake with a string



PIC 22 Ripening of the tomatoes. You can see from the leaves under that it was struck with a sickness, but most of the fruit will ripen even without sprinkling. The situation is worse with

cucumbers; if they are not sprinkled they will quickly become diseased so aim to plant a lot and quickly harvest them for pickling. If you want fresh cucumbers you have to plant them multiple times, as soon as first fruits arrive leave a couple for seed. No need to worry about the number of fruits left for seed because when the first cucumber ripens it stops blooming and bringing new fruit, similar to zucchinis. Cucumbers should be picked green and regularly.



PIC 23 Peppers, they are resilient to plant diseases-



PIC 24 Ripening of the peppers. Since the start of the harvesting you should leave the best fruits to be fully ripe for seeds.



PIC 25 Harvesting peppers for preserving (winter stores).



PIC 26 Separated specimens for seeds.

When taking the seeds for peppers it is important to know if the fruit tastes hot. Peppers have a tendency to inherit the spiciness so if we are not careful, we might end up with hot peppers.



PIC 27 Late cabbages planted next to the tomatoes. Cabbage, kale, cauliflower, broccoli are best planted near tomatoes for its protection.

VINEYARD

Idea of covering the ground with hay to create humus and slow the growth of grass started in the vineyard. Vineyard is mowed several times in the season using a scythe and the cut grass is placed under the plant. Basic premise is the same as with the garden, we use the hay to convert it to humus and feed the grapes and to slow down the growth of grass. However the protection isn't perfect and grass will penetrate the layer of hay. One more important difference is that in the garden plants usually have shallow roots, which makes them sensitive to the surrounding plants, while grapes grow deep roots and have powerful vegetation. As a result they aren't bothered with grass and neither should you. After a year since you started putting hay under the grapes you will see that the earth is enriched with black bits of humus, its overall quality has improved. There is no need to intervene with any medication where it says on the label that it may be harmful for life. Things which you feed the plant will find their way to the fruit and any poison will in the end harm the person that consumes the grapes; pay attention how you treat your plants. Life under the earth will bloom during the season if the ground itself wasn't polluted with toxins, in which case it will take several years to clear out. In our case we needed 3 years for our garden to grow normal healthy fruit, after 6 years we expanded the garden to a part of a meadow and after a season the garden-meadow border has blurred out.



PIC 28 Vineyard during springtime, mowed once.



PIC 29 Freshly mowed vineyard in a later phase.

When we bought the vineyard it was a standard for the region: grapes planted near stakes and with 1 meter distance between rows. Here we are talking about a grapevine that lives on its own root, as a whole plant. Our vineyard contains 6 sorts of **grapevines which do not require any sprinkling via protective chemicals or cures**. We used to sprinkle our grapevines with copper based products because at the time it was considered common sense and also to prevent this particular species of grapevine berries to fall off on their own when ripe (which is in convenient during harvest). However after we stopped using copper based products the situation with the berries didn't get any worse at all. The decision to stop sprinkling came together with the decision not to grow any noble sort of grapevine (which would require additional protection), we wanted sorts of grapevine which were resilient enough not to need chemicals. We tested them by taking several branches of grapevine in spring and we put them in a "school": they were planted diagonally into the ground so that 1 or 2 pulps stick out of the ground with 3 under the ground. Care was taken that they are watered during dry periods and kept clear of grass. If everything goes well at least half of the branches will sprout and survive, they are best left for one more year to grow stronger and then they are replanted into the vineyard.



PIC 30 Grapevine in a school



PIC 31 Grapevine which was put to school last year



PIC 32 one of the French sorts, recognizable by the leaf



PIC 33 a sort of French grapevine that grows grapes one month earlier than the others and still holds them by the time for regular harvest

Since we've had the vineyard there were two attempts at mechanizing the process of mowing to reduce the time it takes. We tried using a rotary mower attached to a walking tractor. Rows could be done two at the time, one in each direction, which was over quickly, and all it was left to do was to cut the bits between the grapevines. However, the leftover grass was completely destroyed and couldn't be used to create humus or cover the ground. Also this kind of a mower cannot cut tall grass so it had to be done frequently. We tried using a different type of a mower which worked like a line of clipping shears, to avoid destroying the grass; it ended up complicating things even more and the time saved was negligible. After this we decided to grow grapes and vegetables for our own use, completely abandon mechanization and chemicals which only complicated the process.

The practice of mowing by hand (using a scythe) is virtually non-existent today, not only because people don't want to bother with it, but also because not a lot of people know how to prepare the scythe properly for mowing. Even when there weren't any trimmers or motorized mowers people didn't know how to sharpen or secure the scythe to the haft; Instead people opted to buy standard issue lawn mowers. With these growing in popularity the hills have become very noisy places, driving away animal life and tranquility of nature which many people seek to rest from the stressful (and noisy) city life. For true nature lovers and recreational enthusiasts, we have a couple of suggestions on how to gain the mastery of the scythe.



PIC 34 two scythes of different lengths

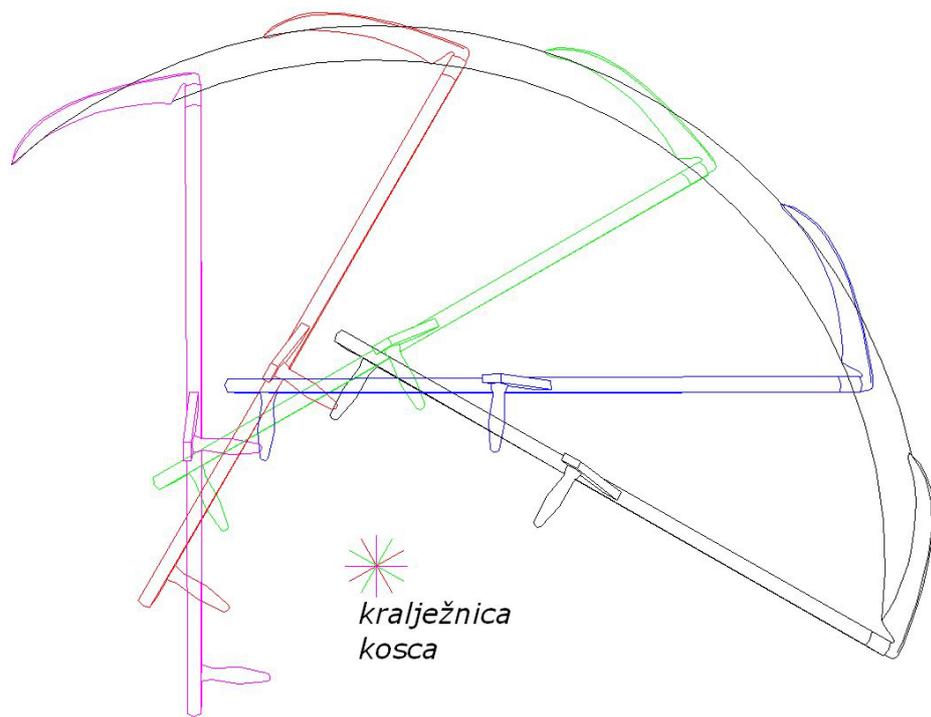
The shorter scythe on the picture is used to mow the vineyard. The length of the blade shouldn't exceed 0.5 meters (about 20 inches) due to lack of space. In our vineyard the space between rows is 2 meters (6.5 feet) so it can be easily mowed even with smaller scythes. Important to note is also the scythe haft, it is important that you can comfortably swing the scythe while

standing perfectly upright. When you are buying a snath you have to make sure that the tip is almost on the ground while you stand straight, bending down will only cause you back pain. Most snathes don't fit this criterion perfectly so there might be some need to correct the blade angle by heating it and bending into the right direction (this should be done when it is NOT mounted onto the haft). If it doesn't fit after the first try, you can always do it again, however do not cool the blade with water, which will cause the blade to crack and shatter. After heating and shaping the blade should be left alone to cool slowly. High amount of carbon in the blade makes it tougher when it is sharpened in a process called peening.



PIC 35 a scythe blade mounted on a snath. The text reads: here you will heat the iron until it glows red and shape it until it fits on the snath.

Next images show how mowing should be performed and the relative position of the blade and the snath during a swing.

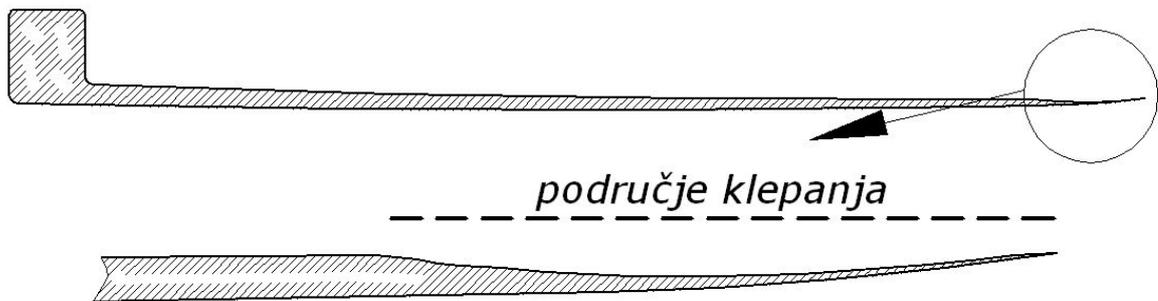


PIC 36 This kind of swing should be performed with your back straight and outstretched hands. Arms move together with the body without any forceful movement.



PIC 37

The picture shows how the blade should lay on the ground. The tip should be pointing slightly upwards so that it doesn't dig into the ground. The scythe must glide over the ground like a ski in both directions (left to cut, and right to return). Next picture shows how a blade should look after peening.

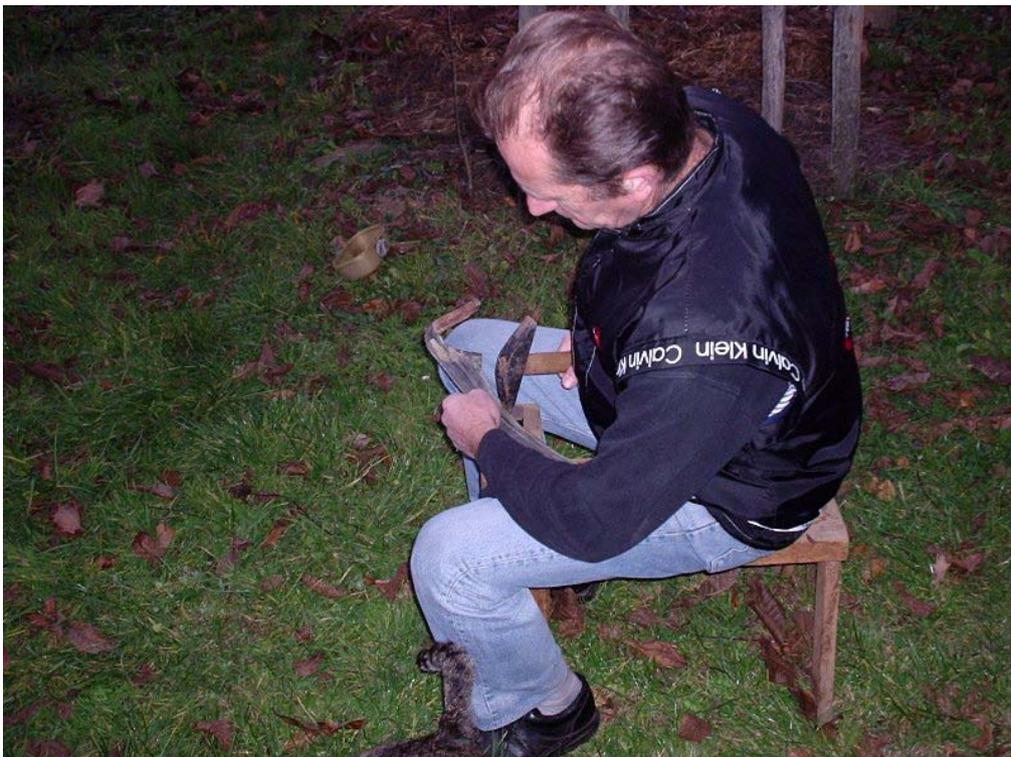


PIC 38 Area of peening.

Here is a side cut-out view of the scythe blade and zoomed in view of the cutting edge itself. The blade is slightly raised and it gives it good gliding properties, so that it doesn't scrape on the surface and prematurely dull the blade and lose strength. The shape of a raised blade isn't achieved by some special procedure, but as a side-effect of peening, sometimes even being raised too much if you are not careful. The process of peening consists of lightly hitting the cutting edge using a die-forged peening hammer while the scythe is laid on a special peening anvil, thus making the cutting edge razor-thin.



PIC 39 Peening hammer and anvil



PIC 40 Peening being performed outside

For those who didn't yet handle the skill of peening, this would be the majority of the readers, I suggest to start with peening of hoes and spades because they are thick and hard enough not to be easily deformed. If you start with the scythe there is a real danger of it looking like a

sinusoid (wavy). The advice about peening the hoes and spades isn't just for practice, because they should be peened (hardened and sharpened), as mentioned at the start of this text. When you get the feeling of where to hit and how hard to strike there shouldn't be any more problems. Don't try to do everything in one go, it is best if the thinning of the blade is stretched across multiple run-throughs because that will cause less deformation. Small amount of waviness may occur but that shouldn't be a concern. As the blade is used so will the inner tensions in the steel decrease and with it the waviness. Mowing and grinding with a whetstone will straighten it (if you don't overdo it). After peening we grind the cutting edge.



PIC 41 Grinding with a whetstone

If you look at the picture closely everything will be clear, but for the beginners I will mention a couple of details. The whetstone is held very near the end so that when we pull it across the blade more than a half of its surface is used, alternate pulling it across the front and the back of the cutting edge. Ideally two thirds of the whetstone should touch the blade while pulling it across. Like this the whetstone will retain its shape and usefulness until it is completely spent, if you only use the tip while grinding it will be spent quickly while the middle will still remain thick and as such could damage the cutting edge (this is a very common mistake). Another common mistake is being too forceful while grinding, though with a proper grip it is almost impossible to do so. One more important element is to leave the whetstone in a cup filled with water which you fasten to your belt.

All of this might appear complicated and you might be losing enthusiasm, thinking that some motorized lawnmower might be better than a scythe with its "sophisticated" technology. Don't let it stop you and never mind the neighbors commenting on your unskilled scythe use, they would probably be as bad themselves. If the scythe is mounted right and well peened and grinded anyone can use it; most of the time people don't prepare the scythe properly and compensate by changing

their posture and then get injured. **Always adapt the scythe to yourself, never yourself to the scythe.** Every scythe is unique in some way, there are no two alike, because everyone adapted it to their own hands and if someone else would use it the effect would be different. Best not to borrow the scythe of one of your neighbors, even if he does lend one to you he is not happy about it. An old saying confirms this situation: "You never borrow three things: your spouse, your bicycle or your scythe." Bicycle you might borrow, but never the scythe.

ORCHARD

Orchard is on the third place in our nature adventures mostly for the reason that it's the least demanding. When we started with planting the orchard we knew nothing about the plants, and we would say that it is still our weakest field because there is really a lot to learn. We set for ourselves certain demands and it turned out that we were right. Since the first moment we decided that will plant the trees which are low maintenance and self-sufficient; to this day our job in the orchard consists of trimming the branches in spring, mowing twice a year and of course the harvest which occurs during the whole year, from early cherries to medlars which are harvested after the first frost in autumn. We mow the orchard twice to let the grass grow and mature before its cut down because we benefit more from matured plants instead of ones that are still green and full of moisture, thus harder to dry into hay.

Mowing in the orchard is performed with the longer scythe. With "length" we mean the length of the blade, not the snath, and it is usually marked on the spot where it is fastened to the snath. No need to overdo the length, 600mm (about 2 feet). The longest scythes were used on large meadows and fields which were very wet during spring and void of mole hills or similar bumps. Our orchard is on a steep slope with a lot of trees and mole hills, so we use a relatively short scythe.

We will stop talking about mowing now and focus more on trimming the orchard in spring; it is almost the same as with the vineyard, and we use standard techniques. If you are interested in more information about growing grapevine on a stake, you can inquire for more information.

First thing on the agenda is planting the trees in the orchard. We decided on planting 7 meters apart (23 feet) for large trees, and less for bushes. We didn't plant all of the trees with a certain plan, and we plant them to this very day. If we come across an interesting sort we try to graft it on a plant that we grew from seed and replant it to a vacant spot in the orchard. It is important to also put a stake next to the plant so that you can find it after the grass grows too tall. Young trees should have ground around them maintained and cleared until they grow strong enough not to be bothered by grass. We tried putting hay under the trees but it resulted in voles turning the plant over, however this never happened in the vineyard, maybe because they dislike eating grapevine roots.

We couldn't get a hold of seedlings for the sorts we wanted (those not requiring sprinkling). To get the sorts that we wanted we were forced to plant seeds and then graft the wanted sort onto the root. It is not as complicated as it may seem, the question is if you mind waiting a bit to get the fruit. If you want to get the fruit quickly you can buy the seedlings from the market, these plants are not as sensitive as grapevine and can survive certain amount of neglect. You won't get the spotless fruit like in the supermarket, but at least you will know what you're eating. We would like to share

with you an anecdote from when we first started working on the orchard and it's about early cherries (standard sort with the seedling bought from the market). The tree was about to have its first fruit. Think about it, the first fruit on the earliest fruit tree. However as we were observing it we noticed that it had a large amount of louse. We feared for our young fruit tree and we decided to sprinkle it with a pesticide. In a couple of days the first cherries ripened but we didn't dare eat them because we recently sprinkled it. We couldn't eat the fruit but we were glad that at least we protected the tree from pests. Soon came the next spring, and with it the louse. We sprinkled it again with pesticide and didn't eat the fruit. Third spring came around and we had enough of this game, this year we didn't use pesticides. Sure there was a large amount of louse on the tree, but it didn't bother it much, and we could pick the fruit. Next year there were a lot less louse, but a lot more ladybugs. Today we ignore the louse and they only appear in small numbers.

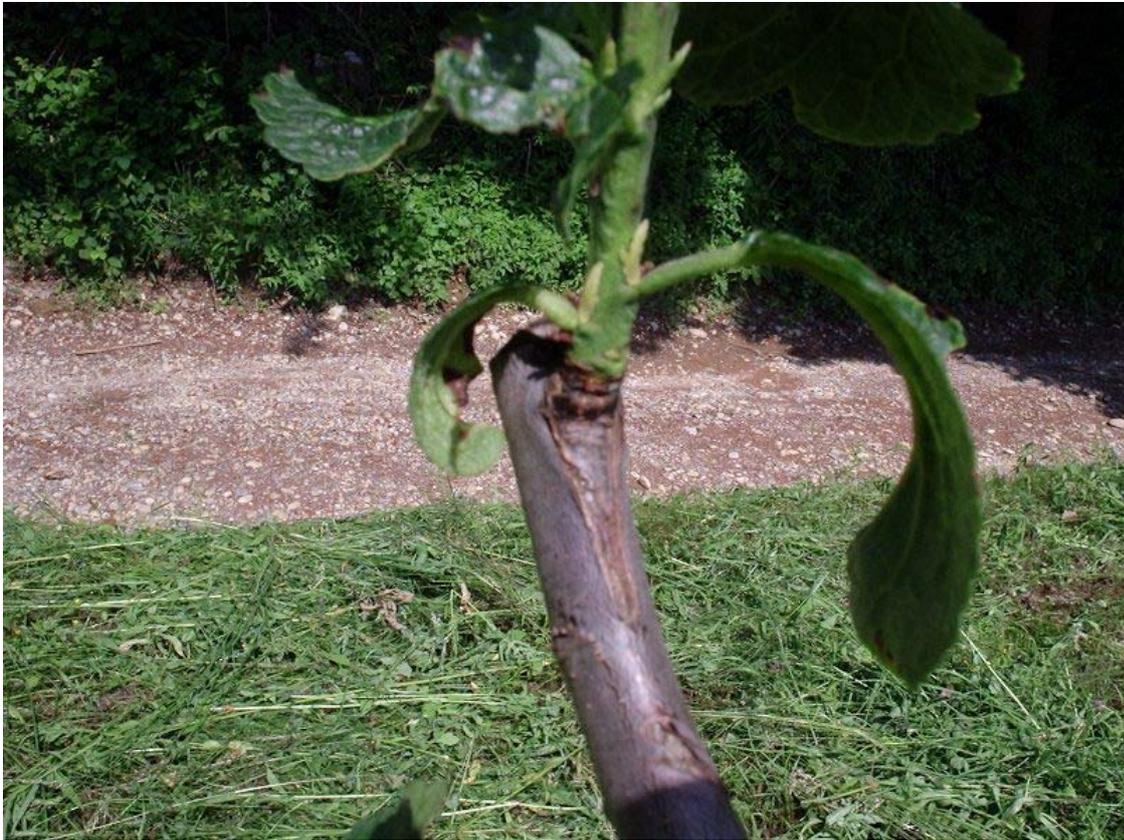
Let's return to growing young fruit trees and grafting with a couple of pictures. Regarding the grafting process we had a lot of success with the method of "splitting" the branches of equal thickness and "under the bark" for branches of different thickness.



PIC 42 Grafting of the pear – you can put multiple sorts to grow on a single base, base grew out the pear seed.



PIC 43 Successful "splitting" grafts



PIC 44 Grafted plums, you can see the healing marks around the inserted pulp

First order of business after planting the seedling is to form the treetop. From the start you have to have a vision of how the treetop will look when the tree gains its full size and work towards that shape. Fruit trees differ from one another in which places they sprout flowers and fruit (which branches and which pulps) and it is a too wide of a subject to write about. You will see it very quickly on your fruit trees, so in time when it blooms and grows leaves you must walk often through the orchard and observe what is happening. Here we can speak only about shaping the treetop, from planting the seedling onwards. The fruit tree must have a sturdy and well ventilated treetop from the very start. You shouldn't have to put supports under branches to stop them from breaking under the weight of the fruit. Young fruit trees usually have very strong vegetation so the long branches should be shortened to only a couple of pulps. All fruit trees push the hardest on the ends of the branches because in nature only the tallest plants survive. Like this it takes advantage of branches that grew last year and grows new branches out of the last 2 or 3 pulps. We shouldn't allow this by cutting those branches down. We must also eliminate some branches entirely so that the treetop isn't too dense causing some branches to never get any light. While the fruit tree is still young and you cannot climb on it no branch should be out of your reach, so keep it trimmed. This method will result in a sturdy tree which you can climb on to. In this phase the maximum length of a branch is the one which you can reach with the scissors from a stable point on the tree. Over time the tree will expand because more branches will be sturdy enough to hold your weight, so you can let some branches grow longer. This method guarantees that the inside of the treetop isn't too dense because you have to be able to move through it. For all this to function you have to also let some branches grow so that you can use them to climb the tree and enter the treetop, however these branches shouldn't be too long because they will interfere with mowing. This kind of shaping also ensures that you can always reach the fruit in time for harvest. If you compare our cherry to the neighbors you will see that ours gives less fruit, but all of it can be gathered. One other reason why our trees have smaller treetops and a large distance between one another is not to block the growth of grass under the trees by denying them light. In this way we don't need a special meadow to make hay, we can use the grass from the orchard. Don't be afraid to cut the thin branches on fruit trees, if you cut too many by accident more will grow next year. If you don't cut the branch while it's thin you will have to when it gets thicker, and the tree can never fully heal from losing a thick branch. By letting it grow you will do more harm than good to the plant.

What to do with the cut branches from the orchard and vineyard? If possible don't burn them; doing so will create more CO₂ to pollute the air. If there is a forest nearby leave it there out of the way so it can decompose. I mentioned the branches from the vineyard; these are from spring trimming and are green so they decompose very slowly, much like the young branches of fruit trees. In the vineyard there is also summer trimming where only the tips of vegetative branches are cut, these are put under the grapevine and they decompose quickly, within the season.

PARTING WORDS

That would be all. Last summer we had the idea to tell our story and provide a few pictures in case someone was interested. In these winter days when there is nothing to do in the field we put it down to paper, in one breath, without editing much. We tried to write down all the details where our approach differs from the standard. We are sure that there is someone else who functions in similar ways, but regrettably we haven't met anyone like that yet. Maybe this way we just might. We might appear like the fabled man who fought windmills, but we have no intention of fighting anyone or anything. We intend not to fight at all. We go our own way, and you do as you please.

Bjelovar, January 2007.

Dajčbar Zdravko and Renata