GUIDEBOOK

ON COMPOSTING

CONTENT

INTRODUCTION

Written by volunteer of Ecological Association “Krka” Knin Snježana Kukolj

"Look at the sky and you will see stars but also planets - and billions of them. At least! This is the conclusion of the latest study of the world's famous astronomers, which they came to by analyzing the planets around the star Kelper-32. If we think about it, that number is incredible. All in all, a planet comes to every star."

It would be better if we think about the fact that the World is the only planet where we live. It seams it will remain like this for many years ahead into very far future. From current perspective it will be the only livable place for the generations that will come after us. Of cause if we succeed to save it and have something for them to inherit. Let’s remember that we are nothing but one of the alive beings inhabiting the World. Whatever is alive here does not live just for itself but in cohabitation with the others. Since the beginnings and appearance of the life on the earth, all of us without exception, stay stick to naturally created rules in the struggle for survival and existence. Only human kind thanks to extraordinary power, brutally distracts natural balance, without consideration about consequences. Only human kind has abandoned the right way with the greed and arrogance threatens to destroy, not just the world but all the other organisms inhabiting it. We are witnessing more often ecological catastrophes and the scientists say there will be more of them. All the time from close proximity we are watching the images of devastating scenes with tragic results for the humanity. The science observes carefully gradual or sudden changes in our environment and sends the warnings to us. However, they cannot solve that problem.

Climate changes, accelerated developments, industrial and technological progress, insatiable hunger for profit, unlimited corporative power, global warming, are some of the reasons threatening with destruction of the planet and disappearance of the current civilization. Devastation of the environment, pollution of the air, devastation of the woods and fertile land, pollution of the water surfaces, drying of the lakes and swamps, diversion of the rivers flow, hunting and unnecessary killing the animals, disappearance of the animal and plants species and obliteration of their natural habitats….. These are all ethical Codexis which are burdening modern civilization. However, this terminology become somehow shabby and accepted as self-understood by many. Scarce number of people turn their points of view into the action. Insignificant number of people are ready to get actively involved in some project or to get out to the streets against very bad decision makings and laws. But they concern us all. Worldwide Green associations are leaders in such events, as well as movements for preservation of the nature or civil initiatives, lead by brave and hard-working activists and volunteers. The others (passive majority) remain at home seating in front of TV, listening to the news, they helplessly shake their heads and shrug their shoulders. I agree that not everybody can leave their lives due to objective reasons, and join some action of the “greens” at some remote point of the planet, or replay to some global initiative. The times are changing and people’s power is growing. There are many things we can do. The number of ecologically aware people is growing from day to day. There are more and more groups as well as the individuals ready for the action for the wellbeing of the humanity. It is the same with those who take care of the environment. Glimpse of some new world are indicative. Think globally-act locally is more then possible.
We have to turn around and learn to imagine and create some nicer world. Start with yourself and see what can you do. Change common comprehension and get rid of bed habits. Start with your own garden. If you continue dirtying your own bed once you will awake in stink. Usually the simplest solutions are the best solutions. Start as of today…

- Stop dangerous trend and decrease the amount of waste you throw away
- Save energy
- Do not throw the food
- Separate the waste and earn this way

- Start using linen bags instead of plastic ones
- Walk or use a bike; you will be healthier
- Whenever possible use public transport instead of your car
- Join cleaning actions
- Report wild landfills and irresponsible individuals to the relevant institutions
- Participate in public discussions in field of protection of the nature
- Use alternative sources of energy if possible
- Become active member/volunteer of some civil organization or green association
- Plant a garden if you have a piece of land
- Avoid GMO products and fast food restaurants
- Teach your children to take care of nature and environment since their childhood
- Get informed; knowledge is power

Let's join and sent common appeal to our governments in order to make them bring out better and more human Laws on the protection of the environment. Request relevant ministries to include these laws into the practice as soon as possible in the best manner. Put the pressure to the city and local authorities to start implement this as soon as possible.

Submit the request to utility organizations (at the area where you live) to open recycling yards and green islands in order to create suitable conditions for separation, collection and care of waste. Put the pressure to local authorities to prevent unprofessional interventions into the environment and to punish all those who consciously degrade, pollute and destroy the environment. Our basic human law is to have clean air, drinkable water, organic food and healthy living space. If we use natural resources reasonably, if we use cleverly available potentials and turn to reusable sources on time, Mother Nature will know how to pay back and return it multiply. "The earth does not belong to humans but humans belong to the Earth". (these are the words of the wise Indian chief) that I fully agree with. We have to understand finally that natural resources are not unlimited. When we spent them they do not exist anymore. We have to understand that the earth has to save, at least something, of it's own natural wealth, keep the existing energy and needed power which it needs to live and exist. Do not take those rights unnecessary as survival of all living beings, including us, inhabiting it depend on it's life. Our way of thinking demands the change if we want to have harmonious coexistence with the Earth. It depends only on us when the world will become cleaner, healthier and more human place for the life.

It is the last moment to try save what we still can save. The time is running out… it is 5 to 12 for the savage of the Earth.

Therefore….. become wiser…..become earthy!

ABOUT ECOLOGICAL ASSOCIATION “KRKA” KNIN

Motto: Nema frke dok je Krke! *(No fuss while Krka runs!)*
Link to Web site: https://www.eu-krka-knin.hr/

Ecological Association „Krka“ Knin was established in 2004 in Knin. It has 90 members and 30 active volunteers. Some of the members are long-term employees of the civil sector. Members of the coordination of Green Forum provide expert support to the projects.
In accordance with our aims the main areas of the activities are protection of the environment and nature, democratic political culture, economy, culture and arts, human rights, international cooperation, education and science, researching, sustainable development, social activities and health protection.
In 2014 „Krka“ Knin got the price of the town of Knin for successful work and contribution to the conservation of the environment and the price of the National foundation for development of civil society for the civil innovation of the year (Eco-toy library). We got another price from Ministry for the protection of the environment for Eco-toy library in 2016. During 2017 we got the price from Šibenik-Knin County for improvement of the life quality and sustainable development of the citizens of Šibenik-Knin County.
The association operates in several locations in Šibenik - Knin County. In Knin, at two locations - at the address of the headquarters, where there is also an eco-toy library, and in the area of the Ecological Information Center, next to the Krka River. In Šibenik, "Krka" Knin operates in the "Orange Building", while in the Promina municipality, it operates in the premises of the Promina Community Center in Lukar, which it also manages.

Association "Krka" Knin is a beneficiary of institutional support approved by the National Foundation for the Development of Civil Society and is a member of the Green Telephone Network of the Republic of Croatia and the Green Forum.

For the sake of self-financing and sustainability, the association "Krka" Knin founded the social enterprise Marunuša j.d.o.o.

Association "Krka" Knin temporarily employed 60 people through professional training and public works (HZZO -*Croatian Employment Institution*- programs) during last 5 years.

The association also implements Erasmus programs through which young people from various EU countries have been volunteering for 8 months within 3 years.

Preservation and protection of nature and the environment

Through its work so far, the association "Krka" Knin has so far realized about a hundred projects, independently or in partnership, many of which were financed with EU funds.

They would highlight several significant successes that are the result of the implementation of the projects:
• Initiated waste separation in Knin through the Green Islands of Knin project;
• Numerous eco-houses set up for the free exchange of books and toys in the area of Šibenik-Knin County;
• An underwater camera was installed in the Krk River for monitoring the state of the river;
• 5 public drinking water taps were installed on public areas in the city of Knin with funds provided by the association through a donation from the business sector.

As the most successful project important for the protection of the environment and the process of re-use, we would highlight the Eco Toy Library project, which was opened in Knin in February 2014 and is the first such library in the Republic of Croatia. It functions on the principle of free membership, and a total of 7 libraries have been opened so far. In addition to Knin and the municipality of Promina ("Krka" Knin), the Eco toy library

is open in Šibenik ("Krka" Knin), Karlovac (Eko Pan association), Zagreb (Zeleni dan association), Vela Luka (Novi otok association), Sesvetski Kraljevac (Association Java and the Educational and Entertainment Center of the Workshop of Happiness).

Strengthening social services and contributing to the reduction of social exclusion

For many years, the association has been implementing projects from the "Zaželi" program aimed at providing services and assistance to the elderly.

In order to encourage and educate young people as much as possible, the association implements numerous projects intended for young people, as part of which we organize workshops, seminars and lectures to strengthen the capacities of young people.

We provide help and support to the unemployed and other people at risk of social exclusion and poverty through the implementation of projects intended for marginalized groups and through the employment of members of marginalized groups in society through projects and measures of the CES, such as "Public Work".

Strengthening volunteerism

The association continuously promotes the importance of volunteerism, and in 2022, 24 people volunteered in the association with 4134 hours worked.

For many years, projects have been implemented within the framework of the European Solidarity Forces program through which young volunteers from various EU countries are involved in long-term volunteering, and they carry out activities to strengthen the local community and at the same time acquire appropriate competencies for personal development.

Projects, actions and campaigns

In addition to the implementation of projects, the association organizes numerous actions and campaigns important for the protection of the environment and nature and community development.

At the very beginning of the association's activities, the “Nema frke dok Krke” *(No fuss while Krka runs!)* project was launched, a project to clean the Krka river, which is continuously held every year on a smaller or larger scale, and on the project of the same name, marginalized groups are employed through the "Public Work" program.

In addition, about 30 illegal waste dumps were cleaned through volunteer cleaning actions, numerous flower and tree planting actions were held, children's playgrounds were arranged in the area of the city of Knin, numerous object exchange fairs were organized, etc.

Many initiatives harmful to the environment were started and stopped with expert arguments and successful campaigns; We have had enough of mines for water, we are out of the spin - the destruction of mines on Dinara has been stopped; Krčić is ours - the construction of HPP the hydro power plant at Krčić; Varaždin Waste; Medical waste; Waste incinerator in Knin, etc.

The results of the association so far:

1. Initiated waste separation in Knin through the Green Islands of Knin project;
2. Launched operation of the Green Phone (072 123456) for the entire Šibenik-Knin County;
3. About 30 illegal waste dumps were cleaned by volunteer cleaning actions and numerous cleaning actions were held;
4. Ecological-informative center was opened;
5. Numerous ecological workshops were held for kindergarten/school children as well as for the citizens of Knin and surrounding areas;
6. 15 actions of trees and flowers planting were held;
7. Composting initiated through project Fund for the protection of the environment of the EU;
8. Children playgrounds in front of kindergarten "Cvrčak" and next to Krka river are maintained;
9. 13 Festivals of rural culture were organized in Knin with the aim to promote natural and cultural values of the area of Knin;
10. The first Fair of used children equipment in Knin was organized;
11. First Eco Toy Library in Croatia was opened and the first containers for the collection of used toys were installed in Croatia; Fair of recycled products for children took place. In 2017 we have opened Eco Toy Library in Šibenik and in 2020 in Promina;
12. Successfully implemented numerous projects that contribute to the purpose of establishing associations;
13. Launched the project "Nema freka dok je Krke" *(No fuss while Krka runs!*, a project to clean up the Krka river;
14. About 100 people were employed through the association during 19 years;
15. We are one of the initiators of the establishment of the Council of Associations of the City of Knin and the Council for the Environment of Šibenik-Knin County;
16. "Eco baby" - distribution of tree seedlings to every born baby;
17. In Knin, two info kiosks were installed and the Krčić trail was arranged through the partnership project "Nature of Dalmatia";
18. Organized and conducted numerous Green trips through which more than 400 children from various parts of the country visited us;
19. Through the project "Medicinal herbs for a healthier future" in partnership with the Lovre Monti high school, numerous workshops were held for students on the topic of herbs, and equipment for drying herbs was acquired, which the students still use today;
20. Through the project "SMALL" steps to sustainable development in cooperation with Home Appreciation Primary School, each classroom was equipped with containers for separating waste, the school got a green island, and students of grades 1-4 participated in workshops on the topic of waste management;
21. Eco-info tree house furnished and decorated by children using recycling techniques (the house is located near the eco-info center);
22. Eco book houses installed in Knin, Kistanje, Drniš, Šibenik and Split;
23. Eco houses set up in front of kindergartens in Knin for the free exchange of toys;
23. Launched the Druškanići project, which includes a Facebook page for the free exchange of things;
24. Many projects were implemented or still are in implementation financed by EU fonds (Ecological informative Center, NeetWork, Megafon, Social center Promina, Help today for better tomorrow l and ll, Use the opportunity, Knowledge for sustainable Action, Learn today for better tomorrow, JEDRO, Knowledge to employment, Citizens society, Nature of Dalmatia, Together for nature and environment, etc.);
25. Three years in the row we deliver eco bin pots for separation of the small waste at the beaches in Šibenik-Knin County;
26. An underwater camera was installed in the Krka River to monitor the condition of the river;
27. Four Seed exchange fairs were held;
28. Installed 5 public taps of drinking water on public areas in the city of Knin with funds provided by the association through a donation from the business sector;
29. Social Centre Promina was opened and "Club of small readers" established in the Municipality of Promina, with the funds Of Ministry of culture;
30. Class room at the open area in front of primary school "Domovinske zahvalnosti" in Knin was constructed;
31. A greenhouse was acquired for the purpose of maintaining the practice of Marko Marulić Polytechnic

students in Knin;
32. A two-year program was launched and the Krka Volunteer Center was opened;
33. Implemented or still are in implementation a number of projects financed by the funds of the national bodies aimed to protect the environment, youth and children as well as to protection of the life quality;

The association implements the projects on its own, independently, but in the most of the cases in partnership with NGOs, public institutions, local self-government units, etc.

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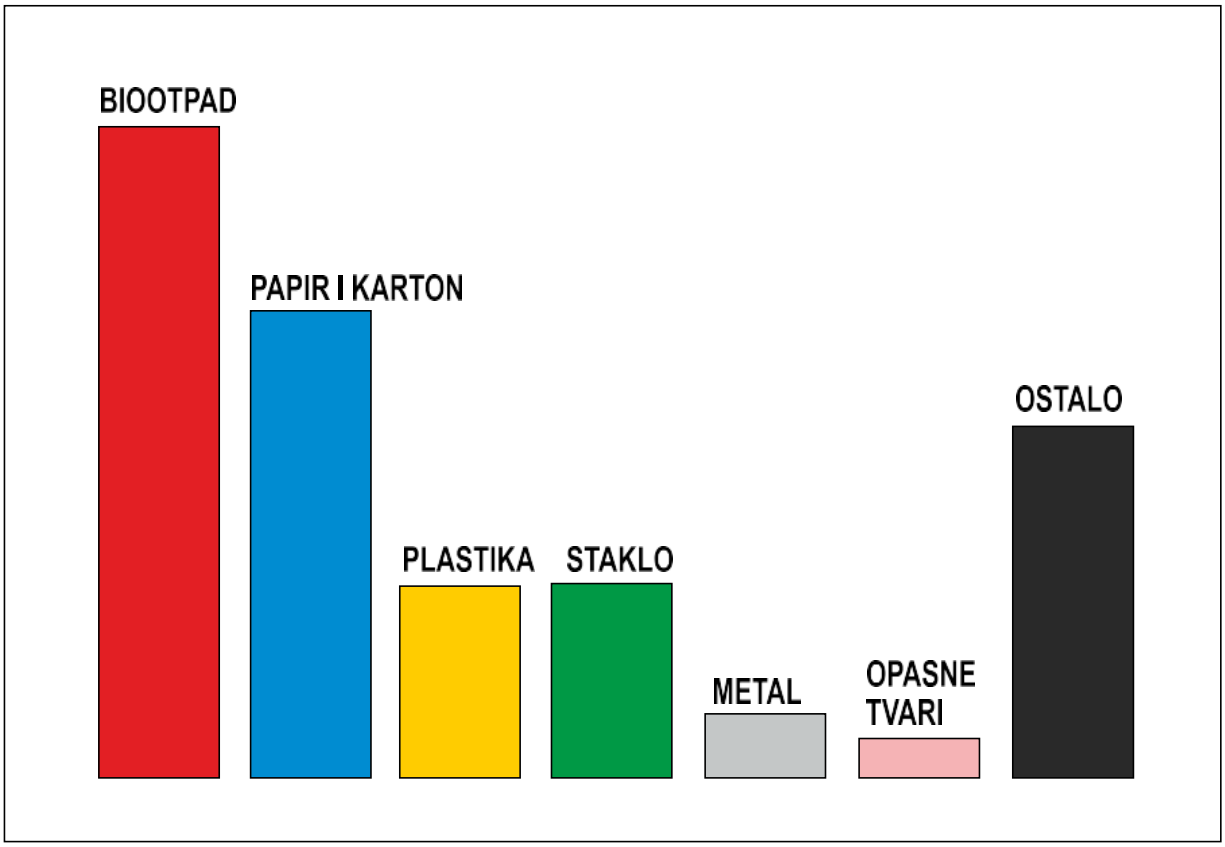
Inga Kukolj

ABOUT THE WASTE

WE ARE ALL PRODUCING THE WASTE

According to statistical data, each inhabitant of Croatia produces around 270 kg of waste per year, so the problem of waste is one of the central problems of environmental protection. Uncontrolled dumping of waste into nature endangers human health and pollutes water sources. It is also very harmful to burn since then - weeds, grass, plastic, electric wires. Burying is an unacceptable and dangerous solution.

Approximately one third of household waste is biological organic waste such as grass, leaves, flowers, remains of vegetables and fruits, etc. One quarter is made up of paper and cardboard, glass about 8% and plastic the same amount, and the share of metal is 2%.



ABOUT COMPOSTING IN GENERAL

Professor Zelenić's small school of composting

- Composting is a natural process of decomposing biomaterial which happens all around us. By composting we are decreasing quantity of the waste meant for transportation and disposal. This way we return nutrients to the land where from they originated, where they will gradually turn to humus – fertile land.

- Quality compost feeds the plants, secures ventilation, keeps the water, creates the life conditions for the organisms in the earth, helps growing of plants.

- Composting is possible in our own gardens or yards (independently), at suitable locations in the settlements (joint composting) and at large composting sites (centralized) given that the biowaste is separately collected and transported to the composting site.

- Composting site should be situated at the half-shadowed part of the garden, the best under a big tree, as the treetop will protect the compost from drying at the hot times as well as from to much water at the rain season. If you do not have such spot in your garden, you can cover compost pile by textile which is airy but prevents the water. At the place you have chosen for compost site should not collect the water and should be sloppy.

- Compost is an organic-humus fertilizer that is created when organic waste is changed and decomposed by the activity of microorganisms (bacteria, fungi, actinomycetes) and tiny animals (insects, worms) in the air and with sufficient humidity changes and decompose.

- The whole process of changing and breaking down is called putrefaction. An important product is humus.

- Humus is important for the composition and improvement of soil fertility. Compost is the best humus that we know and composting is the best process for obtaining humus.

The nature does not recognize the waste. Any material of alive nature is a part of small or global circular flow. Large number of small animals and microorganisms is taking care of transformation dead organic materials into humus. Such waste is the only source of food for such small "decomposers". Humus is the condition for fertile land and healthy plants. Taking careful and well-structured procedure all organic waste from the household, kitchen and garden can be composted. This concerns the lemon, banana and the other exotic fruits peel, food remains, weeds and remains of the dead plants.

Circular flow of biowaste

DECENTRALIZED KOMPOSTING

WHY TO COMPOST?

- More than a third of the waste produced at the household is organic or biowaste.
- Collected plants remains are not the waste but highly quality row material for compost production.
- By composting we establish natural circular flow in the nature.
- We give the earth nutrients needed for the growth and development of the plants and keep and improve fertility of the land. If we use the compost we are decreasing the need for fertilizers.
- By composting, we reduce the amount of garbage that goes to the landfill. By composting, we save money for buying artificial fertilizer or soil for flowers. By composting, we make our contribution to environmental protection.

WHAT TO COMPOST?

All vegetable waste from the kitchen, garden, orchard and lawn can be composted. We will get quality compost if we mix as much different and shredded plant material as possible.

So, all organic materials can be composted. Mass which is soft, wet and reach with the nutrients should be mixed with the mass power in nutrients in proportion 1:1. Actually composted materials are evaluated on the bases of the composition of the nutrients, structure and wetness.

WHAT TO COMPOST AND WHAT NOT TO COMPOST?

- Fruit and vegetables remains
- Coffee and tea grounds
- Fruit and vegetables peel
- Rotten fruits
- Plants
- Remains of the garden plants
- Weeds
- Dead flowers
- Mowed grass
- Foliage
- Branches
- Straw
- Shavings
- Sawdust
- Nut shells
- Egg shells
- Hay

BIOWASTE WHICH IS NOT SUITABLE FOR COMPOSTING

- Newspaper and colored magazines
- Plastic, metal, glass
- Medicaments
- Vacuum cleaner bags
- Paper diapers
- Coal ashes
- Dogs and cats' feces
- Bones, meat, fat, meat dishes and fish
- Seeded weed
- Very ill plants
- Hazelnut foliage
- Painted or lacked wood
- Biowaste which was in touch with the oil, petrol, oil and protective colors and pesticides

NUTRIENTS

Green, juicy, soft waste, as well as fertilizer, are rich in nitrogen usually decompose quickly.
This mass quickly loses its volume and turns into an oxygen-poor mass (microorganisms that are committed to rotting, which is not the goal of composting). Nutrients are important as microorganisms digest them easily, they are necessary for propagation. Mass reach with these nutrients has to be mixed with structural mass as soon as possible in order to prevent rotting and unpleasant smells.

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- Coffee and tea grounds
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- Remains of the garden plants
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- Dead flowers
- Mowed grass

ROW MATERIALS POOR IN NUTRIENT

- Foliage
- Branches
- Straw
- Shavings
- Sawdust
- Nut shells
- Egg shells
- Hay

ANIMALS IN THE COMPOST

In addition to many fungi and bacteria, there are also many animals that are active in composting. Some of them are:

- A roller worms
- Compost mushroom
- Echeveria
- Centipede
- Woodlouse
- Spider
- False scorpion
- Tick
- Turtle tick
- Jumper
- Leafhopper
- Insects
- Louse

COMPOSTING PROCESS

HOW TO COMPOST?

1. chop to the length of a thumb
2. mix soft, wet kitchen waste with dry, woody waste from the garden, grass, leaves
3. keep moist (like a squeezed sponge)
4. protect from the sun and precipitation, turn occasionally to allow air flow

PREPARATION OF THE COMPOST

- Place the composter in which the compost will be prepared in the appropriate place. The place where it is placed should be carefully chosen because there should be enough space for further work. This is why composter should not be placed close to bushes or fence.
- If the composter is made of wire, it must be lined with perforated foil to protect the compost from light and drying.
- Substrate - first, a layer of 30-40 cm thickness consisting of branches and twigs is laid.

- Place the chopped and well-mixed raw materials in the composter.
- Cover the composter.
- Control compost mass at least once a week.

The most important is to know and respect three main rules.

CRUSHING

All raw materials that are put into the compost must be chopped up in order to provide the microorganisms with soil for their activities. This ensures the decomposition of our organic waste from the kitchen, household and garden in a short time and without accompanying unpleasant effects such as rotting, stench, insect bites...

Microbes attack the prepared material exactly where we cut them, that is, on the "wounds". it depends on you how long you will cut the material, but the smaller the better. Small materials can be mixed more easily than long and coarse ones.

Chopping is done with an ax or chopper.

MIXING

We add soft materials that contain a lot of moisture to the compost: vegetables, fruit remains, grass clippings, as well as hard ingredients: sawdust and chopped straw. Sawdust provides the compost with a light, airy structure. Mix the soft and hard ingredients well in a 1:1 ratio. thus, various organisms are provided with enough food and air, and decomposition is accelerated. The addition of stone dust "flour" improves the composting process and stabilizes the pH value.

In this light moist mixture, a temperature of 40-60% C is created, which accelerates the decomposition of the material and leads to the hygiene of the compost: the causative agents of various diseases, the seeds of harmful grasses are destroyed during this process.

KEEP ACCOUNT OF CONSTANT MOISTURE IN THE COMPOST

- Compost should be prepared at the dark place as the light increases growth of the grass.
- It is protected from rain as it would wash out important nutrients from the compost.

- Compost should be covered.

- The care of compost should be done by controlling once a week.

- If necessary we can water it as long as it does not get moist like drained sponge.

Possible negative effects during composting

STATE	CAUSE	FIRST AID
Compost is dry, there is no fermentation, gray mold appears.	Due to the self-heating of the compost or in very dry weather, the water evaporated and the salt concentration increased. Microorganisms stopped the activity.	Loosen, moisten, add fresh material (kitchen scraps, chopped grass and weeds). Form the stack again. Cover with leaves, dry grass or soil.
The compost is too wet, there is a lack of oxygen, the smell of rotting is felt, the color is brown-black.	Long rainy period on uncovered compost, too soft wet material (fresh grass, kitchen scraps, too little woody material).	Loosen, add dry material (chopped wood, dry leaves, straw) and a little dry mature compost and sifting residue.
Incomplete fermentation (dry in places, animals gathered in one place).	Too much of dray wooden materials**.**	Loosen, add fresh grass and kitchen waste, mix well and form a pile again.
Unpleasant smell (lack of oxygen, very wet in places).	To much of the fresh, wet, nitrogen-rich material.	Loosen, aerate with a pitchfork, add dry material (residues from sieving, mix well and form a pile.
Alternating wet-dry parts, moldy and without fermentation.	Compost is not properly mixed during forming of compost pile and was not kept well.	Check the condition of the compost regularly. When adding fresh material, thoroughly mix wet kitchen waste with dry woody materials and leaves.

COMPOSTING THE GRASS AND FOLIAGE

- Freshly cut grass is a very important material rich in rotting substances and poor in structural elements, i.e. there are no supporting wood fibers. In compost that contains only grass clippings, an enormous decomposition process occurs during composting: the compost heats up a lot, contains a large amount of moisture, and due to the lack of structural fibers, it sticks together quickly and there is a risk of suffocation and rotting.

- Cut grass is easier for composting. Ibn order to prevent sticking together it is necessary to add solid wooden materials such as chopped branches, hey or foliage. Fresh grass compost is very reactive and demands more care. Composted grass produces very slightly compost soil in very short time reach in nutrients.

How to decrease quantity of the grass:

- Sow the lawn with a special mixture of meadow grass that does not need to be mowed often, thus reducing the amount of swathing.

- With shorter time intervals between mowing the grass, the grass can remain on the lawn. In a few days it will spread and improve the vitality of the grass surface.

- Cut grass is very important in the nutrition of small animals. Maybe there is someone in your neighborhood who needs grass or hay to feed farm animals.

The layer of autumn leaves under the bushes is rich in nutrients and provides the soil and its inhabitants with winter protection. Many living creatures that live in the soil are used to such a source of food that also provides them with protection from the cold. The leaves can be composted without much difficulty and are an excellent compost for growing.

- Small amounts of leaves are mixed with the remaining garden and kitchen waste and the mixture is composted.

- Larger quantities of leaves can be deposited in a place where they can dry during the year and can be constantly added to wet kitchen waste or grass clippings.

- Heaps made of leaves are composted the fastest if the leaves are still slightly moist and cut into smaller pieces. To prevent compaction, up to 20% of solid material should be added to it. - it is best to cover free-standing compost heaps of leaves with a compost cover so called Top-text, because wet leaves are quickly blocked into lumps, making further compost conversion difficult and starting to rot.

Leaves that decompose quickly: leaves of fruit trees, elm, white ash, maple, linden, elder.

Leaves that decompose slowly: leaves of beech, oak, chestnut, walnut, conifer, leaves covered with resin.

Walnut leaves contain a natural herbicide and are not recommended for composting. Walnut leaves can be made into a separate compost pile. It is used to control weeds and grass.

TYPE OF COMPOSTERS

- **Plastic, wooden, wicker, wire, compost pile**

Žičani komposter

Plastični komposter

Drveni komposter

Kompostna hrpa

STAGES OF COMPOSTING

Decomposition phase - a mixture of materials with sufficient moisture and oxygen represents an ideal medium for bacteria and yeasts, which are pioneers in the process of decomposition of organic material. Through their metabolism, they break down organic substances, producing heat that can be detected by measurement. Weed seeds and various pathogenic microorganisms cannot survive this increase in temperature.

The processing phase - after the first period of very high temperatures, the first fungi appear. During this period, the number of microorganisms grows very quickly. Water and oxygen are needed for their development, so you need to move the pile and check the moisture. The temperature drops slightly and approaches the ambient value.

The construction phase - here first appear protozoa that feed on bacteria and fungi, and after them the first multicellular organisms such as centipedes, earthworms, jumping beetles and dung beetles that grind and mix the material. In this phase, fresh compost is formed, and then the composted earthworms form the so-called compost lumps as a basis for creating healthy compost. At the end of this phase, we get fresh compost ready for plant nutrition.

TEMPARATURE OF THE COMPOST

During the decomposing phase the temperature in the middle of the compost can reach more then 60 degrees Celsius, what suits to destruction of germs - the causative agent of plant diseases, as well as the seeds and weed. At the open piles of compost the temperature is just a few degrees higher then in the area. The highest temperatures are reached at the open areas 3-5 days after the phase of decomposition. Usually the existing compost is covered by 10 cm in order to warm fresh material. At this phase of decomposition process of changes is caused by the batteries, actinomycetes and fungi. If temperature during the fermentation decreases the other types of bacteria and fungi appear and cause further changes in the waste. This way the compost will get free of weed seeds and parts of the plants which might encourage shoots. Sanitization of the compost mass is achieved by temperature, and each time the compost is mixed, the temperature rises again. At the time of decomposition at at least 60 degrees, the compost heap should be mixed at least three times so that all the compost is covered by temperature sanitization. Sanitization of the compost mass is achieved by temperature, and each time the compost is mixed, the temperature rises again. At the time of decomposition at least 60 degrees, the compost heap should be mixed at least three times so that all the compost is covered by temperature sanitization.

COMPOSTING DURING THE WINTER TIME

Composting should and can be continued even in the winter period:

- it would be a mistake to throw the green remains of fruits and vegetables in the garbage can when the temperature is low, especially if we have already started composting,

- in order to be able to make a proper compost heap in the winter, it is necessary to make a reserve of dry chopped wood and dry leaves in the fall, which is useful for mixing with the soft remains of fruits and vegetables from the kitchen,

- the processes in the compost pile are slower in winter. Microorganisms generate heat with their activity, so that even with outside temperatures below zero, 40-50 degrees can be noted in the compost pile. Only during a longer period of low temperatures do the compost decomposition processes occasionally stop.

- the decomposition process will start again as soon as the low temperatures pass and the outside temperature is above zero. "helpers" in the compost, various bugs, centipedes, earthworms and other decomposers are dormant during the winter. Compost worms are pulled into the middle of the pile or deeper into the soil. At the beginning of the spring work in the garden, the rich life in the compost heap will come to life again and the process started in the fall will continue.

Tip: if you're composting and have some old, mature compost, it's a good idea to add it to the new pile to start the decomposition process. It is also good to mix the coarser residues when sifting the compost into the fresh pile. This is so called vaccination.

SIFTING COMPOST

After 6 months, the first quantities of fresh compost can be expected. There are still undisintegrated parts in it, so it needs to be sifted, first through a coarse sieve and then through a fine sieve with smaller openings. Fresh compost after 10 to 12 months of composting should also be sieved and used for top dressing in the garden and indoor flowers. For the production of seedlings and indoor flowers, it is necessary to make a substrate of equal parts of mature compost, garden soil and sand. Residues from sifting are used as an addition to fresh biowaste when forming a new compost pile.

USE OF COMPOST

Depending on the intended purpose, you can sift the compost and use it after 2 to 12 months.

- **Fresh compost:** compost that is 2 to 6 months old still contains a lot of available plant matter and can be used as a complete fertilizer and ground cover when growing demanding plants that need large amounts of nutrients to grow.

- **Mature compost:** depending on the weather conditions and the composition of the prepared material, it takes 6 to 12 months for the compost to mature completely. Then it can also be used for growing sensitive crops as a long-term fertilizer and soil improver, feeding indoor flowers and preparing the substrate for growing seedlings.

Compost should never be buried deep in the soil, it should only be sprinkled and mixed with the top, surface layer of decomposing soil. Compost dissolved in rainwater can be applied to the leaves and used as a preventive protective agent against a number of fungal diseases of plants.
For planting flowers, we use a mixture of 1/3 mature compost and 2/3 garden soil with the addition of sand. Recommendation for the use of compost: for an area of 1 m2, use 5 liters of compost and mix it shallowly into the surface layer of the soil. The amount of 5 liters of compost corresponds to the amount of 30 grams of mineral fertilizer NPK (sodium, phosphorus, potassium). For a garden of 100 m2, this is a saving on the purchase of 3 kg of artificial fertilizer. For more demanding types of vegetables, additional nutrition is possible another form of compost after the movement of the vegetation.

The amount of compost required for 1m2 of garden depends on:

- the current state of the garden soil;

- to the cultivated culture;

- the nutritional value of the compost, which depends on the material from which the compost is made;

So, in order to accurately determine the required quantities for each culture, it is necessary to analyze the compost and the soil and determine the exact amount of compost for each culture.

ADVANTAGES OF COMPOST

It is often said that healthy plants come from healthy soil, and the best way to create such soil is to use garden and lawn compost. Composting is natural way of recycling the materials back to the soil in order to continue cycles or the plants life. Billions of alive organisms existing in healthy soil transform dead plants and needed nutrients necessary for the new growth of the plants.
With a little investment of time, you can improve the health and appearance of your garden, save money on fertilizers, and at the same time help preserve natural resources and protect your health.

Compost is environmentally friendly

Food left overs (kitchen waste) and garden waste (foliage, branches, grass, pine wood) make almost 30 % of the material which ends up each year at the landfills.
By using nutrients in the composting process, we reduce the amount of waste that ends up in the waste field, taking up valuable space and creating methane, a greenhouse gas that is 20 times stronger than carbon dioxide in the atmosphere.

Composting helps the development of healthy plantation

Compost improves the porosity, density and structure of the soil, creating a better environment for plants and plantations. The use of compost increases soil infiltration and permeability, reduces water loss, and supplies the soil with various macro and micronutrients that improve and stabilize pH values and help control and reduce certain pathogens in the plantation.

Composting is simple, practical and economical

You can start the composting process with just leaves and grass in your yard and garden. By adding compost, you reduce the need to add artificial fertilizers. Many municipal companies charge according to the amount of waste they take away. By composting organic waste, you can also reduce your garbage collection costs.

Additional advantages of the use of compost

Compost has the ability to bind heavy metals and other pollutants and reduces their permeability and absorption in plants. Therefore, sites of contamination with various pollutants can often be improved by soil amendment and compost. Microbes found in compost also have the ability to break down some toxic organic compounds including petroleum (hydrocarbons). This is one of the reasons why compost has recently been used in the bioremediation of oil-contaminated surfaces.

If you want to start composting or separating organic waste, contact the association "Krka" and you will receive advice related to the composting process.

Thank you for your contribution to the protection of the environment!

For all the information regarding the situation of the environment and separation and collection of the waste, please contact the association:

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