

Republic of Croatia – Author: Institute of agriculture and tourism Poreč**Working title – Olive residue isn't waste**

Ministry of environmental protection and urban planning Republic of Croatia in their documents has defined this matter as non waste component of residues problem.

In post few years in Croatia were lots of discussions about olive residues and potential pollution which could be connected with impropriate care.

In Croatian waste act (NN 178/2004, 111/2006, 60/2008) there are no specific definition about olive residues as a waste. Olive growers and olive millers few years ago had made on document where is written their suggestion and request that Croatian parliament must erase article about residues as a waste from regular act.

But problem was that olive residues weren't mentioned in act (as a waste or a very dangerous waste) so it is impossible to erase it.

Also in same time in Croatian waste act in his waste catalogue this problem was defined under the number 02-03-00 as a "waste as a result of preparation and processing of fruits, vegetables, crops, edible oils, cocoa, coffee, plug and conservation and processing of tobacco".

So there is no possible to isolate olive residues as a special kind of waste. This problem is now more expressed because of on Croatian water act Croatian Water act (NN 153/2009) is defined that in limestone areas in Croatia is impossible to put OMWW back into the fields or some other parts of environment without 100% processing.

In the same time almost all olive trees and olive millers are situated in those areas and almost all of them are small and medium enterprises or small agricultural family business whose do not have enough money to invest into a purification facilities.

Also in Croatian waste act stays defined that without processing vegetable waste cannot be put into the nature. It must be fix on waste disposal facilities or processed as some kind of by-product.

But Croatian law has also Regulation about waste disposal criteria NN123/97 where is written that all kind of residues cannot be stored into a dump because of high level of CO₂.

In same time in waste catalogue nowhere is mentioned that olive residues are waste but is defined that (under the number 02-03-00-1) "if producer himself cannot assign waste key number, he must organize chemically and physically analysis of residue in accredited agency or institution where would be except waste key number define also a waste composition, waste structure and appropriate waste management".

In the same time in Republic of Croatia there aren't laboratories accredited under the norm ISO EU/HR 17025 for waste analyzing.

In Croatian law there is also another important acts where is possible to find some solutions for fixing problems connected with olive residues.

Regulations about food hygiene (NN 99/2007)

Law on Appellations of Origin, Geographical Indications and Designations of traditional reputation of agricultural and food products (NN 84/2008)

In those parts of Croatian legislative was written that olive residues after the cold processing could be by-product. Olive miller could decide if he wants to declare residues as a waste or as a potential resource like by-product. If olive millers and olive producers decides to use residues as a by-product they must organizing analyses under the catalogue number 02-03-00-1 before he put residues into a another processes. If he decides to treat residues as waste he must to propositions defined under the article 12, paragraph 1 of Regulation about waste disposal criteria NN123/97.

But if we use Regulations NN 99/2007 and act NN 84/2008 there is possible to find possibilities to invest into by-products of olive residues for next categories:

1. Food supplement for cattle's and wild animals in nature,
2. organic fertilizer
3. by-product in cosmetic industry

In same time Fund for environmental protection and energetically efficiency act (NN 107/2003) define another possibility.

1. to use olive residues as a fuel (not specific kind)

Producers could independently decide in which kind of by-product they want to invest. But once again they firstly must insure 100% prevention of all waste characteristics possible to find in olive residues.

Ministry of environmental protection aims that is for using olive residues as organic fertilizer or for food supplement for cattle's and wild animals in nature responsible Ministry of agriculture, and for using olive residues as a fuel count departments and state agencies.

In Croatian act about obligatory references (NN 35/2007) is written this fact as an importance to define state of art for every field of responsibilities in act providing.

Energy

In Republic of Croatia those acts where is regulated energy management:

1. Fund for environmental protection and energetically efficiency act (NN 107/2003)
2. Croatian energy act (NN 68/2001)
3. Strategy of energetically development of Republic of Croatia (NN 38/2002)
4. Act about proclamation of amendments the Law on Regulation of Energy Activities (NN 76/2007)

5. Regulations about the use of renewable energy and cogeneration (NN 67/2007)
6. Regulation on fees to boost electricity production from renewable energy sources and cogeneration (NN 33/2007)

Olive residues aren't mentioned in any of those acts and regulations, and if is possible to extract it from it will be possible only in Regulations about the use of renewable energy and cogeneration (NN 67/2007) in article 4 of the act where is written:

Facilities used for producing electrical energy and heating facilities from renewable energy sources should be divided through next categories:

Group 1

Facilities connected on distribution net which use renewable energy sources for electrical energy producing installed power till 1 MW

Under the point "D" is mentioned:

1. Electrical plants from biomass
 - a. hard biomass from forestry and agriculture (branches, pits, straw)
 - b. hard biomass from wood processing industry (crust, sawdust, cutting residue)

Under the point "F" is mentioned:

1. Electrical plant on biogas from agricultural plantation and organic residues from agricultural and food industry
 - a. Corn silage
 - b. Stable fertilizer
 - c. Stumbles fertilizer
 - d. Waste from biogas production

Group 2

Facilities connected on distribution net which use renewable energy sources for electrical energy producing installed power more than 1 MW (description is the same)

There is no clearly mentioned olive residue as a potential fuel.

So this is all what is possible to abstract from Croatian laws, acts and regulations so we have next recommendations:

Fact 1

With regard to the existing financial mechanisms defined through measures organized by Fund for environmental protection and energetically efficiency at national and local levels, we must to mention that in this moment in Croatian market exists lots of co financing possibilities. One of the biggest is co financing till 70% of full investment if investor have a quality business plan for implementing a plant

based on renewable energy sources (including a biomass – olive residues to) and replace existing heating system or electrical facilities.

But problem is that in Croatia there are no defined the most important tariff regulations for renewable energy in Croatian energy act (NN 68/2001) and in Regulation on fees to boost electricity production from renewable energy sources and cogeneration (NN 33/2007). This would be important to establish so the local governments could implement stimulations for small electricity producers and construction producers in local areas.

Recommendation is:

Improve circulation of basic information till potential users of those co financing programs so they could invest into a new energetic facilities. Also tariff regulations must be defined for renewable energy sources for encourage of all potential small investors to invest into a those energetically facilities.

Fact 2

In Republic of Croatia every county have their own energetically agency which have duty to implement conclusions defined in Strategy of energetically development of Republic of Croatia (NN 38/2002). One of the main activities in those agencies is to popularize attitude about renewable energy sources through EU directives and plan to reach 20 – 20 – 20 measure.

Recommendation is:

Improve contacts with local governments, public bodies, schools, students, small and medium enterprises, agricultural companies, associations. This is one of the main activities based on “Rural development plan 2007 – 2013” by Ministry of agriculture and rural development. Associations and those agencies must take care about environmental development in rural areas on every platform (ecological, economical and field of energetic) Local resources must be used through the way to appease local needs for energy, clean environment and economic sustainability.

Fact 3

In Republic of Croatia there is no biomass market so there is no prices, transport calculations, etc. In same time almost all biomass’s going outside country to Austria and Germany for their biomass plants and energetically facilities. Olive residues still haven’t defined clear purpose.

Recommendation is:

To stop with this practice and establish biomass market inside Croatian territory so we could reach plan from pint (fact) 2. There is no motive supported by the local political authorities and there is lack of legislation that would motivate people to invest in systems of producing energy from renewable sources. There is no system of incentives for investors who have the intention to start with the development of power plants and other systems which base production is of producing the electricity from renewable sources. It must be stopped because of this is greatest gap which inhibit all possibilities to develop biomass market. Local governments must define their needs to fulfill energy development into their local systems so in the time of crisis local area can be independent from international energy supply.

Fact 4

In Croatia there is a "Regulation on the use of renewable energy sources and congregations". Regulation was adopted 15.06.2007. It is defined in detail the problems of all forms of renewable energy sources, except biomass. Biomass is mentioned in only one short segment. No word is mentioned explicitly about olive pits. Following the Regulation this source of renewable energy is defined as solid biomass from forestry and agriculture (lop, straw, seeds) and solid biomass from wood processing industry (bark, sawdust, chaff).

Recommendation is:

Consequently the conclusion is that this issue should be further promoted and developed. Fund for Energy Efficiency of Republic of Croatia is formed in parallel with the adoption of this regulation and has not yet really started with quality work. In Regulation there are no defined rules of how the manage with biomass as a renewable source of energy, not defined methods using plants or their commissioning. Regulation of using biomass for other non waste purposes in defined in some other acts not connected with basic problem of M.O.R.E. project.

Fact 5

Remains of agricultural production have an important place. Agricultural SMEs are not stimulated to use renewable sources of energy. The only problem that is significant is highly complex procedure of acquiring the status of eligible producers of energy (equal to 100 kW and 100 MW). It is necessary to simplify the procedure for "male" power. The formalism must be excused because it is an incentive that must be very objective and transparent supported with some economical value. In the European Union 58% of primary energy derived from renewable energy comes from wood and other sources. In Croatia, the primary energy obtained from biomass and wood is 0.00025% and is now used exclusively for the individual examples of heating homes or smaller spaces of certain manufacturing facilities. Only one big furniture factory uses their own biomass to close the energy circle and in Croatia are more than 150 producers in wood industry.

Problem is that Croatian basic strategy of biomass promotion is primarily focused on stimulation of use of wood biomass (wood pellets, wood chips etc.) due to high percentage of Croatian territory covered by forests. On whole territory is almost 60% covered by forest. Also there is lots of focuses on sun and wind. Olive residues are still on far away margins.

Recommendation is:

There is no motive supported by the political authorities and there is lack of legislation that would motivate people to invest in systems of producing energy from renewable sources. There is no system of incentives for investors who have the intention to start with the development of power plants and other systems which base production is of producing the electricity from renewable sources. Especially purpose of all actions is to explain that even if we have small quantities of olive residues we should mix them with wooden residues and make a final high quality by-product for energetic purposes.

For Republic of Croatia main recommendation (aligned with Road Map document of M.O.R.E. project) is to develop such market and resolve olive residues problem through:

1. Increasing levels of knowledge and awareness about the need for olive producers using new technologies.
2. The establishment of olive cadastre.
3. Increase the area of olive groves.
4. Much larger quantity of Olive production.
5. Revitalization of the old and abandoned olive trees.
6. Making business plan how to mixed olive pits, lots and wooden residues.
7. Organizing co-financed transport supply.
8. Make a control management to organize market for olive residues.
9. Better control of process disposal of the olive residues.
10. Control of all acts and regulations
11. Establish new co financing positions for small investors
12. Define popular tariff for selling electricity to national electrical system
13. Encourage potential investors to invest not only in energy while also in other kinds of olive residues by-products
14. Try to do everything so the problem of olive residues could become one of the basic biomass resources and avoid that all other kinds of renewable energy sources become most important issue (sun, wind, waves etc.)