# Ege de Atölye – Zeytin 2011 Aegean Workshop – Olives 2011

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# Ege de Atölye - Zeytin Workshop 2011

"...Because Living Weighs Heavier..."

On a late June morning, a group of scholars, ranging in age from 17 to 70; Turks, Germans, Spaniards, and Americans; anthropologists, chemists, engineers and students, met in an ancient olive grove in a small town of Kozbeyli, near Yeni Foça, Turkey. The words of Turkish Poet, Nazim Hikmet, challenged us to attend to the ancient trees - to discover what they can teach us about nature, culture, history, economics, and art. For two weeks we joined together as a learning community, experts becoming apprentices, students becoming teachers, and all united by a passion for learning where all dimensions of a subject, in this case olives, become equally accessible in this search for understanding.



Our program included careful observations in the groves, scientific experiments on olive oil, visits to modern and ancient oil presses, cultural apprenticeships with local shop owners, lectures by experts on olives in the ancient world and the critical role of the olive in modern Turkey, guided tours of the Temple of Artemis, the terrace houses in Ephesus, and the temples and fortresses of Foça. We sailed on the Aegean, danced in the town square, dined with the mayor, and attended the wedding of an olive grower's granddaughter.

To weigh life, as Hikmet charges us, we must take its measure, be aware and in the present. To do that, we must use all our senses: all aspects of our intelligence and creativity and in the process share our expertise and our questions. This methodology is central to the liberal arts. For two weeks, on the shores of the Aegean, we were privileged to do just this in the first of what we hope to be a continuing Aegean workshop, or Ege de Atölye.

Design Elements for Ege de Atölye (Aegean Workshop) and the Zeytin(Olive) Pilot Program

Ege de Atölye was conceived of and coordinated by a director, Zeynep Delen, with several staff assistants. The workshop has a board of directors consisting of school administrators, experienced faculty scholars, and educational entrepreneurs. For two years, the group has met occasionally in person and regularly by SKYPE to help the director clearly articulate the goals of the program, and create the infrastructure and the pedagogy necessary to meet those goals. We were successful in receiving donations of many gifts in kind, transportation, use of facilities, and supplies and are actively pursuing funding for future programs. The Marion and Jasper Whiting Foundation provided funds for the initial travel for one board member and facilitator.

By the winter of 2010, we had identified three keynote speakers, four faculty members willing to develop service learning curricula related to Zeytin, and an assessment team that would help us evaluate our program. Participants were recruited through our website, <a href="http://www.egedeatolye.org">http://www.egedeatolye.org</a>, which went live in January 2011. Several newspaper articles and radio interviews in Turkey yielded applicants as well. An on-line application process was used to select applicants. On June 26<sup>th</sup>, the group consisted of a core of 15 who participated in the entire 2-week program. The number grew as large as 22 at certain moments as visitors dropped in to share certain expertise and participate in units as they were able. Five Americans, one Spaniard, one German, one Indian and fourteen Turks participated. Smaller groups were often formed for work in the community or to explore public spaces such as the market or lectures, and each of the smaller groups contained one person fluent in Turkish to assist with translations. Each of three learning units was facilitated by at least one faculty member.

## **Scholarly Module 1 - Chemistry of Olives**



The physical and natural sciences inquiry launched our investigations. For a morning, we individually met the ancient trees and spent some golden minutes in their shade. Participants were instructed to observe, and to refrain from interpretation. Individually, we wrote observations in a reflection journal. "The trunks of the trees are pocked with holes as large as 10 cm x 4 cm in a random pattern." Later, groups were formed to consciously distribute experts and learners, and individual notes were

shared. Similarities and differences of observations were noted. Groups reported back and the facilitators, Professors Pat O'Hara and Rich Blatchly summarized themes that dominated the observations. This year's dominant theme was a concern about threats to the trees and concerns for their continued existence in the face of a changing climate, political reality, and shifting economies.



The group reconvened after lunch at an organic olive oil press, Tas Köy, owned and operated by former Instructor, Hakan Barçın. Each group received a different variety of olives and asked to extract oil however they could. The groups quickly realized that compression produced a liquid that separated into two immiscible layers. We used molecular models to show the structure of the molecule that predominates in the oil phase: a triglyceride constructed from glycerol and three fatty acids. A goal in the production process is to prevent the breakdown of these triglycerides and the production of free fatty acids. After a quick discussion of why certain liquids don't mix, the group was given a guided tour of the spotless new facility by our host. Here we could see firsthand how,

on a large scale, the mash of olives was produced and how the liquid product that contained both the "black water" and the golden oil was collected. Faced with our earlier attempts to separate the oil from the liquid, the groups could now understand the need for

the centrifugal separator. The ecologically responsible recycling of the somewhat toxic waste water that is extracted from the olives was a concern of ours, and one that continued throughout the program as we visited several facilities. A summary review of this problem has recently been published. Finally we discussed the collection (plastic cartons are OK but no plastic bags), packaging (blue glass is best), testing (not required by Turkish law but done anyway at all the facilities we visited), storage (dry and cool) and distribution (mostly local) of the oil.



Following the tour, we had the pleasure of being instructed in the finer details of olive oil tasting. A sample of each of four oils was placed in a shallow bowl and we noted the color against a white background. Then, we were shown how to slightly warm the oil by holding it in the palm of our hands and while swirling gently we noted the aroma. Finally, we tasted the oil by noisily slurping it into our mouths, making sure to pull in air to aerate the oil and enhance the taste. We were asked to note the

pungency, astringency and other aspects of the four different oils. Our host, Mr. Barçın, was extremely humored when in the blind tasting several members of the group chose a utility grade oil over an award winning extra virgin oil produced by *Tos Koy*.



Next, the groups rotated through five different chemical or physical tests on their oils. In one experiment, the groups learned about color and how scientists quantify the optical properties of a substance. The color of oils is mostly due to the presence of three compounds: chlorophyll to give a green color, beta carotene to produce a slight orange color, and lutein to produce a more golden yellow color. Using an iPhone app: Irodori, each group measured the color of the oils using an RGB

analysis against a white background. The fluorescence of the oils was also measured using a portable black light. Chlorophylls present in some green oils produce a beautiful red fluorescence. In a second experiment, the bright blue color created by the reduction of iron ferricyanide/ferric chloride was used to measure the amount of antioxidant in the various

oils. Antioxidants such as polyphenols are correlated with many of the health benefits of olive oil. Here, refined oils serve as negative controls. A third experiment measured the peroxides that are present at low concentrations in the oils were measured with peroxide test strips, and hydrogen peroxide was used as a positive control. The primary fatty acid in olive oil is the omega 9-oleic acid. The unsaturation can be chemically tested by its slow decolorizing reaction with iodine (we used tincture of iodine). Mineral oil (fully saturated) was used as a negative control. In a final experiment we assayed the free fatty acid (FFA) content of the oil. The importance of the FFA is critical as it determines if the oil can be classified as extra virgin (<0.8% FFA), virgin (<2% FFA) or utility grade (> 2 % FFA). As the FFA goes up, the price per liter drops precipitously. We performed a qualitative assay of the FFA by its reaction with an aqueous solution of 5% sodium bicarbonate. A soapy interface is created at the oil/water interface in the presence of low quality (high FFA) oil with high percentage of free fatty acids.

At the end of the day, we compared our findings and this provided an opportunity to talk about the need for repetition and consistency and how scientists have created a formal way to talk about error.



On Day 2 of the physical and life sciences unit, we commandeered the hotel kitchen and explored wavs in which we cook our foods with oil and without. We introduced the browning reaction (Maillard reaction) and how this gives rise to the delicious brown edges of food. We raised the question of whether the browning reaction might be sensitive to pH. Each group was assigned a food type: starch (potato), protein (egg), and carbohydrate (bread dough), and asked to cook their food at

different pHs but under controlled conditions. We used vinegar for low pH, sodium bicarbonate for high pH, and also performed experiments at high salt and high sugar. The effect of each soak on the browning reaction was discussed. Most interesting was the way in which the high pH substances browned in a completely different manner than the others. It was very instructive to have the groups design their own experiments and attempt to perform the tasted on the various samples under controlled conditions. We felt this led to a greater appreciation for the need for careful controls and design in any scientific experiment. We were grateful to have only one small fire in the kitchen.

## Cultural Exchange Opportunity 1: Sirtaki Dance Workshop

As part of the cultural exchange, we spent most of the afternoon learning the four basic steps to the traditional Greek Sirtaki dance from Turkish participant Volkan Ersuvar. The patio of our hotel served as a perfect dance studio. Later that evening, we put on an impromptu performance for the neighborhood to the great amusement of the locals.



#### Scholarly Module 2 - Cultural Apprenticeship/Participant Observation

Olive groves overlook the town of Yeni Foça, and line each of the roads that provide access to the region. In 2009, locals mourned the loss of trees on 5,000 acres as a result of a fire. We heard of volunteers, who came to try to save to ancient trees, and how the loss brought tears to the eyes of some elders. Our social sciences facilitator, Meltem Türköz, Assistant Professor in Folklore and Ethnography at Işik University helped us gain some appreciation for the centrality of the olive in the cultural history of the region. Nearly every family has some connection to the trees, and presses and groves are often communally owned. Picking happens in the winter, and is accompanied by festivals and customs that bring the community together. Professor Türköz introduced us to some of this cultural heritage making us aware of a tradition of olive picking folk songs in the Mediterranean and playing

for us samples of Turkish songs about olives (see YouTube links at the end of this document). She also introduced us to some of the central tenets of ethnographic research in folklore and cultural anthropology, making sure we understood that each of us would bring our own biases to our study. We were told that what we learn in participant observation is interpretive and always 'positioned'.

We started our active research in this unit by visiting the weekly market in Yeni Foça. We were to spend 30 minutes by ourselves, just walking through the market and observing. We then gathered and shared our observation over a cup of *çay* in a local teahouse. The market is a riot of colors, smells, and sounds that can be overwhelming to foreigners unaware of the underlying rules and order. Some were struck by the melodic calling intended to lure buyers away from other vendors - which ended up sounding like duets, quartets, and small vocal ensembles. We noted the large number of male vendors both young and old, with an occasional woman in the background. There were a few exceptions. The impression of overarching abundance with hundreds of watermelons, peaches, cherries, apricots, zucchini, eggplants, okra spilling out of farm wagons and white trucks and landing orderly in the booths that lined the narrow aisles. We saw displays of thousands of olives in unimaginable colors from deep ebony to variegated greens and purples to lemon green. The market was exceptionally clean despite the human chaos.

Our next task: we paired up and were instructed that the non-Turkish speakers engage with a vendor and make a purchase. In this process, we were to see if we could decode some of the social rules. One visit to a spice market (three generations of men, the youngest of whom spoke some English) led to a long history of this families participation in this market and to the expansion of the business from spices and dried fruit to herbal teas and other folk medicines. We were given samples of especially tasty dried berries that we were told would make us young, nuts from local walnut trees, and dried apricots. We bought dried figs, apricots, and walnuts mumbled our thanks, and smiled good-bye. In a most interesting encounter, three of our group made the acquaintance of an ebullient black Turk, whose family had immigrated to Turkey from Africa several generations earlier. His young assistants posed for photos with large slices of melon pierced and held aloft with huge knives and huge smiles. They asked to be sent copies of the pictures via Facebook, which they used despite the fact that they were illiterate.

The following day, we received our apprenticeship assignments with local shop owners. We were first instructed in some of the methodology with regard to participant observation and an interpretive approach to culture. Our tasks, besides being of assistance in whatever ways we could, was to ask our hosts what stories they could tell us of collecting olives themselves, or of the olive collecting season. Each pair sent out included one person fluent in Turkish and English. We were placed in businesses such as cafes, grocery shops, fish restaurants, and tailor shops. Professor Türköz and Zeynep Delen had identified receptive business-owners ahead of time. Activities involved helping out with routine daily tasks such as dusting, sweeping, or creating a proper English and German translation of a menu for tourists. One group gained spent a morning at the fish market buying fish, and an afternoon learning the finer art of cleaning fish. Detailed notes were kept of our interactions with the shop owners and we always sought to bring the

conversation back to olives when we could. At the end of the day, we compared notes and collected our olive oil memoirs. Professor Türköz will continue to collect, edit, and prepare these personal narratives for publication.



# Keynote Speaker 1: Ulrike Muss On the Cultural History of the Olive in Antiquity

Ulrike Muss, Science Director at Crisler Library in Selçuk and Professor of Archeology in University of Vienna prefaced her talk by providing us with a full day's guided tour to the sites of the Cathedral of St. Jean, nearby Temple of Artemis, and the remarkable city of Ephesus. In addition to sharing the wealth of information regarding to archeological records present at each site, Professor Muss had us consider the decisions an archeologist must make when preparing a site for public display. What *IS* it that we want the public to see and what is it that they want to see. She described both the evolution in the thinking within the field over time and the different schools of thought on whether a site should be shown as it is excavated, or whether a site should be reconstructed and much as possible. Debates exist with regard to whether replicas of the ancient cities should be rebuilt, or ruins should be left or partially built show as to require the observer to use his imagination to fill in the pieces. In Ephesus, which has been inhabited for millennia, which time do you give priority to? These debates highlight a similarity with teaching. What is it we want our students to learn, what do we concentrate upon, what do we leave out? When does simplification become oversimplification and do more harm than good?



Later that afternoon, we heard a keynote presentation on the *Cultural History of the Olive in Antiquity* by Professor Muss at the Ephesus museum in Selçuk. It is likely that lanterns

from prehistoric time burned olive oil. Coins from the Ionian period show olive branches as presumably signs of peace and as the olive is a gift from Athena, olive branches imply divine authority. We saw that representations of the harvesting of olives on urns from the 3rd Century show a method that is still practiced today in the Mediterranean region. It was clear from the evidence presented that olive trees, olive oil, and olives themselves link us to our ancestors by threads that are long and strong.

Buçu photos 1145 (coin), 1154 (lamp), 1155(urn) we will need permission from Ulrike's sources for these.

#### Cultural Exchange Opportunity 2: Visit to a Boutique Olive Press

Atilay Ileri is a Turkish lawyer who lives in Zurich and owns an olive farm in Selçuk and is the founder of the regional Cultural Arts and Education Foundation. He is a real olive oil connoisseur whose hobby is to nurture each and every olive in his 700,000 m² estate. His appointment as one of the few Turks on a renowned International Panel of Tasters might be one reason why the oil produced from his press is rated as the 14th best olive oil in the world. He invited us during our trip to Ephesus to visit his Selçuk farm, Ab-u Hayat, and the olive groves and olive oil factory. We had a dinner party there, with a local wine and some wonderful samples of his beautiful green olive oil. Olives from this facility are pressed within 24 hours of being picked, and never touch the ground. The final press is filtered twice, once with a conventional cotton filter and second with a filter specifically designed in Europe.



**Scholarly Module 3- Decision Making Christian Wernz** is an Assistant Professor of Industrial Engineering at Virginia Tech, USA.

In this module, participants learned about decision-making and what individuals and organizations can do to make better choices. This module introduced findings from psychology, economics, neuroscience and industrial engineering into the process by which humans make decisions.

The module was introduced with a TED video by Dan Gilbert that discussed the difficulties people have in estimating odds of gains and the value of gains associates with a decision. Both of these values, odds and gains, are key to making decisions under uncertainty. Based on this video, we discussed further common biases and errors in decision-making. For example, people overestimate the death toll of events, such as terror attacks and tornadoes, which make news headlines, and at the same time underestimate the deaths from asthma and drowning, which receive less media attention. We also looked at decision-making behavior where two or more decision makers interact with one another and their decisions affect each other. This area of study is called game theory and applications range from chess to business and politics. To make good decisions, i.e., a decision that maximizes one's utility, one has to anticipate what the game counterparts will do, knowing that they will also think about what you will be doing. We realized that people, including ourselves behave irrationally at times. For example, people are willing to spend money to punish someone else that had treated them unfairly, despite the fact that they do not know the person, won't interact with them in the future, and don't receive financial rewards from the costly punishment. In the past, economists have classified this behavior as irrational. However, recent studies in neuro-economics, where people's brains are analyzed in MRI scanners while they play various games suggest that people derive pleasure from punishing unfair behavior and overall it now seems rational that they have spent that money.

In this module, participants also learned how they could engineer better decisions by using decision analysis tools. The original goal of this module was to help the group decide how to design the final Year Zero Dinner event and how to decide among the many alternative plans. Since olives and olive oil are the focus of the dinner, it was natural that they be central to this dinner. The first step in this regard was to carefully analyze personal objectives and values and what we aimed to achieve with our decision. Next, we generated a list of decision alternatives. Often times, people overlook interesting alternatives that could lead to better outcomes. Decision Analysis provides a number of tools to tackle complex decisions and participants received a sneak peak of these tools and learned to apply them. One of the objectives of the Year Zero Dinner was to say 'thank you' to the many community members in Yeni Foça that we had interacted with over the past days, particularly the host of our apprenticeships. We realized that the alternative "Year Zero Dinner" did not allow us to achieve this objective, since many of our guests would not be able to come. Instead we decided to make an Olive Growing Calendar to hand out to our sponsors, our hosts for the apprenticeships, and to potential future faculty and students.

Cultural Exchange Opportunity 3: Experimental Archeology with Mualla Erkurt and Serim Paker.

The <u>360 Research</u> group in the port city of Urla, Turkey, builds and sails ships based on images and remains of ships from the ancient times. Their goal is to bring national and international attention of scientists and scientific institutions to the rich Turkish maritime history. We were introduced to the Uluburun II, a reconstruction of the oldest merchant ship that sailed cargo in a 1,700 mile circular course that started in Cyprus, and reached to Egypt and the Aegean roughly 4,000 years ago. The ruins of this vessel were discovered in Uluburun in 1982 and the reconstruction currently sits in dry dock in Urla, though it has been sailed and served as a training vessel for those interested in the ancient navigational methods. The ship is known to have carried amber, gold, earthenware pots from Cyprus and an emblem with the seal of the Egyptian Nephritis's seal.

A second ship constructed without any metal fascinated us. This boat was reconstructed from an image on a coin dating back to ancient times and is made without any metal. Instead of nails, the boards on the boat are woven together with rope. The holes punched in the wood at regular intervals and through which the ropes were threaded seem doomed to sink the ship. We learned of how water soaking caused the sisal fibers in the rope to shrink in length, tightening the weave while the expanding in the girth, thereby swelling to fill the hole. This added to the swelling of the wood in the water created a worthy vessel that was powered by



## Keynote Speaker 2: Artun Ünsal The Immortal Olive

Our second keynote speaker was Artun Ünsal, known by the entire olive community as the author of "Ölmez Ağacın Peşinde" (The Immortal Olive). He believes that olive trees and the olive industry are an integral part of Turkey's heritage. He told us that the very first olive trees were wild olives found in the mountains of the Golden Crescent just south of the southern border of modern Turkey. Implements found in ancient settlements show us that Hittites used olives. Remains of olive seeds were found near mortar and pestles dating back 5,000 years. Ottomans used olive oil to make candles and soap. Arabs from south, made by olive oil by hand; Turks who came to modern Turkey from Asian steppes made it by machine. Olives should be a treasured local heritage, but without local participation, the olive industry can't succeed.

In Turkey, 26 million olive trees existed in 1936. Today, there are 158 million trees. There are hopes for future economic development and marketing of oil, which Turks believe is superior to many other oils but which remains unknown to the rest of the world. Unsal believes Turkey needs to prioritize research into the archeobotany and archeobiology at ancient sites. At the same time, the government and private foundations should sponsor educational programs and set as a priority the plumbing of local stories. This can be done using amateur historians to collect memories of olives. He believes that the translation of his book to English would help the world to be aware of the role Turkey plays in the history of olives. He hopes that this recognition would help to organize people to be aware of the treasure they hold.

What can Turkey do specifically to help Turks appreciate their heritage? In short, he likes to use Obama's phrase "Yes we can!" Old mills and factories should be transformed into cultural centers, and visitors should not be restricted. The port city of Urla was the largest port for international trade in Turkey in 1901. Today, visitors are gone, port is sleepy and filled with pleasure boats and the heritage is again being lost. In Urla, the grapes are gone along with the ancient port. For the olive heritage, government should provide incentives to keep some small producers so people can see how oil is made. To enhance export to international markets, international agricultural boards should require a certificate of origin, so that Turkish oil doesn't get mixed up with Spanish.

Unsal left us by telling us that his pride derived from being Turk, of Mediterranean heritage, and coming from the land that gave the world olive oil.

Cultural Exchange Opportunity 4: Head Archeologist Yaşar Özsoy Ancient Olive Press at Klazomenai

At Klazomenai, we were led through the olive press reconstructed from the ruins at the site that date back to 600 BCE. Here we see the earliest example of an oil extraction process with a millstone, a cylindrical roller, a weighted press, and three separation pits carved into the bedrock. The site itself has been reconstructed so successfully, it is possible for visitors to themselves operate the machinery and watch how the parts work together. An international group of schoolchildren gathered here under the Comenius Project sponsored by the EU to learn about their olive heritage and successfully extracted oil from the press. Samples of this oil are proudly displayed in the reconstruction of the warehouse, which is located adjacent to the press reconstruction.



Cultural Initiative 5 – Sailing on the Aegean with Lemon Sailing

So much of the heritage of this land is derived from the sea, it was only natural that we get a chance to get out on the sea in a sailing boat and get some sense of the winds and the waters that enabled the trade of olives and olive oils in this land for thousands of years.



Cultural Exchange Opportunity 6: Eski Foça Excavation with Archeologist Kenan Dogan

At the entrance to the harbor stand the impressive Fortresses of **Beşkapılar** and **Dışkale**, dating from <u>Byzantine</u>, Genoese and <u>Ottoman</u> times. The area is quite active with earthquakes, and we were told how an ancient pagan temple to the Goddess Artemis complete with towering columns, a sacrificial altar with stone cauldron for collecting the blood of sacrificial animals was destroyed in an earthquake only to have the stones reused as the temple was converted into a fortress. From the heights of the ruins, the vast vista of the bays overwhelms the landscape that is how the famous archeologist Ekrem Akurgal imagined that there must have been a temple there and initiated the excavations. Excavation on the site was delayed because a school was built over the site. Today, the site is only partially excavated, and one can see the marble walls of an ancient temple or castle. Along the sea wall, one can see the layers of construction over time. Kenan spoke reverentially of how one could "read the rocks, and see the different civilization which had conquered, settled, constructed these monumental structures, and then were destroyed either by enemies, earthquakes, or the passage of time.



#### **Program Evaluation and Impacts**

The Zeytin project originally stemmed from a need in the rigid Turkish educational system that leaves little room to students for wide-spectrum interdisciplinary academic exposure with hands-on activities and little flexibility to teachers in designing creative courses. This gap is filled by non-formal education and therefore mostly unaccredited.

Even though the concept of liberal arts colleges and thus liberal education is foreign to modern Turkey, ancient ideas of open-ended inquiry, informed debate, and critical thinking were born in this region in ancient times. The embedded cultural diversity – a result of Turkey's being at both the geographic and historical crossroads of human history makes cultural awareness a part of everyday life in Turkey. Ege'de Atölye would like to become a center of excellence in designing and experimenting educational models specific to culture and location.

Some final words from the Program Director, Zeynep Delen:

"As the creator and director of the project, I think we achieved our goal in demonstrating a sample liberal education model and how it can be useful to rejuvenate faculty members, generate synergistic new ideas, and spark a student's interest in new fields and learning for learning's sake. It has the power to educate foreign participants about the rich Turkish culture while as the same time reconnecting Turks with their heritage."

#### Personal Impacts:

- A Year in the Life of an Olive Calendar produced by all the Zeytin workshop participants
- **Zeytin – A Scholarly Learning Initiative** presentation by Rich Blatchly AAC&U conference
- **Zeytin** *A Scholarly Learning Initiative* manuscript by Pat O'Hara, Christian Wenz, Meltem Turkov, Rich Blatchly and Zeynep Delen Chronicle of Higher Education
- The Secret Life of Olives Course for Non-Majors at Amherst College Pat O'Hara
- Book about Ancient Trees by Ulrike Muss
- Sparked in interest in combining archeology and computer science Albert Toledo
- UNESCO presentation about sustainability initiatives- by Zeynep Delen
- Olive and Sociology Research Project -- by Denis O'Hearn, Bilge Fırat, Meltem Türköz
- Collection of Olive Picking Stories by Meltem Türköz
- A visit to Catalonia Spain Olive Growers Esther Gelabert and Tariş
- Inspiration to write about the olive mill Esther Gelabert
- Interest in AFS intercultural programs by Satvet Köşklü

#### Other

- Invitation of Zeynep Delen by the Foça Council to Foça Festival to communicate with olive related guests in September
- Women's leadership conference
- Dissemination of Belianes Olive Mill Documentary

#### **References and Resources**

Program website: < <a href="http://www.egedeatolye.org">http://www.egedeatolye.org</a>>

Hülya Denizalp of Açık Radyo interviewed Zeynep Delen 5/20/2011

Zeytinagaci Magazine published an article about Zeytin

#### Use of Olive Biomass Fly Ash in the Preparation of Environmentally Friendly Mortars

Manuel Cruz-Yusta, Isabel Mármol, Julian Morales, Luis Sánchez *Environmental Science & Technology* **Article ASAP 7/17/11** 

International Symposium Proceedings 6-8 Mersin Turkey: Olive Oil and Wine Production in Anatolia during Antiquity/ Antik Cagda Anadoluda Zeytinyagi ve Sarap Üretimi; Mersin, Turkey 2008 (2010).

#### **Olive Picking Folks Songs**

Folk song 1 by Kilis, Gaziantep. Dialogic, http://www.youtube.com/watch?v=OVIU159W2fg&feature=related

Folk song 2 by Mugla Zeytin Dali Curuk Olur (The Olive Branch is Fragile) http://www.youtube.com/watch?v=79AHERQ1awM

Folk song 2 in the Turkish Classical Music tradition Emel Sayin (Zeytin Gozlum-My Olive Eyed One) http://www.musicdinle.net/emel-sayin-zeytin-gozlum-dinle.html

Folk song 4 by Nese Karabocek <a href="http://www.musicdinle.net/nese-karabocek-zeytin-gozlum-dinle.html">http://www.musicdinle.net/nese-karabocek-zeytin-gozlum-dinle.html</a>

Folk song 5 by Ezginin Gunlugu-Delice Zeytin (Crazy Zeytin) <a href="http://www.muzikce.net/3691/dinle-ezginin-gunlugu-delice-zeytin.html">http://www.muzikce.net/3691/dinle-ezginin-gunlugu-delice-zeytin.html</a>