

## GENEL TANIM / GENERAL DESCRIPTION

Ders Adı / Course Name	( Apitherapy-Treatment with Bee Products) / ( Apitherapy-Treatment with Bee Products)	
Ders Kodu / Course Code	9105035772023	
Ders Türü / Course Type		
Ders Seviyesi / Course Level	Second Cycle / Second Cycle	
Ders Akts Kredi / ECTS	8.00	
Haftalık Ders Saati (Kuramsal) / Course Hours For Week (Theoretical)	3.00	
Haftalık Uygulama Saati / Course Hours For Week (Objected)	0.00	
Haftalık Laboratuar Saati / Course Hours For Week (Laboratory)	0.00	
Dersin Verildiği Yıl / Year	1	
Öğretim Sistemi / Teaching System	Face to Face / Face to Face	
Eğitim Dili / Education Language	Turkish / Turkish	
Ön Koşulu Olan Ders(ler) / Precondition Courses	Yok	None
Amacı / Purpose	Bu dersin amacı, ekosistemde çok önemli görevleri olan arıların ürünleri ile tedavi hakkında önemli bilgiler edinmektir.	The aim of this course is to obtain important information about the treatment with the products of bees, which have very important roles in the ecosystem.
İçeriği / Content	<ul style="list-style-type: none"> <li>● Apiterapi ve tarihçesi</li> <li>● Çeşitli arı ürünleri hakkında genel bilgiler</li> <li>● Bal, tarihçesi, özellikleri, tedavi edici etkileri</li> <li>● Bal alerjisi</li> <li>● Delibal</li> <li>● Polen, arı ekmeği ve apiterapi</li> <li>● Arı sütü ve apiterapi</li> <li>● Propolis ve apiterapi</li> <li>● Arı (kovan) havası ve apiterapi</li> <li>● Arı sesi ve apiterapi</li> <li>● Arı venomu. Önemi ve alerjisi</li> <li>● Balmumu</li> <li>● Kozmetolojide arı ürünleri</li> </ul>	<ul style="list-style-type: none"> <li>● Apitherapy and its history</li> <li>● General information about various bee products</li> <li>● Honey, its history, properties, therapeutic effects</li> <li>● Honey allergy</li> <li>● Mad honey</li> <li>● Pollen, beebread and apitherapy</li> <li>● Royal jelly and apitherapy</li> <li>● Propolis and apitherapy</li> <li>● Bee air and apitherapy</li> <li>● Bee voice and apitherapy</li> <li>● Bee venom. importance and allergy</li> <li>● Beeswax</li> <li>● Bee products in cosmetology</li> </ul>
Önerilen Diğer Hususlar / Recommended Other Considerations	Yok	None
Staj Durumu / Internship Status	Yok	None
Kitabı / Malzemesi / Önerilen Kaynaklar / Books / Materials / Recommended Reading	Akçiçek E, Yücel B (2015). Arı ürünleri ve sağlık (Apiterapi). Sidas, İzmir. 228 s. Armon PJ (1980). The use of honey in the treatment of infected wounds. Trop Doct. 10:91 Basa B, Belay W, Tilahun A, Teshale A (2016). Review on Medicinal Value of Honeybee	Akçiçek E, Yücel B (2015). Arı ürünleri ve sağlık (Apiterapi). Sidas, İzmir. 228 s. Armon PJ (1980). The use of honey in the treatment of infected wounds. Trop Doct. 10:91

- Products: Apitherapy. *Advances in Biological Research* 10 (4): 236-247.
- Basim E, Basim H, Özcan M (2006). Antibacterial activities of Turkish pollen and propolis extracts against plant bacterial pathogens. *J Food Engin.* 77: 992-996.
- Bognadov S, Jurendic T, Sieber R, Gallmann P (2008). Honey for nutrition and health: A Review. *Am J Clin Nutr*, 27:677-689.
- Cooper RA, Molan PC, Harding KG (1999). Antibacterial activity of honey against strains of *Staphylococcus aureus* from infected wounds. *J Royal Soc Med.* 92: 283-285.
- Crane (1997). The past and present importance of bee products to man. *Bee products. Properties, Applications and Apitherapy.* 1-13.
- Çakıcı Ö (2017). Mad Honey. Is it useful or dangerous? *Immunotherapy Research Journal* 1:1-2.
- Doğanyığıt Z, Okan A, Kaymak E, Pandır D, Silici S (2020). Investigation of protective effects of apilarnil against lipopolysaccharide induced liver injury in rats via TLR 4/ HMGB-1/ NF-κB pathway. *Biomed Pharmacotherapy*, 125:109967.
- Garcia-Viguera C (1992). Composition of propolis from two different Spanish region. *Z Naturforsch* 47(7-8): 634-7.
- Guardia T (2022). Identifying the chemical compounds of beehive air. 1st International Beehive Air Therapy Conference
- Hegazi AG, Abd El-Hady K (2009). Influence of honey on the suppression of human low density lipoprotein (LDL) peroxidation (in vitro). *eCAM*, 6:113-121
- Hu TY, Sheu SC, Liaw ET, Wang TC, Lin CC (2005). Antioxidant activity and effect of *Pinus morrisonicola* on the survival of leukemia cell line U937. *Photomedicine* 12:663-669.
- Jae-Dong L, Hi-Joon P (2005). An overview of bee venom acupuncture in the treatment of arthritis. *eCAM* 2(1):79-84.
- Kumar M, Prakash S, Jose M Lorenzo R, Chandran D, Dhupal S, Dey A, Senapathy M et al. (2022). Apitherapy and Periodontal Disease: Insights into In Vitro, In Vivo, and Clinical Studies. 11, 823.
- Kurek-Gorecka A, Gorecki M, Rzepecka-Stojko A, Balwierz R, Stojko J (2020). Bee Products in Dermatology and Skin Care. *Molecules*, 25:556
- Mohammed AA, Kunugi H (2020). Apitherapy for Parkinson's Disease: A Focus on the Effects of Propolis and Royal Jelly. *Oxidative Medicine and Cellular Longevity*. <https://doi.org/10.1155/2020/1727142>
- Münstedt K, Mannle H (2020). Apitherapy for menopausal problems. *Archives of Gynecology and Obstetrics* 302:1495-1502.
- Münstedt K, Mannle H (2020). Seasonal allergic rhinitis and the role of apitherapy 48 (6):582-588.
- Nagai T, Sakai M, Inoue R, Inoue H, Suzuki N (2001). Antioxidative activities of some commercially honeys, royal jelly and propolis. *Food Chem.* 75(2): 240-244.
- Onbaşlı D, Yuvalı Çelik G, Kahraman S, Kanbur M (2019). Apiterapi ve İnsan Sağlığı üzerine etkileri. *Erciyes Üniversitesi Veteriner Fakültesi Dergisi* 16(1):49-56
- Özbek H. 1990. Bal Arısı (*Apis mellifera* L.) Zehiri. *Atatürk Üniv Zir Fak Der* 21(2): 84-100.
- Özdemir G, Ersöz E, Dilek NM (2021). Apiterapi ve Sağlık. *Black Sea Journal of Health Science* 4(2):168-174.
- Park S, Erdogan S, Hwang D, Hwang S, Han EH, Lim YH (2016). Bee venom promotes hair growth in association with inhibiting 5α-reductase expression. *Biol. Pharm. Bull.* 39, 1060-1068.
- Pehlivan T, Gül A (2016). Türkiye'de üretilen Keçiboynuzu, Kekik ve Sütleşen Ballarının Kimyasal Özellikler Chemical contents of Carob, Thyme and Euphorbia honeys produced in Turkey. *Journal of Agricultural Faculty of Mustafa Kemal University* 21(1), 48-56.
- Pereira PCM, Barraviera B, Burini RC, Soares AMVC, Bertani MA (1998). Use of honey as nutritional and therapeutic supplement in the treatment of infectious diseases. *The J.Venomous Anim.Toxins. Preliminary Report*,1,1-2.
- Prakash S, Bhargava H (2014). Apis cerana bee venom: It's antidiabetic and anti-dandru activity against malassezia furfur. *World Appl. Sci. J.* 32: 343-348
- Przybilla B, Rueff F (2010). Hymenoptera venom allergy. *JDDG* 8:114-129.
- Rios AM, Novoa ML, Vit P. (2001). Effects of extraction, storage conditions and heating treatment on antibacterial activity of *Zanthoxylum fagara* honey from, Cojedes, Venezuela.
- Basa B, Belay W, Tilahun A, Teshale A (2016). Review on Medicinal Value of Honeybee Products: Apitherapy. *Advances in Biological Research* 10 (4): 236-247.
- Basim E, Basim H, Özcan M (2006). Antibacterial activities of Turkish pollen and propolis extracts against plant bacterial pathogens. *J Food Engin.* 77: 992-996.
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- Crane (1997). The past and present importance of bee products to man. *Bee products. Properties, Applications and Apitherapy.* 1-13.
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- Doğanyığıt Z, Okan A, Kaymak E, Pandır D, Silici S (2020). Investigation of protective effects of apilarnil against lipopolysaccharide induced liver injury in rats via TLR 4/ HMGB-1/ NF-κB pathway. *Biomed Pharmacotherapy*, 125:109967.
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- Kumar M, Prakash S, Jose M Lorenzo R, Chandran D, Dhupal S, Dey A, Senapathy M et al. (2022). Apitherapy and Periodontal Disease: Insights into In Vitro, In Vivo, and Clinical Studies. 11, 823.
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	<p>Revolução Científica 11(5): 397-402</p> <p>Silici S (2019) Honeybee Products and Apitherapy. Turkish Journal of Agriculture - Food Science and Technology. 7(9): 1249-1262</p> <p>Szabat P, Poleszak J, Szabat M, Borenski G, Wojcik M, Milanowska J (2019). Apitherapy - the medical use of bee products. Journal of Education, Health and Sport. 9(8):384-396.</p> <p>Şengül F, Vatanssev H (2021) Overview of Apitherapy Products: Anti-Cancer Effects of Bee Venom Used In Apitherapy. International Journal of Traditional and Complementary Medicine Research 2(1): 36-48.</p> <p>Tu WC, Wu CC, Hsieh HL, Chen CY, Hsu SL (2008). Honeybee venom induces calcium - dependent but caspase-independent apoptotic cell death in human melanoma A 2058 cells. Toxicon 52: 318-329.</p> <p>Warui MW, Hansted L, Gikungu M, Mburu J, Kironchi G &amp; Bosselmann S (2019). Characterization of Kenyan honeys based on their physicochemical properties, botanical and geographical origin. International Journal of Food Science, 2932509</p> <p>Yonar ME, Yonar SM, Silici S. (2011). Protective effect of propolis against oxidative stress and immunosuppression induced by oxytetracycline in rainbow trout (<i>Oncorhynchus mykiss</i>). Fish Shelfish Immunol. 31(2): 318-325</p> <p>Yücel B. (2004) Apiterapi: Arı ürünlerinin insan sağlığı üzerindeki önemi. Ege Üniversitesi Tarımsal Uygulama ve Araştırma Merkezi. Çiftçi broşürü:56 Kasım-2004</p> <p>Yücel B, Açıkğöz Z, Bayraktar H, Seremet Ç. (2011). The effects of apilarnil (drone bee larvae) administration on growth performance and secondary sex characteristics of male broilers. J Anim Vet Adv. 10(17): 2263-2266.</p>	<p>Prakash S, Bhargava H (2014). Apis cerana bee venom: It's antidiabetic and anti-dandru activity against malassezia furfur. World Appl. Sci. J. 32: 343-348</p> <p>Przybilla B, Rueff F (2010). Hymenoptera venom allergy. JDDG 8:114-129.</p> <p>Rios AM, Novoa ML, Vit P. (2001). Effects of extraction, storage conditions and heating treatment on antibacterial activity of <i>Zanthoxylum fagara</i> honey from, Cojedes, Venezuela. Revolucao Cientifica 11(5): 397-402</p> <p>Silici S (2019) Honeybee Products and Apitherapy. Turkish Journal of Agriculture - Food Science and Technology. 7(9): 1249-1262</p> <p>Szabat P, Poleszak J, Szabat M, Borenski G, Wojcik M, Milanowska J (2019). Apitherapy -the medical use of bee products. Journal of Education, Health and Sport. 9(8):384-396.</p> <p>Şengül F, Vatanssev H (2021) Overview of Apitherapy Products: Anti-Cancer Effects of Bee Venom Used In Apitherapy. International Journal of Traditional and Complementary Medicine Research 2(1): 36-48.</p> <p>Tu WC, Wu CC, Hsieh HL, Chen CY, Hsu SL (2008). Honeybee venom induces calcium -dependent but caspase-independent apoptotic cell death in human melanoma A 2058 cells. Toxicon 52: 318-329.</p> <p>Warui MW, Hansted L, Gikungu M, Mburu J, Kironchi G &amp; Bosselmann S (2019). Characterization of Kenyan honeys based on their physicochemical properties, botanical and geographical origin. International Journal of Food Science, 2932509</p> <p>Yonar ME, Yonar SM, Silici S. (2011). Protective effect of propolis against oxidative stress and immunosuppression induced by oxytetracycline in rainbow trout (<i>Oncorhynchus mykiss</i>). Fish Shelfish Immunol. 31(2): 318-325</p> <p>Yücel B. (2004) Apiterapi: Arı ürünlerinin insan sağlığı üzerindeki önemi. Ege Üniversitesi Tarımsal Uygulama ve Araştırma Merkezi. Çiftçi broşürü:56 Kasım-2004</p> <p>Yücel B, Açıkğöz Z, Bayraktar H, Seremet Ç. (2011). The effects of apilarnil (drone bee larvae) administration on growth performance and secondary sex characteristics of male broilers. J Anim Vet Adv. 10(17): 2263-2266.</p>
Öğretim Üyesi (Üyeleri) / Faculty Member (Members)	Prof. Dr. Özlem ÇAKICI	Prof. Dr. Özlem ÇAKICI

### ÖĞRENME ÇIKTILARI / LEARNING OUTCOMES

1	Apiterapi ve tarihçesi hakkında bilgi sahibi olma	To have knowledge about apitherapy and its history
2	Çeşitli arı ürünleri (bal, polen, propolis, arı sütü, arı venomu) ve tedavi edici özelliklerini öğrenme	Learning about various bee products (honey, pollen, propolis, royal jelly, bee venom) and their therapeutic properties
3	Arı sesi ve kovan havasının apiterapik özelliklerini anlama	Understanding the apitherapeutic properties of bee sound and air
4	Kozmetolojide arı ürünlerinin faydalarını öğrenme	Learning the utility of bee products in cosmetology
5	Öğrenilen bilgiler ile arı ürünlerinin apiterapik özellikleri ile ilgili veri tabanını araştırabilme ve temel bir izleme araştırması tasarlayabilme	To be able to search the database about the apitherapeutic properties of bee products with the learned information and to design a basic follow-up research

### HAFTALIK DERS İÇERİĞİ / DETAILED COURSE OUTLINE

Hafta / Week					
1	Teorik Dersler / Theoretical	Uygulama	Lab	Öğretim Yöntem ve Teknikleri/Teaching Methods Techniques	Ön Hazırlık / Preliminary
	Apiterapi nedir ve tarihçesi hakkında bilgilendirme			Power Point Sunumu Makale, kitap	
	What is apitherapy and information about its history			PowerPoint presentation, article, book	
2	Teorik Dersler / Theoretical	Uygulama	Lab	Öğretim Yöntem ve Teknikleri/Teaching Methods Techniques	Ön Hazırlık / Preliminary
	Arı ürünlerini öğrenme			Power Point Sunumu Makale, kitap	
	Learning bee products			Power Point presentation, article, book	
3	Teorik Dersler / Theoretical	Uygulama	Lab	Öğretim Yöntem ve Teknikleri/Teaching Methods Techniques	Ön Hazırlık / Preliminary
	Bal, tarihçesi, özellikleri, tedavi edici etkileri			Power Point Sunumu Makale, kitap	
	Honey, its history, properties, therapeutic effects			PowerPoint presentation, article, book	
4	Teorik Dersler / Theoretical	Uygulama	Lab	Öğretim Yöntem ve Teknikleri/Teaching Methods Techniques	Ön Hazırlık / Preliminary
	Bal alerjisi			Power Point Sunumu Makale, kitap	
	Honey allergy			PowerPoint presentation, article, book	
5	Teorik Dersler / Theoretical	Uygulama	Lab	Öğretim Yöntem ve Teknikleri/Teaching Methods Techniques	Ön Hazırlık / Preliminary
	Delibal			Power Point Sunumu Makale, kitap	
	Mad honey			PowerPoint presentation, article, book	

	Teorik Dersler / Theoretical	Uygulama	Lab	Öğretim Yöntem ve Teknikleri/Teaching Methods Techniques	Ön Hazırlık / Preliminary
6	Polen, arı ekmeği ve apiterapi			Power Point Sunumu Makale, kitap	
	Pollen, beebread and apitherapy			PowerPoint presentation, article, book	
7	Arı sütü ve apiterapi			Power Point Sunumu Makale, kitap	
	Royal jelly and apitherapy			PowerPoint presentation, article, book	
8	Teorik Dersler / Theoretical	Uygulama	Lab	Öğretim Yöntem ve Teknikleri/Teaching Methods Techniques	Ön Hazırlık / Preliminary
	Arasınava				
	Midterm Exam				
9	Teorik Dersler / Theoretical	Uygulama	Lab	Öğretim Yöntem ve Teknikleri/Teaching Methods Techniques	Ön Hazırlık / Preliminary
	Propolis ve apiterapi			Power Point Sunumu Makale, kitap	
	Propolis and apitherapy			PowerPoint presentation, article, book	
10	Teorik Dersler / Theoretical	Uygulama	Lab	Öğretim Yöntem ve Teknikleri/Teaching Methods Techniques	Ön Hazırlık / Preliminary
	Arı (kovan) havası ve apiterapi			Power Point Sunumu Makale, kitap	
	Bee air and apitherapy			PowerPoint presentation, article, book	
11	Teorik Dersler / Theoretical	Uygulama	Lab	Öğretim Yöntem ve Teknikleri/Teaching Methods Techniques	Ön Hazırlık / Preliminary
	Arı sesi ve apiterapi			Power Point Sunumu Makale, kitap	
	Bee voice and apitherapy			PowerPoint presentation, article, book	

	Teorik Dersler / Theoretical	Uygulama	Lab	Öğretim Yöntem ve Teknikleri/Teaching Methods Techniques	Ön Hazırlık / Preliminary
12	Arı venomu, önemi ve alerjisi			Power Point Sunumu Makale, kitap	
	Bee venom. importance and allergy			PowerPoint presentation, article, book	
13	Balmumu			Power Point Sunumu Makale, kitap	
	Beeswax			PowerPoint presentation, article, book	
14	Kozmetolojide arı ürünleri			Power Point Sunumu Makale, kitap	
	Bee products in cosmetology			PowerPoint presentation, article, book	
15	Ödev ve Sunumların Rapor Edilmesi				
	Reporting homework's				
16	Final Sınavı				
	Final exam				

## DEĞERLENDİRME / EVALUATION

Yarıyıl (Yıl) İçi Etkinlikleri / Term (or Year) Learning Activities	Sayı / Number	Katkı Yüzdesi / Percentage of Contribution (%)
Ara Sınav / Midterm Examination	1	100
Toplam / Total:	1	100
Başarı Notuna Katkı Yüzdesi / Contribution to Success Grade(%):		40

  

Yarıyıl (Yıl) Sonu Etkinlikleri / End Of Term (or Year) Learning Activities	Sayı / Number	Katkı Yüzdesi / Percentage of Contribution (%)
Final Sınavı / Final Examination	1	100
Toplam / Total:	1	100
Başarı Notuna Katkı Yüzdesi / Contribution to Success Grade(%):		60

  

Etkinliklerinin Başarı Notuna Katkı Yüzdesi(%) Toplamı / Total Percentage of Contribution (%) to Success Grade:	100
Değerlendirme Tipi / Evaluation Type:	DDS

İŞ YÜKÜ / WORKLOADS

Etkinlikler / Workloads	Sayı / Number	Süresi (Saat) / Duration (Hours)	Toplam İş Yüğü (Saat) / Total Work Load (Hour)
Ara Sınav / Midterm Examination	1	1.00	1.00
Ara Sınav İçin Bireysel Çalışma / Individual Study for Mid term Examination	15	1.00	15.00
Bireysel Çalışma / Self Study	9	6.00	54.00
Derse Katılım / Attending Lectures	14	3.00	42.00
Final Sınavı / Final Examination	1	1.00	1.00
Final Sınavı için Bireysel Çalışma / Individual Study for Final Examination	1	20.00	20.00
Makale Kritik Etme / Criticising Paper	6	10.00	60.00
Okuma / Reading	14	3.00	42.00
Rapor Hazırlama / Report Preparation	1	10.00	10.00
Rapor Sunma / Report Presentation	1	3.00	3.00
<b>Toplam / Total:</b>	<b>63</b>	<b>58.00</b>	<b>248.00</b>

Dersin AKTS Kredisi = Toplam İş Yüğü (Saat) / 30.00 (Saat/AKTS) = 248.00/30.00 = 8.27 ~ / Course ECTS Credit = Total Workload (Hour) / 30.00 (Hour / ECTS) = 248.00 / 30.00 = 8.27 ~



PROGRAM VE ÖĞRENME ÇIKTISI / PROGRAM LEARNING OUTCOMES

Öğrenme Çıktıları / Learning Outcomes	Program Çıktıları / Program Outcomes						
	1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.1.7
1. Apiterapi ve tarihçesi hakkında bilgi sahibi olma / To have knowledge about apitherapy and its history	5	4	4	4	4	4	4
2. Çeşitli arı ürünleri (bal, polen, propolis, arı sütü, arı venomu) ve tedavi edici özelliklerini öğrenme / Learning about various bee products (honey, pollen, propolis, royal jelly, bee venom) and their therapeutic properties	4	5	5	5	5	5	5
3. Arı sesi ve kovan havasının apiterapik özelliklerini anlama / Understanding the apitherapeutic properties of bee sound and air							
4. Kozmetolojide arı ürünlerinin faydalarını öğrenme / Learning the utility of bee products in cosmetology							
5. Öğrenilen bilgiler ile arı ürünlerinin apiterapik özellikleri ile ilgili veri tabanını araştırabilme ve temel bir izleme araştırması tasarlayabilme / To be able to search the database about the apitherapeutic properties of bee products with the learned information and to design a basic follow-up research	5	5	5	5	5	5	5

Katkı Düzeyi / Contribution Level : 1-Çok Düşük / Very low, 2-Düşük / Low, 3-Orta / Moderate, 4-Yüksek / High, 5-Çok Yüksek / Very high