BÖLÜM

15

EMÜLGATÖRLER, STABİLİZATÖRLER, KIVAM ARTTIRICILAR, JELLEŞTİRİCİ MADDELER

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GİRİŞ

Genellikle yemden yararlanmayı artırmak, elde edilen hayvansal ürünlerin miktar ve kalitesini iyileştirmek, maliyeti düşürmek ve hayvan sağlığını korumak amacıyla kullanılan yem katkı maddeleri pazarı her geçen yıl büyümektedir. Teknolojik katkı maddeleri, duyusal katkı maddeleri, besin madde katkıları, zooteknik katkı maddeleri, koksidiyostatlar ve histomonostatlar olarak sınıflandırılan çeşitli yem katkı maddeleri piyasaya sunulmaktadır. Teknolojik katkı maddeleri yemlerin bozulmadan uzun süre saklanmasını sağlayan maddelerdir. Yem üretimi sırasında yemin fiziksel yapısını iyileştirmek veya stabilize etmek için kullanılırlar. Genellikle hayvansal üretim üzerinde doğrudan biyolojik bir etkiye sahip değildirler.

Teknolojik katkı maddeleri olarak sınıflandırılan emülgatörler; yemlerde iki veya daha fazla karışmayan fazın homojen bir karışımını oluşturmayı veya sürdürmeyi mümkün kılan maddelerdir. Bunlardan stabilizatörler, yem maddelerinin fiziko-kimyasal yapısını korumayı mümkün kılan kıvam arttırıcılar/ koyulaştırıcılardır. Yem maddelerinin viskozitesini artıran jelleştirici maddeler; jel oluşturarak yemlere doku kazandıran maddeler olarak işlev görmektedirler.

Emülgatörler ve/veya stabilizatörlerin rolünü açıklamak için "dağılan parçacıkların çökelmesini geciktiren", "yağ damlacıkları veya köpüklerin kremalaşma oranını azaltan", "dağılmış katı veya sıvı parçacıkların toplanmasını/ayrışmasını önleyen", "jelleşmiş gıdaların sinerezisini önleyen", "gıdayı koşullandıran veya stabilize eden" ve "yağ damlacıklarının birleşmesini geciktiren" gibi tanımlar kullanılmaktadır.

Gıdalara pürüzsüz ve tutarlı bir doku oluşturmak için stabilizatör, koyulaştırıcı ve jelleştirici maddeler eklenmektedir. Bu katkı maddelerinin çoğu, proteinler veya nişastalar gibi doğal kaynaklardan elde edilir, ancak aynı zamanda daha düşük maliyetlerle sentetik olarak da üretilirler. Lesitin, zamk, kazeinler, soya proteinleri, monogliseritler gibi doğal moleküller yüzey aktivitelerinden dolayı gıdalarda uzun yıllardır kullanılmaktadır. Stabilizatörler, kıvam artıcılar ve jelleştirici maddelere genellikle gıda hidrokolloidi adı verilir. Çoğu tatsız ve kokusuzdur. Gıda hidrokolloidlerinin koyulaştırma, jelleştirme, emülsifiye etme, stabilizasyon ve kristal oluşumunu kontrol etme gibi nitelikleri içeren birçok önemli işlevleri vardır.

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Tablo 2. Piliç yemlerine emülgatör takviyesi ile artan performans parametreleri

Emülgatör	Lipid kaynağı	Parametre
Globin	Soya yağı	YYO
Soya lesitini	Soya yağı	CA, GCAA, YYO, GYT
Lizolesitin	Kanatlı yağı, bitkisel artık yağ	YYO
	Donyağı	YYO
	Hayvansal yağ	CA, GCAA
	Soya yağı	YYO
Lizofosfolipid	Soya yağı	CA, GCAA, GYT, YYO
	Donyağı	GCAA, YYO
	Soya yağı, susam yağı	GCAA, YYO
Lizofosfatidilkolin	Soya yağı, kanatlı yağı, donyağı	GCAA
	Soya yağı, palm yağı	GCAA, YYO
Gliserol polietilen glikol risinolat	Soya yağı, hayvansal yağ	CA, GCAA, YYO
	Palm yağı	GCAA, YYO
Sodyum stearoil-2-laktilat	Donyağı	GYT, GCAA, YYO
	Donyağı, soya yağı	GCAA, GYT
1,3-diasilgliserol	Donyağı	GCAA, YYO
	Soya yağı	GCAA, YYO
Çoklu emülgatörler	Soya yağı	GCAA, YYO
	Donyağı	CA, GCAA, YYO, GYT

CA: Canlı ağırlık, GCAA: Günlük canlı ağırlık artışı, GYT: Günlük yem tüketimi, YYO: Yemden yararlanma oranı

potansiyeli ile piliç performansından ödün vermeden düşük enerjili rasyonlara katı ve sıvı yağların dahil edilmesine ve böylece daha fazla ekonomik kazanç elde edilmesine olanak sağlayabilir.

Farklı lipid kaynakları ve emülgatörlerle piliçler üzerinde yürütülen bazı çalışmalar ve performanstaki iyileşmeler Tablo 2'de görülmektedir.

Emülgatör kullanımının piliçlerde ağırlık artışı ve yem dönüşüm oranı üzerindeki etkilerini ölçmek için yapılan bir meta-analiz çalışmasında 25 araştırma ve 14643 pilicin verisi değerlendirilmiş, emülgatörlerin ağırlık artışını 1.62 g/gün arttırdığı ve yem dönüşümünü 0.04 g azalttığı gözlenmiştir. Katkı maddelerinin etkisinin piliçlerin cinsiyetinden, lipid kaynağı ve konsantrasyonundan, katkı maddesi tipi ve konsantrasyonundan, yemin enerji seviyesinden ve piliç hatlarından etkilendiği de belirlenmiştir.

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