Bölüm 3

GIDA ÜRÜNLERİNDE BOZULMALARA NEDEN OLAN PATOJEN MİKROORGANİZMALARIN İNAKTİVASYONUNDA OZON UYGULAMALARININ ETKİSİ

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GİRİŞ

On dokuzuncu yüzyılın ortalarında keşfedilmiş bir gaz olan ozon (O_3), oksijenin doğada yüksek enerjili elektrik akımına ve ultraviyole ışınlarına maruz kalması sonucunda oluşan, mezomerik durumların varlığı nedeniyle dinamik olarak kararsız yapıda üç oksijen atomundan oluşan bir moleküldür (1). Doğada, güneşten gelen mor ötesi ışınların atmosferdeki oksijeni parçalayarak ozon moleküllerine çevirmesi sonucu oluşmaktadır (2). Ozon, atmosferin üst tabakalarında (troposfer, stratosfer) üretilen ve havadan daha ağır olduğu için yerçekiminin etkisi ile dünyaya doğru inerken kirli atıklarla reaksiyona girerek havayı temizleyen bir gazdır. Atmosferdeki ozon, Dünya'daki yaşamı korumak için gerekli kimyasal ve fiziksel özelliklere sahiptir. Stratosferik ozon (15-65 km), 290 nm'den daha yüksek dalga boyuna sahip en zararlı ultraviyole (UV) radyasyonunu tutmaktadır (3). Fotokimyasal reaksiyonlar nedeniyle yer seviyesindeki ozondaki artışlar, artan azot monoksit ve azot dioksit (NO_x) ve uçucu organik bileşikler (VOC'ler) emisyonları ile doğrudan ilişkilidir. Ozonun foto ayrışması, atmosferik hidroksil radikallerinin birincil kaynağıdır (4).

Ozon konsantrasyonu güneş ışığına bağlı olarak değişim göstermektedir. Güneş ışığı yoğunluğuyla maksimuma ulaşır ve ardından azalmaktadır. Oda sıcaklığında gaz halinde bulunan ozon, renksizdir ve kendine has karakteristik bir

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ozon uygulamalarında, insanların ozon dozu ve maruz kalma süresi konusunda kısıtlamalar uygulanmalı ve gelecekteki çalışmalarda dikkate alınmalıdır.

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