TOPRAK VE SULAMA SUYUNDA
ANALİZ SONUÇLARININ DEĞERLENDİRİLMESİ

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Toprak ve Sulama Suyunda Analiz Sonuçlarının Değerlendirilmesi

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Önsöz

Toprak analiz yöntemleri coğrafi bölgelere ve toprak özelliklerine göre değişkenlik gösterir. Bu nedenle, toprağın fiziksel, kimyasal ve biyolojik özelliklerine ilişkin parametreler farklı iklim ve bölgelerde bitki yetiştirilerek arazi koşullarında kalibre edilmesi gerekir. Bu kalibrasyon çalışmalarından sonra hangi koşullarda en iyi verimin alındığı değerler veya değer aralıkları tespit edilmelidir. Tespit edilen en uygun değerlerin altında ya da üstündeki aralıklarda bitkisel ürün miktarında azalmaların olacağı unutulmamalıdır. Bitkisel ürün miktarının azalma gösterdiği koşullar giderildiği takdirde bitkisel ürün miktarında artışlar sağlanabilecektir.

Toprak analizi sonucunda ölçülen pek çok parametrelere ilişkin değerler düşük, orta, iyi ve yüksek şeklinde yorumlanır. Bu yorumlama sayesinde arazideki bazı problemler tespit edilebilir. Arazinin ıslah edilmesi, gübre ihtiyacının karşılanması, sulama suyundan kaynaklanan problemlerin çözümü ve diğer sorunların giderilmesi için toprak ve sulama suyu analiz sonuçlarının doğru bir şekilde yorumlanması son derece önemlidir.

Doğru ve güvenilir toprak analiz sonuçları elde edebilmek için toprak numunesi araziden usulüne uygun bir şekilde alınmalıdır. Her bir numune, tüm alanı veya belirtilen numune alma birimini temsil etmelidir. Toprak analizlerini zaman içerisinde karşılaştırabilmek ve arazi yönetiminde doğru kararlar verebilmek için yorumlama bilgisine ihtiyaç vardır. Toprak analiz sonuçlarının doğru bir şekilde belirlenip, değerlendirilebilmesi için toprak örneklemesinin amaç ve yönteme uygun bir şekilde yapılması gerekir. Gerekli durumlarda örneklerin karşılaştırmasına imkân sağlayabilmek amacıyla alındığı yer ve derinliğin aynı olmasına dikkat edilmelidir.

Bu kitapta toprak örneklerinin alınması ve analize hazırlanması ile toprakların bazı fiziksel ve kimyasal analiz sonuçlarının değerlendirilmesi hakkında bilgiler verilmiştir. Ayrıca, toprağın aşınabilirlik ve erozyon riski indeksleri ve toprak kirliliği yönünden ağır metal içerikleri yorumlanmıştır. Bununla birlikte, sulama suyu kalite kriterlerinin değerlendirilmesine ilişkin bilgiler sunulmuştur.

Kitabımızın tarım sektörü ve çalışanlarının yanı sıra, toprak - su analiz laboratuvarı ve Devlet Su İşleri çalışanlarına, Ziraat Mühendisliği'nde okuyan öğrencilere ve araştırmacılara faydalı olması dileğiyle…

Yazarlar

Nisan-2022

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6.2.4.14. Sulama sularında toksik organik maddeler

Toksik organik maddeler olarak listelenmiş 100'den fazla bileşiğin suda bulunduğu literatürlerde belirtilmiştir (Davis, 2010; Tchobanoglous ve ark., 2003). Bu bileşikler insektisitler, pestisitler, çözücüler, deterjanlar ve dezenfektanları içerir (Davis, 2010; Tchobanoglous ve ark., 2003; DeZuane, 1997). Bu toksik organik maddeler suda doğal olarak bulunmayıp, genellikle insan aktiviteleri sonucu suya karışırlar. Toksik organik madde düzeyleri gaz kromatografisi (GC), yüksek performanslı sıvı kromatografisi (HPLC) ve kütle spektrometresi gibi oldukça karmaşık enstrümental yöntemlerle ölçülürler (APHA, 2005).

6.2.4.15. Sulama sularında radyoaktif maddeler

Sudaki potansiyel radyoaktif madde kaynakları nükleer santrallerden, endüstrilerden veya radyoaktif kimyasallar kullanan tıbbi araştırmalardan ve uranyum cevherleri ile diğer radyoaktif materyallerin madenciliğinden kaynaklanan atıkları içerir Davis, 2010; DeZuane, 1997). Radyoaktif maddeler bozunmaya uğradıklarında alfa, beta ve gama ışını yayarlar (Skeppström ve Olofsson, 2007). İnsanların ve diğer canlıların radyasyona maruz kalması canlı dokularda geneti değişikliklere ve somatik rahatsızlıklara neden olabilir (Skeppström ve Olofsson, 2007; Cothern, 2014).

Su kalitesi uygulamalarında kullanılan radyoaktivite birimi litre başına pikokuridir (pCi/L); 1 pCi, dakikada parçalanan yaklaşık iki atoma eşdeğerdir. Bunu ölçmek için birçok karmaşık enstrümental yöntem mevcuttur (Cothern, 2014).

6.2.4.16. Sulama sularında mikrobiyolojik parametreler

Havelaar ve ark. (2001), pişirilmeden tüketilen mahsullerin sulanmasında kullanılan atık sular için 1000/100 mL'den daha düşük bir maksimum fekal koliform seviyesi önermişlerdir. Ancak araştırıcılar, hasattan en az 2 hafta önce sulamanın durdurulması gerektiğini bildirmişlerdir. 7.42/100 mL fekal koliform sayımına sahip arıtılmış atık suların, sulama amacı ile kullanımı güvenli kabul edilir.

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Quart (qt)	0,9463	Litre
Quart	946	milimetre
qt/A	2,3385	L/ha
qt/A	0,7346	oz/1.000 ft^2
qt/100gal	2,5	ml/L
metrik ton	2,205	lb
metrik ton	1.000	kg
Yarda (yd)	91,44	santimetre
Yarda	0,9144	metre
Yarda	914,4	milimetre
yd^2	0,836	m^2
yd^3 (kübik yarda)	27	ft^3
yd^3	46,656	in^3
yd^3	0,7645	m^3
yd^3	765	L

(Dönüştürülecek birim x Çarpım değerleri = Elde edilen birim

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