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A. Uluslararası hakemli dergilerde yayımlanan makaleler

Bellitürk, K., N. Hınıslı, A. Adiloğlu, 2017. The Effect of Vermicompost, Sheep Manure, and Cow Manure on Nutrition Content of Curly Lettuce (*Lactuca sativa* var.). Fresenius Environmental Bulletin (FEB), 26 (1a): 1116-1120, Germany.

The main purpose of this study is to assess the effect of different concentrations of vermicompost, sheep manure, and cow manure on curly lettuce crop nutritional content and yield. This study was conducted using random experimental design in greenhouse conditions. The three amendments were incorporated into 2500 gr of topsoil from a wheat field in the following concentrations: 1 % (25 gr), 3 % (75 gr), 5 % (125 gr) and 7 % (175 gr). It was observed that the vermicompost had a significant effect on the germination rate. In general, application of sheep manure resulted in higher nutrition content of the plant. However, applications of cow manure resulted in higher levels of N uptake. The N content of curly lettuce increases in a linear manner reaching a high of 3.608 % with an application rate of 7 % cow manure.

Key words: Vermicompost, Sheep Manure, Cow Manure, Curly Lettuce.

Boyras Erdem, D., S. Yılmaz, 2017. The Effect of Coal Ash Practices on Heavy Metal Content in the Soil. Fresenius Environmental Bulletin. Volume 26, No. 10/2017: 6121-6126.

The objective of this study is to define whether the ash, which is formed after burning of lignite coal, can be used as soil regulator in agricultural lands and to determine its doses if it has applicable value. A randomized experimental design with three replications was used with two different soil textures, being clay and sandy loam, and four different ash dosages (0, 5, 15 and 20 %) are taken into consideration. As a result, it is defined that coal ash within two different soil textures and having four different doses form heavy metal pollution according to existing regulations in terms of Ni, Zn, Cd, Pb, Hg, Cr, Sn and Cu elements. However, 15 and 20 % affected the increase in Cr amount while the amount applied as 20 % affected increase of Ni and Cu values to sandy loam soil texture. More than 5 % coal ash is not recommended as it increases heavy metals on soils. With the usage of coal ash, which is processed as waste material in agriculture; prevention of environmental pollution, savings in natural resources are expected.

Key words: Coal ash, soil pollution, heavy metal, soil conditioner.

Boyras Erdem, D., 2017. Classification of the Soils Formed in Toposequence Kayı and Aydınpınar Streams (Tekirdag) and Classes of Suitability to Agricultural Uses. Agronomy Research, 15(2): 329–343.

The soils formed in the vicinity of Kayı and Aydınpınar streams were investigated in

transects formed toposequence splitting vertically towards the coastal line of Thrace region. On the characteristic points of topography formed by the Kayı and Aydınpınar streams, five soil profiles were described, the two on the Oligocene marine deposits, the two on side stream creeks and the one on the alluvial bed representing low land. The morphological, physical and chemical properties of the samples taken from these profiles according to the genetic horizon principle were determined. The classification of these soils formed in the toposequence relationship and their suitability to various plants varieties were determined. The 4th profile in subgroup of Typic Xerofluvent were formed in alluvial land, The 2nd profile in subgroup of Calcic Haploxerept, 1st, 3rd and 5th profiles in subgroup of Typic Haploxerept were classified. The soil formed in a toposequence is different for suitability of plant cultivation varies. KA1, KA2 and KA5 soils are highly suitable for grass families expect maize and sudan grass while KA3 soil is medium suitable for grass families. KA1 and KA2 soils (expect soybean) are highly suitable, KA3 (expect alfalfa and sainfoin) and KA5 (expect alfalfa) soils are medium suitable and KA4 soil is marginal suitable for legume plants.

Key words: Soil genesis, toposequence, entisols, inceptisols.

Karaman, M.R., M. Turan, A. Horuz, M.Ş. Tüfenkçi, A. Adiloğlu. 2017. Interactive Effects of Boron and Humic Acid on the Growth and Nutrient Status of Maize Plant (*Zea mays* L.). International Journal of Plant and Soil Science, 19 (2): 1-9.

Development of the methods decreasing boron (B) toxicity to agricultural crops is a high priority. The use of alternative organic material sources such as leonardite based humic substances (H.A.) could be used to control B balance in soils. For this aim, a pot experiment, based on a completely randomized design with three replications, was conducted using the soil of calcareous ustochrepts. In the research, maize variety of ADA-9510 (*Zea mays* L.), which was obtained from Central Anatolia Region, was used. In the experiment, leonardite based humic substance (12 % humic acid) at the levels of 0, 60, 120 mg kg⁻¹ were used as humic material source, which was developed by Turkish Coal Corporations Foundation. Boron fertilizer at the levels of 0, 10, 20 and 30 mg B kg⁻¹ were used in the form of H₃BO₃. The plants were harvested after 56 days, and dry weights in top of maize plants were recorded. Macro and micro nutrient concentrations of the plants were also determined. Dry matter yields of maize plants were significantly affected by the applications of H.A. and B fertilizer, whereas dry matter yield was decreased by the application of higher B at the rate of 30 mg kg⁻¹ without H.A. application. Thus, results of this study clearly showed that there was a close synergism between the H.A. and B applications with regard to B toxicity tolerance of maize plants. The maximum dry matter yields of 50.71 and 51.09 g pot⁻¹ were obtained by the applications of 20 mg B kg⁻¹ together with H.A. applications at the rates of 60 and 120 mg kg⁻¹, respectively. Depending on H.A. applications, B contents of maize plants varied between 32.18 and 35.02 mg kg⁻¹.

Key words: Maize plant, humic acid, leonardite, boron fertilizer, boron toxicity.

Sarı, H., 2017. The Effect of Some Soil Characteristics oil The Hydraulic Conductivity of Soil in Tekirdağ Province. Alinteri Dergisi, 32 (2): 95-103.

In this study, the factors that affect hydraulic conductivity of the soil and their significance was examined. As a field of study, Tekirdağ province was chosen, and sample points were determined by coinciding corine belonging to this city, land use, geology and soil maps in Arcmap program. Samples were collected from 53 different points (Total 187 samples). Samples were taken from 4 different depths (0-30, 30-60, 60-90, 90-120 cm) from 0 to 120 cm and then they were analysed by physically and chemically. Hydraulic conductivity measurements were made with Constant Level Permeability device in the laboratory, and the results were figured out according to Darcy's Law. Statistical analysis of the results were made with SPSS and MSTAT-C software programs. Statistically the following results were reached: significant relations were found between hydraulic productivity and clay, bulk density at negative and 1% level; significant relations were found between hydraulic productivity and sand, specific weight and porosity at positive and 1% level; insignificant positive relations were found between hydraulic productivity and silt, organic matter; insignificant negative relations were determined between hydraulic and lune. pH, salt; and significant relations at 1% level were found in the interactions made between hydraulic productivity and land use.

Key words: Hydraulic conductivity, texture, permeability, Tekirdağ.

Solmaz, Y., A. Adiloğlu, 2017. Determination of Nutritional Status of Walnut Orchards by Leaf Analysis in Tekirdağ Region. Tekirdağ Ziraat Fakültesi Dergisi, 14 (1): 88- 92.

This study was conducted to determine the nutritional status of the walnut orchards leaf sample analysis in Tekirdağ region. For this purpose, 46 leaf samples, which were taken from 44 different walnut orchards located in 32 different villages in Çorlu, Saray, Ergene, Kapaklı, Marmara Ereğlisi, Muratlı, Hayrabolu, Malkara, Şarköy, Çerkezköy Districts and were analyzed. By comparing the results of the leaf samples analysis with the nutrient status limits of the investigated orchards the nutrition status have been studied and determined. According to the results, 84.78% N, 4.39% P, 4.35% K, 2.18% Ca, 4.35% Mg, 4.35% S, 2.18% Fe, 8.69% Cu, 65.21% Zn and 4.35% Mn deficiency were determined. On the other hand, 15.22% N, 89.13% P, 95.65% K, 84.78% Ca, 95.65% Mg, 91.30% S, 97.82% Fe, 89.3% Cu, 34.79% Zn and 84.78% Mn were determined sufficient in leaf samples and 6.58% P, 13.04% Ca, 2.18% Cu and 10.87% Mn were found excess level in leaf samples.

Key words: Tekirdağ, walnut, nutrient element, leaf analysis.

B. Uluslararası bilimsel toplantılarda sunulan ve bildiri kitabında (Proceedings) basılan bildiriler

Adiloğlu, A., Y. Cerit, M.R. Karaman, Y. Solmaz, A. Korkmaz, 2017. An Investigation of Irrigation Waters Quality Used for Vegetables Irrigation in Hafik District, Sivas Province. 2nd International Balkan Agriculture Congress, Abstract Book, p: 524, 16- 18 May, Tekirdağ.

The aim of this research was to determine the water quality of irrigation waters used for vegetables irrigation in Hafik district, Sivas province. For this purpose, irrigation water samples were taken from 12 different irrigation water sources in may, june, july, august and september months and total 60 water samples collected in 2014 year, Hafik district, Sivas. According to the analysis results, pH values of irrigation water samples were between 7.12 and 9.18 and these values were determined neutral, slightly alkaline and strong alkaline. EC values of water samples were between 185 and 501 $\mu\text{mhos/cm}$ and these values were evaluated little salty and middle salty classes. Sodium Absorbption Ratio (SAR) of water samples were between 0.96 and 3.78. Residual Sodium Carbonate (RSC) values were obtained between 0.00 and 6.01 me/L and Precipitation Index (PI) values of all irrigation water samples were determined positive (+). As a result, according to the USA Salinity Laboratory Classification irrigation water samples classified C1-S1 and C2S1 classes. Therefore, it should be attention sodium damage during the irrigation season.

Key words: EC, water quality, RSC, SAR, PI.

Adiloğlu S., K. Bellitürk, Y. Solmaz and A. Adiloğlu, 2017. The Effect of Increasing Dose Gytija Application on Some Nutrient Element Contents of Triticale (*Triticum secale* L.) Plant. 2nd International Balkan Agriculture Congress, Abstract Book, p: 539, 16- 18 May, Tekirdağ.

This research was done to determine effect of gytija application on some nutrient element contents of triticale (*Triticum secale* L.) plant. For this purpose, a pot experiment was done in greenhouse conditions. Five gytija (I. dose: 0 %, II. dose: 4 %, III dose: 8 %, IV dose: 12 % and V. dose: 16 % (w/w) doses were applied to the soil samples and pots were incubated 30 days. Triticale plants were harvested 60 days after planting. Some macro and micro nutrient element (N, P, K, Ca, Mg, Fe, Cu, Zn, Mn and B) contents of plant samples were determined. According to the analyzing results, average of three replications, total nitrogen (N) (1.89 %, 2.65 %, 2.92 %, 3.56 and 4.42

%), phosphorus (P) (0.33 %, 0.51 %, 0.57 %, 0.60 and 0.71 %), potassium (K) (2.03 %, 2.51 %, 2.97 %, 3.11 and 3.30 %), calcium (Ca) (0.76 %, 1.02 %, 1.10 %, 1.23 and 1.28 %) and magnesium (Mg) (0.19 %, 0.28 %, 0.30 %, 0.38 and 0.47 %) were determined, respectively. Some micro element (Fe, Cu, Zn, Mn and B) contents of triticale plant, iron (Fe) (39.63, 56.74, 72.02, 89.55 and 102.41 mg kg⁻¹) copper (Cu) (4.87, 6.12, 9.67, 12.70 and 27.01 mg kg⁻¹), zinc (Zn) (24.10, 33.70, 42.98, 50.21 and 64.43 mg kg⁻¹) Mn (28.66, 35.40, 39.60, 58.13 and 64.75 mg kg⁻¹) and boron (B) (4.86, 5.29, 9.90, 12.57 and 12.45 mg kg⁻¹) were determined, respectively. As a result, some macro and micro nutrient element content of triticale plant increased with increasing dose application of gyttja to the soil.

Key words: Gyttja, macro element, micro element, triticale.

Akdemir, B., C. Sağlam, K. Bellitürk, Z. Makaracı, A.Y. Uruşan, E.S. Atar, 2017. Effect of Spatial Variability on Fertiliser Requirement of Olive Orchard Cultivated For Oil Production. International U.A.B.–B.EN.A. Conference - Environmental Engineering And Sustainable Development, 25-27 May 2017, Book of Abstract, p:210, Alba Iulia, Romania.

Aim of this research is to determine effect of spatial variability of soil texture, pH, salt, and plant nutrient contents of soil and leaves on fertiliser requirement of an oil olive orchard which has 102 olive trees. Soil and leaf samples were taken from 29 locations to determine spatial variability. Soil texture, pH, salt, lime, organic matter, nitrogen (N), phosphorous (P), potassium (K), calcium (Ca), magnesium (Mg), iron (Fe), copper (Cu), zinc (Zn) and manganese (Mn) amounts were determined from soil samples that were taken from 0-30 cm and 30-60 cm soil depths. N, P, K, Ca, Mg, Fe, Cu and Mn were determined from leaf samples. When results were evaluated; N, P, K, Ca and Cu contents had optimum values. But Fe, Mn and Zn were found in deficiency levels. Fertiliser requirements for variable rate fertilisation were between 0-0.76 kg/tree for N, 0–0.192 kg/tree for P, and 0–5.22 kg/tree for K. Fertiliser requirement for fixed rate was determined 0.75 kg/tree for nitrogen, 0.275 kg/tree for phosphorous and 1.5 kg/tree for potassium. Required N, P and K values converted to commercial fertiliser forms as urea, ammonium nitrate, and potassium sulphate and triple super phosphate.

Key words: olive, precision farming, spatial variability, variable rate fertilisation.

Bellitürk, K., S. Adiloğlu, Y. Solmaz, A. Adiloğlu, 2017. The Effect of Gyttja Application on Some Chemical Properties of the Soils. 2nd International Balkan Agriculture Congress, Abstract Book, p: 540, 16- 18 May, Tekirdağ.

This research was done to determine the effect of gyttja application on some chemical

properties of agricultural soils. For this purpose, a pot experiment was done with three replications in greenhouse conditions. Five gyttja (I. dose: 0 %, II. dose: 4 %, III dose: 8 %, IV dose: 12 % and V. dose: 16 % (w/w) were applied to the soil. Then 90 days after some chemical properties of the soil samples were determined. According to the results, pH value of soil samples, average of three replications, were 7.40, 7.37, 7.32, 7.33 and 7.30, respectively for increasing doses of gyttja. Available phosphorus (P) (9.91, 10.03, 10.75, 11.03 and 11.87 kg P₂O₅/da), exchangeable potassium (K) (51.20, 51.72, 52.45, 52.92 and 53.79 kg K₂O/da), exchangeable calcium (Ca) (1.80, 1.87, 1.94, 2.06 and 2.09 %) and exchangeable magnesium (Mg) (0.28, 0.30, 0.30, 0.36 and 0.36 %) were determined, respectively. Organic matter amount of soil samples 1.08, 1.12, 1.25, 1.84 and 2.13 % were obtained, respectively. As a result, some macro nutrient element contents of the soil samples increased and pH value decreased with gyttja application to the soil samples.

Key words: Gyttja, macro nutrient element, soil, organic matter.

Boyras Erdem, D., 2017. Classification of the Soils Formed in Toposequence Kayı and Aydınpınar Streams (Tekirdağ) and Classes of Suitability to Agricultural Uses. BSE 2017. 8th International Conference Biosystems Engineering, 2017. Book of Abstracts. P. 16. 11-13 May 2017 Tartu, Estonia.

The soils formed in the vicinity of Kayı and Aydınpınar streams were investigated in transects formed toposequence splitting vertically towards the coastal line of Thrace region. On the characteristic points of topography formed by the Kayı and Aydınpınar streams, five soil profiles were described, the two on the Oligocene marine deposits, the two on side stream creeks and the one on the alluvial bed representing low land. The morphological, physical and chemical properties of the samples taken from these profiles according to the genetic horizon principle were determined. The classification of these soils formed in the toposequence relationship and their suitability to various plants varieties were determined. The 4th profile in subgroup of Typic Xerofluvent were formed in alluvial land, The 2nd profile in subgroup of Calcic Haploxerept, 1st, 3rd and 5th profiles in subgroup of Typic Haploxerept were classified. The soil formed in a toposequence is different for suitability of plant cultivation varies. KA1, KA2 and KA5 soils are highly suitable for grass families expect maize and sudan grass while KA3 soil is medium suitable for grass families. KA1 and KA2 soils (expect soybean) are highly suitable, KA3 (expect alfalfa and sainfoin) and KA5 (expect alfalfa) soils are medium suitable and KA4 soil is marginal suitable for legume plants.

Key words: Soil genesis, toposequence, entisols, inceptisols.

Sarı, H., D. Boyraz Erdem, 2017. Assessment of Chemical Properties of The Soils In The Catena Which Forms Tekirdağ Değirmenaltı-Muratlı Intersection Ringroad.

SEAB2017. 3rd International Symposium on EuroAsian Biodiversity. 05- 08 July 2017. Belarus. P:276.

In this study, the chemical composition of Inceptisol, Entisol and Vertisol type soils in the catena established from the İstanbul entrance of Tekirdağ ringroad to Bağlar district and the Muratlı crossroad have been investigated. For determining locations of model profiles, 1 / 100.000 and 1 / 25.000 scaled Tekirdağ Land Soil Inventory topographic maps which were produced by the General Directorate of Soil Water were used. After detailed field observations ten points were chosen to extract soil properties and they were described and sampled based on the genetic horizon designations. Among the sampled soils, Ca, Mg, Na, K and CEC (Cation Exchange Capacity), Organic matter, lime, total N and salt; available Fe, Mn, Zn, Cu are determined as the chemical parameters. As results, the pH of the soils were generally neutral, the salinity problem was not detected, the scale of the lime was generally less calcified, organic matter was detected moderately and less. Na, Fe and Mn values in Vertisol type soils and CEC, N, Ca, Mg, K, Cu, and Zn values in Inceptisol type soils were observed as lowest values. The highest values were observed for all elements in Inceptisol type soils.

Key words: Chemical composition, Soils, Catena, Tekirdağ.

Solmaz, Y., A. Adiloğlu, 2017. Determining Boron (B), Molybdenum (Mo) and Sodium (Na) Nutritional Status of Walnut Orchards in Tekirdağ Province by Leaf Analysis. 2nd International Balkan Agriculture Congress, Abstract Book, p: 542, 16- 18 May, Tekirdağ.

This study was conducted to determine the B, Mo and Na nutritional status of walnut orchards in Tekirdağ province by leaf analysis. For this aim leaf samples taken from 46 different orchards in all walnut grown districts at Tekirdağ were analysed. The results were compared with the critical limit values for each element and nutritional problems of walnut have tried to be determined. According to the results of leaf analysis, Molybdenum (Mo) element was found insufficient in 15 %, sufficient in 26 % and high in 59 %; Boron (B) element was determined sufficient in 93 % and high in 7 %; Sodium (Na) element was identified sufficient in 59 % and high in 41 % of leaf samples.

Key words: walnut, nutrient element, leaf analysis, Tekirdağ.