

Soil Map of Marathwada Region MH

198 + 75 Soil Profile Data

Location : 17°35' to 20°40' N latitude
74°40' to 78°15' E longitude

Height : 300 to 900 meter MSL

Mean annual rainfall ranges
from : 510 to 1131 mm

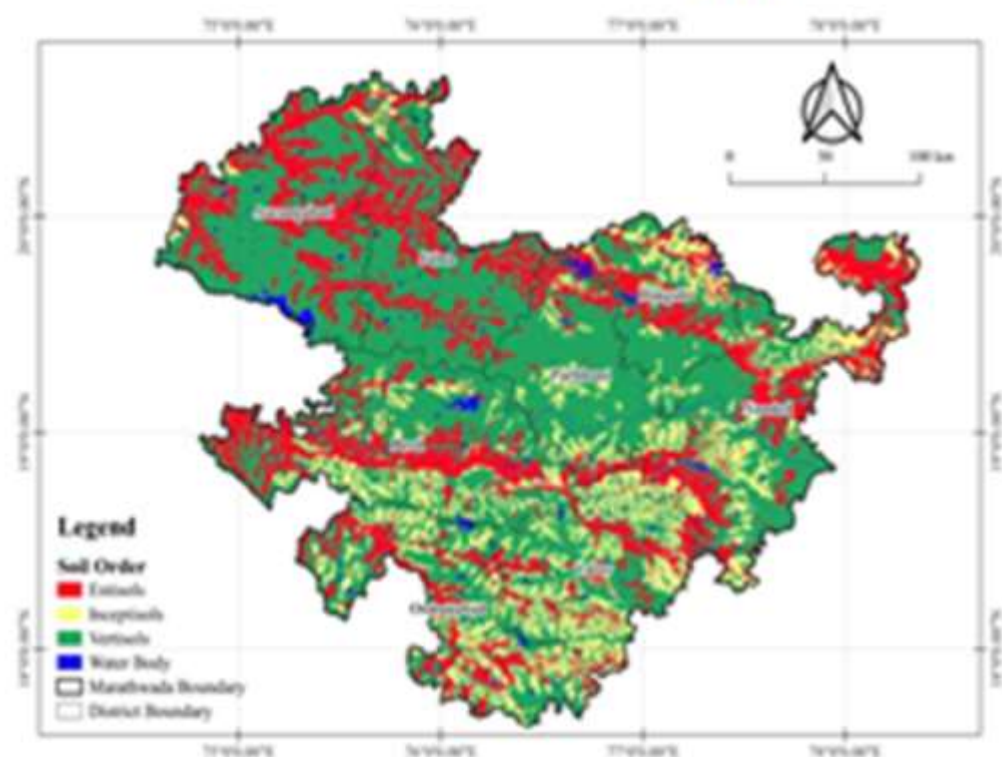
Entisols : 35.68 % (22.2%*)

Inceptisols : 13.68 % (64.8%*)

Vertisols : 46.74 % and (13%*)

Mean maximum temperature : 32.7°C

Mean minimum temperature : 18.1°C



Technology Recommendation from Dept. Of Soil Science -2020

Project Title

Effect of tank silt application on soil quality, growth, uptake and yield of soybean under Inceptisol (*TypicHaplustepts*) soils of Agriculture College Farm, Latur.

Contributing Scientists

P.H. Vaidya, B.S. Indulkar, Syed Ismail, Miss. P.D. Patil.
And Adkine S.A

Recommendations approved:

In Inceptisols of Marathwada region, in order to obtain maximum yields, monetary return from *kharif* soybean and for the improvement in soil properties application of recommended dose of fertilizer i.e. 30: 60:30 kg N,P₂O₅ and K₂O along with tank silt @ 5 t ha⁻¹ + FYM @ 2.5 t ha⁻¹ Or tank silt @ 10t ha⁻¹with RDF is recommended.



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Technology Recommendation from Dept. Of Soil Science -2021

Project Title

Soil Site Suitability Evaluation of Tamarind Growing Soil of Marathwada Region Maharashtra

Contributing Scientists

P.H.Vaidya, Zade S.P.,Shinde V.N.,Syed Ismail & M.K Ghode

Recommendations approved:

: Soil Contatin CaCO_3 less than 15 per cent very deep soil Vertisols (Typic Haplusters) followed by Moderetly deep soil Inceptions (Typic Haplusters) select for higher production of Tamarind in Marathwada region Maharashtra. If the calcium carbonates greater than 15 per cent (15 to 25 %), application of FYM and protective irrigation for higher yield of tamarind.



शिफारस: मराठवाडयामध्ये चिंचेचे अधिकाधिक उत्पादन घेण्याकरिता जमिनीमध्ये मुक्त चुन्याचे प्रमाण १५ टक्क्यापेक्षा कमी असलेल्या अति खोल जमिनीची प्रथमतः निवड करावी त्यानंतर मध्यम खोल जमिनीस प्राधान्य द्यावे. जर मुक्त चुन्यचे प्रमाण १५ टक्क्यापेक्षा (१५ ते २५ टक्के) जास्त असल्यास उत्पादन वाढीसाठी शेणखत व संरक्षीत पाण्याच्या पाळ्या देण्यात याव्या.

Technology Recommendation from Dept. Of Soil Science -2021

Project Title

Effects of Promising Microbial Isolates for Enhancement of Drought Tolerance and Soil Health in Rainfed Wheat on Vertisol.

Contributing Scientists

Syed Ismail, A.L. Dhamak, and Ajinkya Bhosale

Recommendations approved:

The enhancement of drought tolerance, yield, monetary return and improvement in soil properties under wheat, seed treatment of liquid *Bacillus licheniformis* @ 100ml / 10 kg seed was found as promising for drought tolerance along with recommended dose of fertilizers and is recommended to rainfed wheat.



शिफारस: कोरडवाहु गहु पिकाचे शाश्वत उत्पादन, ओलाव्याचा ताण सहनशिलता, जमिनीचे गुणधर्म व अधिकतम नफ्या करीता शिफारशीत खत मात्रे सोबत बॅसिलस लिचिनोफॉरमीस या द्रवरुप जीवाणु खताची १०० मि.ली. / १० किलो बियाण्यास बीज प्रक्रिया करण्याची शिफारस करण्यात येते.

Technology Recommendation from Dept. Of Soil Science -2021

Project Title

Effect of zinc solubilizing microorganisms on growth, yield, soil nutrient dynamics and microbial population in pigeon pea

Contributing Scientists

A. L. Dhamak, Syed Ismail and Shantanu Jadhav

Recommendations approved:

For the enhancement of pigeon pea yield, monetary returns and improvement in soil properties, seed treatment of liquid *Pseudomonas striata* as zinc solubilizer @ 100 ml/10 kg seed + application of 30 kg ZnSO₄ ha⁻¹ is recommended to pigeon pea along with recommended dose of fertilizers.



शिफारस:तुर पिकाचे अधिक उत्पादन, अधिक नफा व जमिनीचे गुणधर्म सुधारण्यासाठी सुडोमोना स्ट्रायटा या जस्त विरघळणा-या द्रवरूप जिवाणू संवर्धनाची १०० मिली लिटर प्रति दहा किलो प्रमाणे बीज प्रक्रिया व शिफारशीत खत मात्रेसह ३० किलो जस्त सल्फेट देण्याची शिफारस करण्यात येते.

Technology Recommendation from Dept. Of Soil Science -2021

Project Title

Studies on effect of potassium and micronutrients on growth, yield, quality and nutrient uptake by Pigeon pea.

Contributing Scientists

M.S. Deshmukh, A.L. Dhamak and Syed Ismail

Recommendations approved:

In Vertisol of Marathwada region, to get maximum yield and monetary returns of pigeon pea, application of K_2O and micronutrient grade-I @ 25 kg ha^{-1} or micronutrient grade -II @ 0.5% at flowering stage is recommended in addition with recommended dose of fertilizer (i.e. $25:50 \text{ N and } P_2O_5 \text{ kg ha}^{-1}$).



शिफारस: मराठवाड्यातील खोल काळ्या जमिनीसाठी खरीप हंगामातील तुर पिकाच्या अधिक उत्पादनासाठी आणि आर्थिक फायद्यासाठी शिफारशीत खत मात्रे सोबत (२५:५० किलोनत्र व स्फुरद) २५ किलो पालाश व २५ किलो सुक्ष्म अन्नद्रव्य ग्रेड-१ किंवा सुक्ष्म अन्नद्रव्य ग्रेड :२ ची ०.५ टक्के फवारणी पिकाच्या फुल धारणेच्या अवस्थेमध्ये देण्याची शिफारस करण्यात येते.

Technology Recommendation from Dept. Of Soil Science -2022

Project Title

Effect of different soil types and moisture levels on germination percentages of soybean varieties

Contributing Scientists

P. H. Gourkhede, V D Patil, Syed Ismail, P.H. Vaidya and S P Mehtre, S. S.Shilewant, M G Jecoria, Digvijay Dhama and D.D. Barapatre

Recommendations approved:

Select the soybean variety MAUS-162 and MAUS-71 for early and higher germination of soybean under low rainfall i.e. 75 per cent field capacity soil moisture and other varieties MAUS-158, JS-335 to be sown at 100 per cent field capacity soil moisture in soils of Matathwada region



RECOMMENDATION: Select the soybean variety MAUS-162 and MAUS-71 for early and higher germination of soybean under low rainfall i.e. 75 per cent field capacity soil moisture and other varieties MAUS-158, JS-335 to be sown at 100 per cent field capacity soil moisture in soils of Matathwada region

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Technology Recommendation from Dept. Of Soil Science -2023

Project Title

Effect of Organic Formulations on Growth, Yield, Nutrient Uptake and Quality of Tomato

Contributing Scientists

Contributing Scientist : M.S. Deshmukh ,A.L.Dhamak, V.N Shinde and P.H. Vaidya T.R.Kachave, SatishBhuse

Recommendations approved:

For the enhancement of tomato growth, yield, quality, improvement in soil properties and monetary returns, the application recommended dose of fertilizers along with Beejamruth (seedling root treatment), Jeevamruth (soil application @ 500 litre ha⁻¹) and Panchagavya (foliar spray @ 3% at 15, 30, 45, 60, 75 and 90 DAT) is recommended.



शिफारस :

टोमॅटो पिकाचे अधिक उत्पादन, गुणवत्ता, जास्त आर्थिक नफा व जमीनीचे गुणधर्म सुधारण्यासाठी शिफारशीत खत मात्रे सोबत बीजामृत (मुळावर अंतरिक्षीकरण) जीवामृत (५०० मिली प्रति हेक्टर मुळाभोवती वापर) तसेच ३ टक्के पंचगव्य (१५,३०,४५,६०,७५ आणि ९० दिवसांनी फवारणी) करण्याची शिफारस करण्यात येते.

Technology Recommendation from Dept. Of Soil Science -2023

Project Title

Microbial Biofortification of Iron and Zinc by Plant Growth Promoting Rhizobacteria in Wheat

Contributing Scientists

Syed Ismail, A.L. Dhamak, P.H. Vaidya, and Rakesh Bagmare

Recommendations approved:

For biofortification of iron and zinc in seed and straw of wheat and enhancement of soil properties particularly iron and zinc, yield, quality and monetary returns, seed treatment of liquid *Pseudomonas striata* as iron and zinc solubilizer @ 100 ml/10 kg seed along with a recommended dose of fertilizer (RDF) is recommended.



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Technology Recommendation from Dept. Of Soil Science -2024

Project Title

Soil Site Suitability Evaluation of Turmeric Growing Soil of Hingoli District, Maharashtra.

Contributing Scientists

Vaidya P.H., Zade S.P., Dhamak A.L., Deshmukh, M. S. and Syed Ismail Patil N.M. and Shilewant S.S

Recommendations approved:

Well drain, very deep (>150cm) to moderately deep (>60cm) soil, electrical conductivity less than 0.25 dSm^{-1} and exchangeable sodium percent less than 5 is recommended to get the sustainable yield of turmeric in soils of Marathwada region Maharashtra.



RECOMMENDATION

For the sustainable yield of turmeric in soils of Marathwada region Maharashtra, the soil should be well drain, very deep (>150cm) to moderately deep (>60cm) soil, electrical conductivity less than 0.25 dSm^{-1} and exchangeable sodium percent less than 5 is recommended.

Technology Recommendation from Dept. Of Soil Science -2024

Project Title

Assessment of Solubilization Potential of Promising Potassium Solubilizing Bacterial Isolates in Bt Cotton

Contributing Scientists

Anil Dhamak, Syed Ismail, Suresh Waikar, Pravin Vaidya, Ms. Shubhangi Avte and Javed Jani

Recommendations approved:

For the enhancement of seed cotton yield, monetary return and improvement in soil health, drenching of liquid *Frateuria aurantia* as a potassium solubilizer @2.5 liters/ha in 1000 liters of water 15 days after sowing is recommended to *Bt.cotton* alongwith recommended dose of fertilizers.

RECOMMENDATION

For the enhancement of seed cotton yield, monetary return and improvement in soil health, drenching of liquid *Frateuria aurantia* as a potassium solubilizer @2.5 liters/ha in 1000 liters of water 15 days after sowing is recommended to *Bt.cotton* alongwith recommended dose of fertilizers.



Effect of long-term manuring and fertilizers on productivity and soil properties in soybean-safflower cropping system on Vertisol

✓ Application of 100% NPK + FYM @ 5t ha^{-1} and application of only FYM @ 10t ha^{-1} improved physical, chemical, biological properties and SQI. Significantly increased grain and straw yield and uptake of nutrients in both soybean and safflower crops followed by 150% NPK and 100% NPK + Zn.

✓ The imbalance application of nutrients decrease soil quality and productivity. (The lowest yield and uptake of nutrients status in soybean as well as safflower was recorded in 100% N alone)

✓ The application of balance inorganic fertilizers along with organic manures (100% NPK + FYM @ 5t ha^{-1}) improves the physical, chemical and biological properties of soil and yield of soybean safflower under soybean-safflower cropping sequence.



Iron and Zinc Solubilizing Microbes as Novel Tool for Biofortification in Wheat

Application of RDF along with 40 kg FeSO_4 and ZnSO_4 ha^{-1} and seed treatment of wheat with *Pseudomonas striata* enhanced all growth attributes, chlorophyll content and yield of wheat.



Potassium mobilizing bacterial isolates *Frateria aurantia* and *Pseudomonas striata* were found better strains in increasing seed cotton dry matter yield and Improve the enzymatic activity

