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Soil ph testing kits

Home » Gardening » Soil By Nora Held Research Writer Apart from being our main writer, Nora also works for a number of gardening-related sites and magazines, sharing her experience as an owner of a small farm in North Carolina read more Reviewed By Bruce Williams Expert Consultant Bruce owns a small farm and loves to grill since his early childhood. He’s a professional cook, but hiking and enjoying the great outdoors is his no less favorite part of read more Last updated: February 28, 2024 2024 - 2025 BackyardStyle.com. All rights reserved. Our content is meticulously curated through independent research, testing, reviews, and AI-driven recommendations, all designed to present you with the finest product choices. When you make a purchase through our links, it could result in us earning a commission.Soil testing kits are an invaluable tool for gardeners of any experience level. They allow you to test for things you can’t figure out just from looking at or touching the soil, like the soil pH balance, moisture content, or potassium, nitrogen, or phosphorus levels. The health of your soil dictates the health of anything you grow inside of it, so knowing exactly what you need to add or withhold from your soil is extremely important. Our team researched the best soil test kits on the market, and the Sonkir Soil pH Meter, MS02 3-in-1 Soil Tester takes the best overall spot. This tester is at the top of our list because of its easy-to-use interface, analog design, clear instructions, and reliable manufacturing technology.The Sonkir Soil pH Meter, MS02 is a 3-in-1 testing unit designed for in-ground use and accurately measures soil moisture, pH value, and sunlight level of your plant. This unit is one of the most popular on sale due to its affordable price, and you’ll find it in garden centers across the USA. If you have issues with hard water in your county, and you need to regularly check the pH of your soil several times a week after watering your garden, then we highly recommend this device.This soil tester comes at a reasonable price. It is an affordable and easy-to-use option for novice gardeners.The moisture detection on this divide sets it apart from its peers in terms of precision. Once you insert the probe into the ground, it indicates a reading of between 1 to 10 to let you know if it’s time to water the garden.The sunlight detection panel on this device is placed at the front of the panel, which is a little awkward, and might not give very accurate results. We have found that pushing the probe into the soil at an angle will allow for maximum sunlight to reach the sensor, hence, ensuring accurate results.Check on Amazon Check Price on WalmartThe Kensizer Soil Tester is a multifunctional device that can be used to test soil moisture, sunlight level, and pH value. It has a clear reading dashboard and a sensitive dial. So you can get your readings in no time. Just dip the probes into the soil on your lawn or in your vase and let the Kensizer soil tester do its thing.It is lightweight and portable.The display is easy to read and works well indoors and outdoors.The moisture readings on this device are superb. By design, the prongs on this device are quite fragile.With the 3-in-1 functions of the Atree Soil pH Meter, you can measure soil moisture, pH value, and sunlight intensity easily. It’s helpful for monitoring plant life and making plants and flowers grow healthy and strong. Make no mistake, this soil tester can only be used to measure soil parameters, it cannot be used to test any liquids.This device is very easy to use right out of the box. It is compact and usable indoors and outdoors.This device provides a reasonable level of accuracy.Except for the fragility of this device due to its lightweight, there is not much to worry about.The Garden Tutor Soil pH Test Strips Kit is calibrated specifically for soil pH testing. This kit comes with enough test strips for 100 soil pH tests and includes a detailed 16-page full-color pH testing handbook with lime and sulfur application charts. If you are looking to get accurate results for soil pH, we highly recommend this kit.Testing strips are generally easy to use, and they don’t create any mess.The kit allows you to place the test strip over the chart for more accurate analysis.It comes at an affordable price.The color chart is not attached to the case of the kit so it can easily be misplaced.Luster Leaf 1601 Rapitest Test Kit is a classic home chemical testing kit for measuring the pH, Nitrogen, Phosphorus, Potash content of your soil. Simply place your soil sample in the tube on the exterior of the kit, add some drops of distilled water and mix in the reagent capsule. It will take 5 to 10-minutes for the reaction to occur, and you can compare the results to the color chart provided with the kit after the color settlers.It comes at a very affordable price. The color chart is attached to the case of the kit, so you never have to worry about misplacing or losing your color chart.This product offers better precision and accuracy than the ones designed by other manufacturers.This kit may not be as accurate as professional soil testing kits, but it’s a good guideline for amateur gardeners that want to know the pH or macronutrient properties of their soil.If you’re a garden enthusiast and you can’t afford to take soil samples to the lab and wait for a full report in 3-5 days before taking any actions towards your plants as you would like to be in the know of what your plants need to thrive, this soil pH meter is a must for you. The Trazon Soil pH Meter 3-in-1 Soil Tester provides readings for sunlight, moisture, and soil pH values. All in one device.It comes at an affordable price.It can be used indoors and outdoors.The readings are reasonably accurate.The prongs attached to this device are somewhat fragile, so don’t try to force it into hard surfaces as the device may split apart.Similar to the previous soil testing kit we discussed, the Alkey Soil Moisture Meter also offers a 3-In-1 Multi-function, allowing you to test the soil moisture, sunlight level, and pH value of the soil. This soil testing kit does not measure the N, P, and K levels of the soil, neither does it test the soil for micronutrients. However, it does work well as a day-to-day testing unit and is a great tool for newbie gardeners who want to keep tabs on the health of their soil, especially during the growing season.This soil tester is affordable.It is very easy to use, making it suitable for novice gardeners.It offers a reasonable amount of accuracy.The sunlight detection panel on this device is also placed awkwardly, and might not give very accurate results. Using our hack of pushing the probe into the soil at an angle to allow for maximum sunlight to reach the sensor will give you accurate results.Are your potted plants dropping leaves like a cool DJ on a Friday night? Do the flowers in your home garden keep shriveling up like a single lady under the covers on a cold winter’s evening? Even though you’ve used high-quality soil and fertilizers and you’ve made sure that your plants are receiving the appropriate amount of sunlight that their particular species requires, if your flowers, veggies, succulents, fruits, or whatever type of plants you’re trying to grow are failing to thrive, then a simple solution might be purchasing one of the most rated soil test kits in 2021 to know what’s really up with your garden. With the best soil pH meter, you can check the pH level of the soil and also monitor its moisture and light content.And yet there are one too many test types available. Which should you choose? As always, we have put together a buying guide to let you in on all that you need to know before purchasing a soil test kit from an online retailer or a physical store. We even have some information on how you can get your soil tested for free. We know we do too much. Why Should I Test My Soil?Take a look at any box of fertilizer, and you’ll see the common macronutrients listed on the label; phosphorus, potassium, and nitrogen because just like people, plants need the optimal balance of macro and micronutrients to grow. Before you go ahead and plant those geraniums in your flowerbed, it’s important to test your soil to know what you’re working with. That way, you can throw out the guesswork in your gardening and amend it to suit the needs of the new flowers or vegetables you want to grow. Without testing, you won’t know if your base soil is ready to go, or whether it’s going to require an upgrade by blending with other materials to improve it enough to be fertile. Many times, fertilizers are not always the solution. As a matter of fact, adding fertilizer to nutrient-rich soil might result in your plants burning, or cause problems associated with erratic growth. Ever heard of root-forking? It is common in over-fertilized carrots and can cause abnormal growth. Nobody wants a three-legged carrot! Except for rabbits. More for them isn’t it. And you’re not growing your carrots for rabbits, are you? By testing the soil, you are aware of the nutrient level in the soil, and so you can avoid these types of mishaps in your garden.You also need to know the pH of your soil as well. While all plants are different and require different levels of acidity or alkalinity, most like to remain at a neutral range. Too acidic or alkaline soil will not produce good growth results. If you don’t test your soil, you can’t guarantee the best growth for your plants.What Are the Types of Soil Testers?Chemical soil testersChemical soil test kits are relatively straightforward to use. Simply add a small sample of soil from your flowerpot or vegetable garden to a vial, and then insert a colored capsule that corresponds with the vial lid. Shake the vial, and then wait for the chemical reaction to take place. After the reaction is complete, compare the results with the reference chart provided with the kit.Digital soil testerDigital kits are a bit more complex than chemical testing kits. These battery-operated units send electrical charges into the ground that interact with the nutrients in the soil. Some kits come with a probe that you tuck into the soil, while others require you to fill a vial with soil and add distilled water before probing the vial for your results.Lab testingProfessional lab testing is the most accurate method of testing the pH and nutrient quantity of your soil. You’ll need to acquire a soil sample from multiple sites in your garden and mix them. Once the soil dries out entirely, send it to the lab for testing. Lab testing provides very accurate results, but it is somewhat pricey and far costlier than buying a multi-use chemical or digital reader. If you might have numerous nutrient deficiencies in your garden, we suggest you try this method.How Do I Use a 3-In-1 Soil Tester Kit?A 3-in-1 soil tester is a metal-prong instrument that is inserted into the soil to test soil pH, light intensity, and moisture levels. In our review of the best soil pH testers, we considered a bunch of 3-in-1 solutions for testing your soil. You may have noticed that most of these testers are similar in both their design and their functionality, that just goes to show that you really can’t go wrong with any from this list. Here is a step by step guide on how to operate one:Insert the prongs into the soil you wish to analyze. The first reading that appears is the pH, which is measured on a scale from 1 to 14, with 1 being the most acidic, 14 being the most alkaline, and 7 being neutral. You can alter soil pH by adding limestone to raise it, or sulfur to lower it.Next, push the button on the tester to view the moisture readings. Most plants prefer moist soil in the mid-range. Sand can be added to soil to increase drainage capabilities for excessively moist soil.Finally, push the button on the tester again to view the light readings in foot candles. For reference, the average indoor home lighting is around 100 foot-candles. Plants requiring shade can be planted in the lower light areas, and plants requiring full sun can be planted in the upper light ranges.Do use a clean cloth or dry paper towel to clean and dry prongs before testing, and between testing each plant to avoid a false reading on the next plant.If you’d prefer to watch a video explanation of how to use a soil test kit, this video from California Gardening may help:In many areas of the United States, local agricultural extensions of colleges offer soil testing services. However, sometimes there is a small fee for mailing your results or for the chemicals that are used in the process of testing. You first need to check in your area to see if these services are available to you. And if they are, you simply go and pick up a soil sample box. You then collect the sample per the instructions inside the box and drop it off at the test facility.You can do a very rudimentary pH test at home with just a few simple components. You’ll need your soil sample, some baking soda, some white vinegar, some distilled water, and two clean containers. But with this method, your results may not be consistently accurate, so why not just buy an affordable soil tester kit that will give you accurate results every time.To get reliable and accurate readings, insert the probes anywhere between 2 to 4 inches. This post the ‘best soil pH testers’ follows on from my last few posts on soils, and soil pH. If you have read my posts, How to find out my soil type (part 1) and pH testing of soil (part 2) you are no doubt eager to set about testing your own soil, to find out the pH and set about knowing how to improve your soil for gardening, which is part 3 and final part of my soil series of posts. There are 3 main types of soil pH testers on the market that employ various methods to provide you with a visual reading of the soil pH in your garden. It is difficult to say which soil tester is best there are many, I would suggest the best soil pH tester is the one that suits your own needs, and budget and that provides the accuracy that you require, based on your own growing requirements. This could be a simple test strip carried out at home or a professional soil test and report from a laboratory. Some pH testers are electrical (digital or analogue) that can also be multi-functional, in that they can measure other criteria like light and moisture in the soil in addition to pH. Other methods employed are coloured dyes and dip-in indicator strips, all of which are methods employed to provide the user with the soil pH reading. Below I have provided some of the best soil pH testers currently on the UK market that use these various methods to provide you with visual pH results. I hope you will find this guide useful. Please Note: We independently selected all the products mentioned in this Buyer’s Guide. This guide includes amongst others, Amazon affiliate links, As an Amazon Associate, I earn from qualifying purchases made through these links. For more information, please refer to our affiliate’s FAQ page. The Best Soil pH TestersIf you don’t have much time, use the link below to quickly find out my ‘Top Pick’ for the ‘best soil pH testers’ available for you on Amazon & TEMU. You can be assured we only recommend products based on our research, product quality, usability, and value for money… ‘Best Overall’ Sonkir pH Meter Best Overall Runner-Up Highly Recommended Best Overall Runner-Up Highly Recommended Last update on 2025-05-16 The Sonkir pH meter MS02 is a 3-1 analogue ‘double probe’ soil tester. The meter is capable of measuring not only the pH of the soil in the ranges of 3.5 – 8 but also the soil moisture content from dry 1 – 3, moist 4 – 7, and wet 8 -10. Light can also be measured in lux from 0 dark – to 2000 light. The Sonkir pH test meter utilises double-needle detection technology. This technology passes ‘detailed information between the 2x conductors’ to show you accurate metering values. The double sensor probes are 8in (20cm) long and are 1 x copper and 1 x aluminium. This technology strongly enhances the speed and accuracy of detecting and analysing soil moisture and pH acidity in both outdoor and indoor soils. The meter is fairly lightweight, robust, and portable measuring only 29cm (11.5in) long. The letters and numbers are easily legible on the screen. The Sonkir pH meter operates without batteries. To operate it, follow the manufacturer’s instructions carefully and simply insert the probe into the soil you wish to test, approximately 2 – 4in (5 – 10cm) and toggle the switch to the desired ‘value’ on the meter, based on your metering requirement. Then, simply read off your desired value after about 10 minutes once inserted. After use simply wipe the ‘probes’ clean and store them away safely. The manufacturer states that the Sonkir does not need calibration as it has been factory set, and therefore there are no means to calibrate the meter after each use. However, I find this a little strange as by the mere nature of this meter, periodic calibration should be needed. This is a special note directly from the manufacturer which is worth noting “Since soil most often is in/close to a neutral state (with a pH value of 7), it is highly likely that you find the needle in the display window stay still (because the default pH value is set at somewhere between 7 and 8) when you use it to test the pH value of soil. Customers sometimes are misled by this appearance and hence regard the tester as a defective unit by mistake” In this above respect and particularly for pH readings the meter may be slightly inaccurate for some gardeners but for most, it will be fine. Finally, it should be stressed that the Sonkir pH meter is a SOIL pH tester, not a water or a liquid pH tester. This tester can ONLY be placed in soil. If you are looking for a quick uncomplicated simple way to test the pH of your soil as well as other important tests, then look no further than this Rapitest soil test kit, by Luster Leaf. The Luster Leaf 1601 Rapitest Test Kit is a product designed for testing amongst other things the pH level of the soil. This test kit will provide you with the capsules required for 40 tests – 10 each for pH, Nitrogen, Potash, and Phosphorus. The Rapitest kit comes complete with a set of capsules containing chemicals that change colour when mixed with soil, indicating the pH level of your soil for example. Once the capsules are depleted, however, users can purchase an additional ‘soil test kit 1663 which will provide chemical components for 40, 80, or 200 further tests. It therefore may be beneficial to purchase a digital and or analogue pH tester in the long run as additional chemicals are required on an ongoing basis.. Soil tests that can be undertaken with the Luster Leaf Rapitest 1601: pH – Checking alkalinity/acidity of the soil Nitrogen – For checking fertiliser needs for plant nutrition Phosphorus – A phosphorus deficiency in the soil may contribute to stunted plant growth. Potash – Determine if additional potash is needed to aid early plant growth. Soil pH tests are simply carried out by placing a small amount of soil taken from between 5cm – 10cm (2-4in) below the soil surface you wish to test in the test chamber of the comparators (Rapitest pH tester). Once the soil sample has been added, add the provided ‘powder’ from one of the 10 pH test capsules to the soil in the soil chamber of the comparator. Then fill the comparator’s test chamber to the prescribed line with ‘distilled water. Fit the ‘comparators’ cap and give the water/soil sample a good shake then let it settle for about 1 minute or let the colour develop in the solution. Then just compare the ‘colour’ of the solution against the pH chart on the side of the pH comparator for a pH reading of your test soil sample. For best results allow daylight (not direct sunlight) to illuminate the solution. That’s it’s quick simple and easy. The Rapitest is a quick method of pH testing of soils, however, for increased accuracy, I suggest that you take a soil sample as described above, from several parts of the area you wish to test and mix them together in a bowl, removing all the ‘organic’ material. Once mixed then place a ‘small mixed’ sample in the PH comparator and avoid touching the sample directly with your hands as this may skew the results. The Luster Leaf 1601 Rapitest Test Kit is suitable for both indoor and outdoor plants, and it can be used in a wide range of soil types, including sandy, loamy, and clay soils. The Rapitest soil tester is really simple to use, but it does come with detailed instructions if needed, as well as a soil pH preference list for over 450 plants. It’s a tool that is great for beginners and experienced gardeners alike. In conclusion, the Luster Leaf 1601 Rapitest Test Kit for Soil pH is a useful tool for anyone who wants to monitor the pH level and nutrient levels of their soil. By using this kit, you can ensure that your plants have the optimal growing conditions they need to thrive. These premium multi-purpose soil pH test strips by Garden Tutor provide quick and accurate results over the complete pH range from 3.5 – 9 and are suitable for both professional and amateur gardeners alike. The manufacturer provides 100 test strips that can be used to analyse soil types for outdoor and indoor plants, gardens, allotments and grass lawns, fruit, flowers, vegetables and shrubs. These soil pH test strips provide the gardener with a general overview of the soil condition of their growing area. Very portable and with easy-to-understand user instructions, these test strips offer easy-to-read, calibrated 4 x colour match ‘pads’ which when placed against the manufacturer’s pH colour palette, will provide an instant pH reading of the soil. Soil pH analysis is undertaken by mixing a small amount of the soil to be tested with distilled water. Wait a short amount of time (30 mins) and then dip a test strip into the ‘water solution’. Remove the strip and match the strip against the manufacturer’s colour table on the side of the test strip pot. (Follow manufacturer instructions for the exact process). Possibly the only improvement in my view though for these test strips, is that they could be better calibrated to consolidate the pH ranges. For example, it’s difficult to distinguish the colour differences and hence the difference between pH 2 and 3 or pH 6 and 7. Check out the (Most Accurate pH Tester) paragraph in the general description at the bottom of this post and the 10x factor to better understand this comment. If you’re a gardener, landscaper, or farmer, you understand the importance of knowing the pH and moisture level of your soil. Poor soil conditions can result in failed growth or stunted growth, and even plants dying. That’s why a reliable soil tester like the 2 in 1 Kensizer Soil and Moisture Tester is essential. With two (2) separate sensors suitable for both indoor and outdoor use, the Kensizer is capable of accurately measuring several levels of soil pH, ranging from 3.0 (Acid) – to 10 (Alkaline) The Kensizer can also measure soil moisture, providing dry, moist and wet readings determined over 10 levels, 10 being very wet. One great feature for me is the fact that the Kensizer soil tester does not require a battery for operation, and of course, this saves you from changing the battery over time and is quite cost-effective, users simply plug and play and you are good to go. You may be wondering how a pH tester works without batteries. The Kensizer Soil Tester works by using electrical conductivity to measure moisture levels and pH balance in the soil. The two probes, one for moisture and one for pH operate like this. When you insert the probe into the soil, it completes an electrical circuit that allows it to measure the conductivity of the soil. This information is then displayed on the screen in the form of a numerical reading. The two separate meters have a large display, suitable for those of you with a little difficulty in reading smaller figures or numbers. To get pH or moisture readings users simply insert the required probe about 4in – 6in / 10 -15 cm into the soil. To get an accurate soil pH reading you will need to leave the probe in for about 1-2 minutes in the soil. The ‘Kensizer’ is light and portable and measures a mere 12in or 30cm in length and can be transported around easily. Finally, Do not use the moisture meter to test pure water or other liquids. It can only be used to measure ‘soil’ moisture. After use simply wipe clean and store until required again. Made in New Zealand the Bluelab PENSOILpH soil tester is a high-end pH tester for the professional or serious amateur gardener. This tester is capable of accurately measuring both pH and temperature in soil and other growing solutions. This pH soil tester measures pH in small increments of 0.1 and is fully temperature compensated, so you can rely on getting accurate readings every single time. This waterproof versatile pen tester is suitable for soils, coco coir, potting mixes, solutions, and a variety of other growing media. The soil pen requires 1 x AAA battery (not provided) which normally lasts between 2- 4 months depending on the use or 6 months if in total standby. The Soil pH probe on your pen is not replaceable! As such, the pH probe that is attached to your current Soil pH pen needs to be taken great care of; this is the only soil pH probe that this pen will use within its lifetime! It is important to clean, store and calibrate your pen correctly and it will provide accurate measurements over its lifetime. To use the pH soil pen to take a direct soil pH reading make an indent into the soil using the dibber/probe cover. This cover acts as a ‘dibber’, allowing you to first ‘press’ your pen into the soil, remove the cover, and then take a pH reading from the ‘indentation’ you just made in the soil. This ‘dibber’ cover also protects your pen’s probe, reducing the risk of wear and tear. Alternatively, you can place your probe directly into your soil/water mix as described in my post pH testing of soil 4 easy ways – Method 1 Cleaning, storing, and calibrating the Bluelab pen is fairly straightforward and easy to undertake. Calibration and re-hydration should be carried out every 30 days as per the manufacturer’s recommendations using the Bluelab probe care kit. Successful calibration can be confirmed on-screen via a successful pH calibration indicator. With a great ‘backlit’ display with large legible numbers, this SoilpH pen should you need it carries a 12-month warranty and great after-sales support from Bluelab which should give you total peace of mind. Auto-off Function to Extend Battery Life Two-Point Calibration Easy Calibration Hold Reading Function Waterproof 12-month Warranty Accurate Temperature Compensation Quite Expensive, But Top of the Range The Essentials pH meter is an electronic digital soil pH meter, ideal for professional and amateur gardeners alike. This reasonably priced pH meter has a few features only seen in more expensive electronic digital pH soil meters. These include ‘easy’ self-calibration, energy-saving ‘shut off ‘after 15 minutes, low battery alert, water-resistant; and a memory function that allows the user to see the past 10 pH readings, so gardeners are able to keep track of their past readings with ease. These include ‘easy’ self-calibration, energy-saving ‘shut off ‘after 15 minutes, low battery alert, water-resistant; and a memory function that allows the user to see the past 10 pH readings, so gardeners are able to keep track of their past readings with ease. Once switched on, pen calibration is easy using the buffer solutions pH4 & pH7 combined with the ‘calibration’ button on the unit. Simply dip the probe in the preferred solution and press the CAL button until CAL appears on the screen, it’s as simple as that. Simply follow the manufacturer’s instructions to ‘set’ the perfect calibration every time. There is however, only one calibration point on this pen unfortunately, which is either 1pH, 4pH, or 7pH, with a ‘solution’ temperature of anything between 0 DegC – 50Deg C (32 F – 122 F) being possible to be measured. Once calibrated though, the Essentials pH meter works by dipping the pen into any solution, waiting 20 seconds for pH ‘stabilisation to take place, then simply taking the pH reading from the pen screen. In a ‘gardeners’ case, the soil/water solution is as described in my post pH testing of soil 4 easy ways – Method 1, is the ideal solution to use in conjunction with this Essentials pH meter to get an accurate soil pH reading, within the region of +/- 0.2 pH over the full 0-14 pH range. Using just 4 x 1.5v button batteries (included) the Essentials meter will last for about 150 hours of normal use on one set of batteries, or about 350 tests. The Essentials pH pen is a very portable pen measuring only 17cm L x 3.2 cm W (6.6in x 1.4in W) so would easily fit in your pocket, so remember it’s there! Finally, it is essential that you store the pen in a cool place and not allow the ‘cap’ to be removed during storage. The pen’s ‘probe’ needs to be stored in a ‘storage solution’ which fills the ‘cap’. This is to ensure optimal life expectancy and pH accuracy. It is recommended that ‘calibration’ and the ‘storage solution’ are checked every 30 days and or after each use. Memory For 10 Readings Water-Resistant Low Battery Alert Simple Calibration Energy Saving No Direct Soil Reading Single Calibration Point This ANKRIYUL 4-in-1 multi gardening meter is designed to measure soil moisture, pH, temperature, and sunlight intensity (a common fourth feature in many multi gardening meters. Priced competitively, typically This battery operated device (batteries not included) is aimed at budget-conscious gardeners. Below, we will break down a few key feature that make this multi gardening meter worth looking at. Moisture Meter: Helps assess whether your soil is dry, moist, or wet, very useful for preventing over – or under-watering. pH Gauge: Measures soil acidity/alkalinity, critical for tailoring conditions to specific plants (e.g., blueberries that thrive at pH 4.5–5.5, while asparagus prefers 6.5 – 7.0). Temperature Sensor: Monitors soil warmth, handy for timing ‘seed’ planting or transplanting. Fourth Feature (Assumed Sunlight): Many 4-in-1 testers include light intensity, which could help gauge if plants are getting enough sun. Digital: For clear accurate readouts. User reviews on this specific product are certainly very positive recieving 4.5 out of 5 stars on the TEMU website, which is great feedback, equal to that on similar 4-in-1 soil testers from other manufacters at a much greater cost. Accuracy Concerns: Many budget 4-in-1 testers often note inconsistent readings. A tester might show pH 5 one day and 7 the next, especially if soil moisture varies. Ankriyul customers do not seem to have found this problem if all the positive reviews are anything to go by. Durability: Plastic testers in this price range are often prone to breaking if mishandled or left in wet soil too long. Our motto is ‘if you look after your equipment , it will look after you’. Battery Operation: Unlike analog testers (e.g., Kensizer or Sonkir), this Ankriyul 4-1 tester needs 9v batteries, unfortunatley rechargable lithium batteries can not be used either, which is a drawback in my view. Some gardeners dislike their use due to the added cost and inconvenience. In practical terms, this 4-1 tester could be just the ticket for the casual gardener or beginner who does not want to spend larger amounts of money on gardening equipment. If you want to check if your rose bed needs watering (moisture), or your veggie patch is too acidic for tomatoes (pH 6.0–6.8), or if the soil’s warm enough for spring planting (above 10° C – 50°F) then the Ankriyul 4-1 tester is for you. Not forgetting the 4th feature, the ‘sunlight’ feature, this could simply confirm if your ‘ferns’ are in too much shade, however, don’t expect lab-grade results. We would suggest that this 4-1 tester is better for trends (e.g., soil’s getting drier) than exact numbers. For durability, build and non-lithium battery reliance suggest it’s not a very long-term investment, “you get what you pay for” On price however, this tester can not be beaten. If you’re gentle and store it properly, it might last a season or two. The Ankriyul 4-in-1 tester is a tempting buy for its price and versatility, earning great user reviews. It’s ideal for hobbyists who want a quick, inexpensive way to monitor soil basics without needing professional accuracy. But if you’re a serious grower or need reliable data for troubleshooting, you might outgrow it fast, in which case consider a battery-free analog tester or a lab kit instead. Test it against known conditions (e.g., distilled water for pH 7) to gauge its quirks after purchase. You can of course check out the user manual for a better idea of what it can do. Value For Money Multi Purpose Digital Ease of Use Portable Batteries Not Included Not Suitable For Re-Chargable Lithium Batteries Ballpark Accuracy In terms of accuracy, this can be a complicated question, let’s see what we can discover. With the digital/analogue probe devices, many of the cheaper meters suggest that the probe is placed directly in the soil. While this may be an easier option I would advise that this method will not provide accurate results. My advice, and to give any of your soil pH testers the best chance of getting the best ‘accurate’ results is to provide a ‘solution’ of the soil sample/water mix as described in my post (pH testing of soils – Method 1). This ‘solution’ can and should be used for all pH testing methods irrespective of the tester used in your garden or allotment. Now that is out the way let’s try and see if any type of ‘tester’ is more accurate than others. To understand accuracy we should perhaps understand the pH scale a little deeper. The pH scale measures acidity on a logarithmic scale. Each whole number on the scale is 10 times more acidic than the next highest number. For example, 5 is 10 times more acidic than 6. Therefore understanding this, let’s look at the actual tester’s accuracy. Electrical meters (digital/analogue) with a calibration feature that can be calibrated within a known solution (buffer solution) should provide accuracy within +/- 0.1 pH unit. Besides a laboratory report, this will be the most accurate way of testing pH at home. If you consider the 10 x statement above, the next best accuracy tester will be those that provide figures between the whole numbers, for example, 4.5 or 6.5. these perhaps should be considered next based on your budget and needs for accuracy. Lastly, testers that provide ‘whole’ number ranges 1,2,3,4, etc… would prove to be the least accurate due to the fact you have a 10x factor of ‘inaccuracy’ between ‘whole’ numbers as mentioned above. The question are soil pH testers accurate, comes down to the individual and the degree of pH accuracy required for you and your garden. One thing is for sure though, for all gardeners, you MUST have some knowledge and indication as to the pH of your soil, irrespective of being ‘exact’ in the degree of accuracy. A soil pH tester is a device that measures the acidity or alkalinity of the soil. It helps gardeners and farmers determine the pH level of the soil so that they can select appropriate plants, apply the correct fertilizers, and control pests effectively. Soil pH testers can come in different types, including electronic meters, test strips, and liquid indicators. Testing soil pH is essential because it directly affects the growth and health of plants. Different plants have different pH requirements for optimal growth. When the soil pH is too acidic or alkaline, plants may not be able to absorb the nutrients they need, leading to poor growth, weak stems, and yellow leaves. Testing soil pH helps gardeners to adjust the soil’s pH level to meet the needs of specific plants. Using an electronic soil pH meter is easy. First, ensure that the soil is moist, but not too wet. Insert the probe into the soil, making sure it reaches the root zone. Wait for a few seconds for the reading to stabilise. The digital display will show the pH level. Rinse the probe with clean water after use and store the meter in a dry place. Soil pH should be tested before planting a new crop or adding new plants to the garden. It’s recommended to test soil pH at least once a year to monitor changes. As you can see from the reviews above, finding the best soil pH tester is not as straightforward as it may seem on the surface. Much depends on your own requirements and the degree of pH accuracy you require in your own garden, of course, your budget also has its part to play. All the product guides above will provide a gardener with some knowledge of your soil pH level, just how much is up to you. Our buyer’s guides offer a wealth of information on a variety of subjects related to gardens, outdoor living and much more. Photo: amazon We may earn revenue from the products available on this page and participate in affiliate programs. Learn More › Testing garden soil is the best way to determine what it needs—if anything—and how much. A variety of soil testing kits are available, but how reliable are they? Home gardeners rely on these kits when deciding whether to amend their soil, so to narrow down the best soil test kits, we tested for accuracy, dependability, and ease of use. Soil testers range from simple pH strips to complex kits that pinpoint deficiencies. Serious gardeners will want to reach for comprehensive tests. As Jon Traunfeld, director of the Home & Garden Information Center at University of Maryland, explains, “We recommend that gardeners have their soil tested by accredited soil testing labs, public or private. A basic test that measures soil pH, important soil nutrients, and organic matter costs $20 to $25. The labs also provide recommendations for lime and fertilizer if needed.” These tests are available directly from labs or through your county extension office. For the average home gardener though, it can be easier to buy a soil test kit online, so that’s what we tested. To ensure accuracy, we compared product results to test results acquired from the Kansas State University soil testing lab. Our favorite product ended up being the MySoil Test Kit—it was easy to use and the results were simple to interpret, and most importantly of all, they were accurate. Ahead, learn what to look for when shopping for a soil test kit, and find out why the following products are well suited for helping determine soil deficiencies. Photo: amazon Type of TestTests ForResult TimeMySoil Test KitProfessional, mail-in13 nutrients plus pH levelResults by email within 6 to 8 days of mailing the sampleSoil Savvy Soil Test KitProfessional, mail-in14 nutrients plus pH level11 days from when the sample was mailedAtree 3-in-1 Soil pH Meter Tester KitsAnalog probeMoisture, pH, lightImmediate for moisture and pH, 10 minutes for lightGarden Tutor Soil pH Test Strips KitStripspH levelsWithin 20 seconds of testingLuster Leaf 1662 Soil Test KitChemical (at home)pH, nitrogen, phosphorus, potassiumVaries by the test but all within a few minutesLuster Leaf 1605 Digital Soil Test KitChemical (digital results)Nitrogen, phosphorus, potassium, and pHWithin a few secondsWhitetail Institute Laboratory Soil-Test KitProfessional, mail-inCalcium, magnesium, phosphorus, potassiumResults available by email in one weekBluelab Soil pH PenDigital probepH and temperatureImmediate The kits we tested had to be accurate and relatively simple to use to earn a spot on this lineup. Test kits and equipment vary by the type of test being performed, so some are better suited to home gardeners, while others appeal to commercial and agricultural growers. We tested a range of kits—some required mailing off a soil sample for professional analysis, some involved chemical testing at home, and others required nothing more than sticking a probe in the soil. Photo: amazon Professional test for pH and a range of soil nutrients and minerals Process is clear and straightforward Results are detailed and easy to understand No print option available on the website Type of test: Professional, mail-in Tests for: 13 nutrients plus pH level Result time: Results by email within 6 to 8 days of mailing the sample Our Ratings: Ease of Use 5/5; Accuracy 5/5; Value 5/5 For professional results, check out the MySoil test kit, which allows gardeners to gather soil samples and have them professionally tested. The MySoil kit offers an in-depth analysis, revealing the amounts of micronutrients, NPK, and macronutrients in the tested soil. With the MySoil kit, we registered online and followed detailed instructions, gathering a large amount of soil from various areas of the property, mixing it together well, and filling the provided testing cup with the soil blend. Then we sent my soil sample to MySoil as well as an additional soil sample to Kansas State University’s agricultural department so we would have a quality comparison. We received an email 6 days later with the results of the soil tests. We were impressed with the comprehensive results. The lab listed the levels of existing nutrients, including nitrogen, potassium, sulfur, calcium, iron, and more, and then compared our soil’s levels with optimal levels, which were also listed for each nutrient. We also received a bar chart that allowed us to visually compare the results, making them simple to understand. Best of all, when the soil results from K-State came back, they were very close to the MySoil results, making us feel very comfortable with the quality of the MySoil lab results. Get the MySoil soil test kit at Amazon or MySoil. Photo: amazon Soil-collection instructions are easy to follow Results provide detailed recommendations for both synthetic and organic amendments Tests for aluminum, which our top pick does not test for Could provide a better explanation of the results It took the longest of all labs to get results Type of test: Professional, mail-in Tests for: 14 nutrients plus pH level Result time: 11 days from when the sample was mailed Our Ratings: Ease of Use 4/5; Accuracy 5/5; Value 5/5 The Soil Savvy soil test kit offers professional soil analysis and custom fertilizer recommendations. It comes with a scoop, a collection cup containing liquid and a plastic ball, a prepaid postage envelope, and complete instructions for collecting and submitting a soil sample. As with the other soil samples we sent in the mail for professional testing, used the same soil gathered from various spots and then blended well. We spooned the soil into the cup, sealed it, and then went online and registered the barcode that came with the kit. The lab took a little longer than we’d anticipated to get back to us, but in 11 days, we got an email directing us to log on for my results. We were impressed by the accuracy of the test results—they were right in line with the K-State results, and we also received customized recommendations for amending my soil to make it healthier. The Soil Savvy recommendations were broken down by synthetic and organic fertilizers—telling me exactly how much of each to apply per 1,000 square feet to amend the soil. Soil Savvy could have provided a better explanation of the results, however. We understand what nutrient ratios are, but a newbie gardener might benefit from further explanation of what the numbers mean. The lab tested for the 14 most common nutrients plus pH level. Get the Soil Savvy soil test kit at Amazon or Soil Savvy. Photo: amazon Very simple to use and provides immediate or near-immediate results Doesn’t need batteries Low-effort option Only measures moisture, pH, and light Type of test: Analog probe Tests for: Moisture, pH, light Result time: Immediate for moisture and pH, 10 minutes for light Our Ratings: Ease of Use 5/5; Accuracy 5/5; Value 5/5 Not all gardeners need or want a nutritional analysis of their soil. Some just want to know the pH level or how much light a plant would receive in a specific location. The Atree soil pH meter provides those answers accurately and at an affordable price. We tested the Atree meter by inserting it in various spots in our flower garden. Over the years, we’ve added amendments, such as sulfur, to specific areas where acid-loving plants are growing, and we were curious whether this simple tester would pick up on that. It did—the soil around our hydrangeas, which we’ve amended heavily, tested at 6 on the pH scale, while the soil around our daisies registered at 6.8. Both seemed accurate based on our historical knowledge of our soil and the amendments we’ve made. We then tested both moisture and light levels in various garden spots, and the Atree again seemed accurate. While this tester didn’t determine things like specific nutrient levels, we found that it would be great for gardeners who are happy with the health of their soil but would like to know if the light is adequate or whether the soil is draining well. The Atree did a good job measuring both. Get the Atree soil test kit at Amazon. Photo: amazon Quick and accurate pH test results Simple to use and read Includes 100 test strips for lots of testing at an affordable cost Poor packaging likely led to short shelf life Type of test: Strips Tests for: pH levels Result time: Within 20 seconds of testing Our Ratings: Ease of Use 5/5; Accuracy 5/5; Value 4/5 Garden Tutor’s test strips offer quick results in determining indoor or outdoor soil’s acid/alkaline content. The kit contains 100 test strips and also includes a 16-page handbook that lists optimal pH levels for growing various plants. We found the Garden Tutor soil pH test strips to accurately determine the pH levels in various parts of our flower garden. The simplest of all the kits we tested required mixing soil from a specific garden area with water and then dipping it in a pH test strip. In a few seconds, sensitive tabs on the test strip turned color, and we visually matched them to the color-coded chart on the outside of the bottle to determine the amount of acid or alkalinity of the soil. We tested the soil in an area we knew had a lower pH, as we’ve added pH-lowering amendments for years. The Garden Tutor test strips determined that level to be 6.1, which sounded close and aligned with other pH tests we performed. We then tested the soil in a spot we knew was more alkaline and got a higher pH reading. One thing we wish the manufacturer would have included, however, was a moisture-absorbent pack with the strips. We used about 20 strips in our initial tests, and all were fine. Three weeks later, however, the pH pads had all turned brownish, which we suspected was due to moist air getting into the bottle. Get the Garden Tutor soil test kit at Amazon or Garden Tutor. Photo: amazon Provided accurate results Looks intimidating but it’s relatively easy to use No need to send off a sample and wait days for results All the components fit into a small kit that’s easy to store Did not have enough solution to complete 40 tests Type of test: Chemical (at home) Tests for: pH, nitrogen, phosphorus, potassium Result time: Varies by the test but all within a few minutes Our Ratings: Ease of Use 4/5; Accuracy 5/5; Value 4/5 In addition to determining soil’s pH level, the Luster Leaf soil test kit pinpoints the amount of the three most common soil macronutrients: nitrogen, phosphorus, and potassium. There’s no need for the user to send a sample to a laboratory with this chemical test. When we first opened the Luster Leaf test kit case, we were surprised