

RESEARCH OF POTASSIUM FERTILIZERS AND THEIR RAW MATERIALS

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Annotation: Information on potassium fertilizers and their derivatives is provided. Potassium crops and raw materials and methods of their use are given. Potassium minerals and their useful properties are mentioned.

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Potassium fertilizers are very important for plants along with phosphorus and nitrogen fertilizers, because potassium is an important element for them and is one of the three whales in which the whole vital potential of any organism is preserved, so you can in which case you should not neglect the application of potassium fertilizers. On top of that, there are many fertilizers that contain potassium, and you can choose the most suitable soil type for your site and the plants that grow on it.

What are potassium fertilizers? These potassium-containing fertilizers are derived from potassium ores, which are mined openly by nature. Potassium fertilizers can be applied to any soil, including chernozem, clay soil, sandy loam and sandstone. Potassium fertilizers enrich the soil with potassium and contribute to the normalization of sugar transport through plant tissues, thereby ensuring the full flow of nutritional processes, which in turn is well developed to meet the diversity fruits, berries, vegetables. In addition, potassium as an element regulates the growth of leaf mass, when it is abundant in the soil, the plants have a strong harmful immunity, which allows them to reliably resist pests and various diseases. Fruits formed on plants grown in potassium-rich soils are usually much better preserved in winter. Interestingly, the potassium in potassium fertilizers is almost absorbed by plant organisms when they enter the soil with them. Potassium fertilizers, especially potassium fertilizers, are also very compatible with other minerals, and this leads to the formation of complex fertilizers. Potassium fertilizers are now produced in large quantities. Let's talk about potassium chloride. The chemical formula of potassium chloride is KCl. The name scares many, what it can be - what kind of fertilizer contains chlorine, which is toxic to all living things. However, not everything is so bad, in addition to chlorine, this fertilizer contains up to 62% potassium, and this is obvious. Potassium chloride should be added in advance to neutralize the chlorine in the soil to prevent damage to the plants. Potassium chloride is a suitable potassium fertilizer for many berry crops, but in the fall, if it is planned to plant berry or fruit crops in this area, the most appropriate use of it should be applied in the fall. Before planting, do not add potassium chloride to planting holes or holes, which can have a very negative effect on plants. This fertilizer has another name - potassium sulfate. The chemical formula of potassium sulfate is K_2SO_4 . Most gardeners, gardeners and even gardeners agree on one point: Potassium sulfate is the best potassium fertilizer, it usually

contains up to 50% potassium. Among the large number of fertilizers containing this element is only potassium sulfate, which does not contain toxic substances, does not contain chlorine, sodium and magnesium. Among other things, potassium sulfate is allowed to mix with other fertilizers, and this does not cause any harm to the plant organism. Of course, do not abuse the doses and it is recommended to calculate them depending on the needs of a particular plant organism, soil composition and season. Typically, in the fall, when digging the soil, you need to make about 28–32 g of potassium sulfate per square meter, in the spring, before planting, it is recommended to reduce the amount of fertilizer to 4–6 g per square meter. Potassium sulfate can be applied as a fertilizer not only in open ground, but also in greenhouses and greenhouses. By using potassium sulfate, you can slightly increase the amount of sugar in fruits and berries, improve their taste, flavor, and increase the vitamin content. With the introduction of potassium sulfate, the plant's immunity is enhanced and their resistance to various stress factors increases. It is noted that after the application of potassium sulfate, fruits collected from plants growing in fertilized soil rarely suffer from gray rot. The composition of this fertilizer consists of two substances - potassium chloride and sylvinit. By the way, potassium salt is obtained by banal mixing of these two components. Potassium in this fertilizer is about 42%. There is another type of potassium salt on the market - it is mixed with potassium chloride kainite and its potassium content is low (by 10%). In terms of high wear, potassium salt is more negative than potassium chloride and its use under plants is not recommended, especially they if sensitive to chlorine. Potassium salt is most suitable for fertilizing sandy soils, sandy loams, peat soils, as these soils are more likely than others to be deficient in potassium in their composition. Add specific potassium salt to the soil in the fall and it is recommended to use it as a basic fertilizer, but not as the best seasonal dressing. Typically, 35 to 45 g of potassium salt per square meter is applied per square meter of soil, depending on the availability of potassium. Swelling is not recommended. Properties of potassium carbonate. The more “popular” names for this fertilizer are potassium carbonate, or more simply, potassium. The chemical formula of potassium carbonate is K_2CO_3 . This potassium fertilizer, as well as potassium sulfate, has no harmful ingredient like chlorine at all. Potassium is one of the newest potassium fertilizers. This fertilizer contains 56% potassium, very little magnesium and sulfur. Potassium carbonate is the most common fertilizer in the cultivation of potatoes. The dose of this potassium fertilizer in the soil varies depending on the season and the purpose of application. So, for example, in the form of top dressing you can add 14-16 to 19-21 g per square meter, when enriching the soil with potassium in the fall, you can add about 40-60 g per square meter of soil, in the spring when using a **dog**, you can significantly increase the rate and deliver up to 80-95 g per square meter. By fertilizing in late autumn, about 20 g of potassium can be added to the soil. Potassium carbonate is obtained by treatment of rock potassium salts. This fertilizer is actually a by-product of the processing of nepheline and aluminum. Many do not know, but can be obtained independently of potassium carbonate, for example, from ash or plants. About potassium crops. Dealing with the most common potassium fertilizers, let's now look at crops that need to be dressed with more potassium than others. Let's start with tomatoes, usually to get a ton of tomatoes you need to add half a quintal of potassium to the soil. The numbers seem big, but in reality it's not much. Given that tomatoes have a very negative effect on new organic fertilizers and damage the vegetative mass of the crop, it is the most sensible way out of this situation. Potassium is ash as a mineral fertilizer. Subsequent flowering crops: these plants have a slow development with a lack of potassium, partial or complete shedding of the leaf blades, a decrease in the size of the buds, and the flowering period

itself. With the abundance of potassium fertilizers in the soil is observed the development of shoots, the formation of different and generally plant-specific buds. Generally, it is recommended to make fertilizers that contain potassium in the composition of plants, both during planting and during flowering. The best dressing of perennial flowering plants is usually done in both autumn and spring. Only potassium sulfate and fertilizers containing potassium, but no chlorine are used. Potassium fertilizers containing chlorine - potassium salt, potassium chloride - can be applied only to the soil planned for planting in autumn and spring; then in the winter the chlorine can be neutralized in the soil, and in the spring such fertilizer will not harm the plants. Chlorine-containing fertilizers are good because they contain large amounts of potassium, which means the ability to save fertilizers and enrich the soil with large amounts of potassium. Of course, the amount of any fertilizer should be strictly controlled depending on the level of supply of the soil with this or that element. For example, if the soil is deficient in potassium, it is better not to apply fertilizer several times higher than recommended immediately, it is better to enrich the soil with potassium throughout the season, introduce it in small doses and dissolve in water. Alternatives to water-soluble and dry potassium fertilizers are allowed and may even be encouraged. For example, at the beginning of the season, when the soil is rich in moisture, you can add 12–16 g of potassium sulfate per square meter, and the next application to complete the same dose after a month, but it is soluble in water; It is more effective than a single meal at a dose of 20-30 g.

Conclusion

So it is impossible to dissolve potassium, it is a very important element, so it is also very important to feed them. With a lack of potassium in the soil is impossible to get high yields and delicious fruits and berries. Try to use potassium fertilizers correctly: apply chlorine-containing potassium fertilizers only in the fall; it is important to understand this chemical element enough and use it properly.

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