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Ginger (Zingiber Officinale) Bioecological And Medicinal Properties Of

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Abstract: This Ginger (Zingiberaceae) to the family incoming Ginger (Zingiber officinale) plant bioecological , . cadaverous features and people on the farm importance about information given.

Keywords: Antioxidant, alkaloids, atherosclerosis, antibacterial effect, antidiabetic effect, bioactive components, Ginger (Zingiber officinale), ginger tea.

Introduction: Ginger (Zingiber officinale) – one Palladians to the class, gingerbread men to the family belonging thick rhizome many annual grass plant. Mainly tropical and in the subtropics spread. Jan. and Jan. Ginger Southeast In Asia appearance was and first became, and later civilized. The entire Indo- Pacific Ocean along Hawaii to the islands spread. Ginger From Asia export done first spice from plants one and is also aimed at Europe fire arrived and ancient Greeks and Romans by used.

Ginger The o' wire has been in operation since 2000. more time before his/her own healer features with known as. Eastern In Asia cultivated. 3. land under of the body everyone in part ether There is oil. Dried . root fragrant smelly and delicious to be, to be broadcast Rich in oil. Uncrushed Ginger fragrant smell to the crumbs relatively far is stored. sieve done powder in medicine liver, heart, stomach illness in treatment used (honey with together to the kettle drip drinkable). Food in the industry pastry chef products working in the release and in cooking some to cook food (cooking) before) chopped without spice as is used.

Oh my god medicinal properties about first information ancient China in their manuscripts found. From this besides, ancient from the times since In India ginger especially famous to be came. Merchants plant about information hide, ginger Red of the sea beyond on the shore located troglodytes in his country grow, said legends created.

Greeks this the wire my heart to do and lose weight for used. From this besides, ancient from the times since ginger heart nausea against the most good medicine as known. Current at the time ginger main working producers China and India It is also present in Japan, Nigeria, West Africa, Australia, Argentina, Barbados and In Ceylon Ginger natural without in nature many does not occur, therefore for him/her crop fields and house under the circumstances cultivation possible. Ginger in 2019 world working output 4.1 million tons organization did, in this 44 percent of the world India to the extent right is coming.

Ginger Allah Almighty His/her In the Word remembered from plants one of them: (Paradise) shades to them close and fruits (also to be picked) easy to be for) bend placed It will be. To them silver dishes (in dishes) and (itself) from silver made although (in transparency) glass gone The cups (and wines) are turned. Even when there is glass, they are made of silver, (they are made of measure (saqiyas) Those who put it there. (The people of Paradise) temperament ginger to be in glasses It is being eaten. don't be afraid name It is called Salsabil (Human) Surah Al-A'raf (verses 14-18).

Ginger (Zingiber officinale)- very useful plant food product also consumed as Today 's on the day ginger many nature drugs to the composition introduced into the organism different from diseases protection in doing wide _ consumption is being done. Dried root fragrant smelly and delicious become, broadcast Rich in oil. Uncrushed ginger fragrant smell to the crumbs relatively far is stored. sieve done powder in medicine liver, heart, stomach illness in treatment Food is used. food in industry, production in the release and to meals

used without spice as used . Composition because of , ginger inflammation to reduce help This gives reason is that its structural parts body organs and tissue inflammation activating immunity to the processes impact does and this with swelling Ginger useful minerals (magnesium , phosphorus , calcium , sodium , iron, potassium , manganese), vitamins (A, B1, B3, C, E, K), fatty acids acids (oleic , caprylic , linoleic), amino acids (valine , isoleucine , threonine , lysine , tryptophan , methionine), fats , carbohydrates (sugar) has plants even seed , seeds all parts fragrant smell ether oils own inside gets . Broadcast oils flu and the cold eliminate in the process of help Ginger gives. root medicinal divided into, containing from 1.5 to 3 percent ether fats , up to 70 percent organic acids , rare There are amino acids . Ginger tea regular drink his/her very many useful properties because of recommendation The liver clean from it poisonous substances remove sends the liver every year one or two times cleaning It is necessary. It is vital. important member blood filtered stands and blood vessel from the system harmful and poisonous substances remove send for service When drinking ginger tea in it ginger and cinnamon combination the liver protect and clean it stands, this As a result, it becomes clean and light. pulls and own task active to do will pass. Pass. bubble to improve health help Ginger organism heater to the effect have, excess per calorie has was unnecessary energy remove sends, in the body normal the temperature to keep help gives. Food digestion to do improves, food digestion in doing problem was people gastrointestinal roads activity Ginger tea improves immunity. system strengthens. Boiling ginger evaporation breath to take for Tea is useful for the stomach. system diseases, vomiting, spasms help Gives. Muscles pain no does the child immunity strengthens.

Figure 1. Ginger tea and tincture.

Ginger (Zingiber officinale) – a very useful plant food product, is also consumed today as an essential natural remedy. Ginger has found its place in many nature-based medicines, helping protect the body from different diseases. It is widely consumed in various forms. Dried ginger root becomes fragrant, smelly, and delicious, rich in oil. Uncrushed ginger retains its fragrant smell, which can last for a long time. When powdered, ginger is used in medicine to treat liver, heart, and stomach illnesses. It is also used in the food industry, either as a spice or added to meals.

Because of its composition, ginger helps reduce inflammation. This is due to its ability to activate immunity processes in body organs and tissues, leading to reduced swelling. Ginger contains useful minerals such as magnesium, phosphorus, calcium, sodium, iron, potassium, and manganese, as well as vitamins A, B1, B3, C, E, and K. It also contains fatty acids (oleic, caprylic, linoleic), amino acids (valine, isoleucine, threonine, lysine, tryptophan, methionine), fats, and carbohydrates (sugar). All parts of the plant, including the seeds, produce a fragrant smell and contain ether oils.

Ginger oils help eliminate flu and cold symptoms. The root, which contains 1.5% to 3% ether oils and up to 70% organic acids, has many medicinal properties. Rare amino acids are also found in ginger. Ginger tea, when regularly consumed, has many useful properties. It helps clean the liver by removing poisonous substances and is recommended to be done one or two times a year. This is vital, as the liver is an important member of the blood filtration system, helping remove harmful and poisonous substances from the bloodstream. Drinking ginger tea, combined with cinnamon, protects and cleanses the liver, making it clean and light, improving its functionality.

Ginger also helps maintain a normal body temperature by removing excess energy and calories. It improves food digestion and gastrointestinal tract activity. Ginger tea strengthens the immune system and boosts

overall health. Boiled ginger tea is beneficial for the stomach, helping to relieve nausea, spasms, and other digestive issues. It also alleviates muscle pain and strengthens the immune system, especially in children.

Chemical Composition

Ginger contains gingerol, which, when used synergistically with other medicinal plants, enhances bioactivity. This is especially true when ginger is combined with turmeric (curcumin), a potent combination. Ginger is also being studied for its adaptogenic properties, as it helps the body adapt to stress, cold, and fatigue. It has a "biofeedback" effect, meaning it can activate serotonin receptors in the brain, improving mood and overall well-being. This effect, referred to as "biofeedback," has been studied in psychopharmacology. Ginger was used in space programs by Russia and the USA to stabilize astronauts' heart activity and prevent nausea.

Ginger contains alkaloids with a carbon-nitrogen skeleton, and the plant is divided into 11 classes based on these compounds. It contains complex ether-type tropane derivatives, including atropine, hyoscyamine, and scopolamine. These compounds are found in both the aerial and underground parts of the plant and are used widely in medicine. The alkaloid content in ginger changes dynamically depending on ecological factors, plant growth conditions, and soil composition. Alkaloids accumulate most in the plant's upper parts during budding and flowering, and in fruits, seeds, and underground parts during fruiting.

Ginger contains 2.7% fat, 0.32% ether oil, and several essential vitamins, including B1, B2, and C, as well as nitrogenous substances, potassium, and calcium compounds. These components define ginger's medicinal properties.

Ginger is a clonal plant, and its chemical composition depends on the terroir (land, climate, water). Thus, ginger's composition may differ noticeably depending on where it is cultivated. Scientific research, including work by NISdelnikov, VIMuraveva, AIBankovskiy, and others, has examined how the plant's alkaloid content changes during various stages of growth. Ginger grown in different regions shows distinct alkaloid concentrations, with the highest levels observed during the flowering period (0.56% in the root). Research also indicates the alkaloid content during the seed formation period is up to 0.75%.

Temperature Requirements for Ginger

Ginger thrives in an average temperature of 20-25°C during the summer and should not be exposed to temperatures lower than 18-20°C during the winter. At temperatures between 10-15°C, ginger enters a "sleep" state and stops growing. In such conditions, the plant may dry out. If the temperature ranges from 12-16°C, ginger growth is rare.

Ginger is a plant suited to a monsoonal climate, and during the winter months, it hibernates. The plant requires a temperature above 18-20°C to continue growing. It is important to provide good lighting and a high substrate layer, ensuring the plant is properly watered during the growing period.

In the dormant period, when the temperature is between 10-15°C, ginger should be watered sparingly. The soil should be allowed to dry out, but the substrate should not be completely dry. During this period, ginger leaves may turn yellow and fall. Once the plant enters its dormant phase, harvest can begin.

The harvest should be collected 10-12 days after irrigation is stopped. The harvested nodes are then dug up, cleaned, and dried in well-ventilated shelters. Under proper conditions, ginger productivity can reach up to 20 tons per hectare.

CONCLUSION

Ginger (Zingiber officinale) is a valuable medicinal and food plant belonging to the Zingiberaceae family. Its rhizome contains compounds like gingerol, zingerone, ether oils, organic acids, vitamins, and minerals, which give ginger antioxidant, anti-inflammatory, antibacterial, antidiabetic, and immunity-boosting properties. Ginger is widely used for treating heart and blood vessel conditions, aiding food digestion, enhancing liver function, and addressing cold-related diseases.

Ginger thrives in tropical climates and requires warm, wet conditions and fertile soils for optimal growth. In Uzbekistan, ginger is primarily cultivated in greenhouses or controlled indoor environments.

In conclusion, ginger holds significant importance in pharmaceuticals, food, and medicine. The study and cultivation of ginger have great practical value, contributing to its widespread use and continued scientific interest.

REFERENCES

1. Uzbekistan Republic President's Decree PF-5460 “On the sale of medicines State from the list to drain efficiency increase and the population they with to provide improve measures " About ". June 20 , 2018 .
2. Mirakbarova, M., Xojamshukurov, N., Otajonov, A., Abdullayev, X., & Abdutolibov, M. (2024). TENEBRIO MOLITOR LICHINKASIDAN OLINGAN YOG’NING MIKROBIOLOGIK TAHLILI. Universal xalqaro ilmiy jurnal, 1(2), 60-66.

3. Khujamshukurov, N. A., Abdutolibov, M. Z., Salomova, S. S., Kh, K. D., & Aliqulov, S. M. (2023). ORGANIC PRODUCTION-PROBLEMS AND THEIR SYSTEMIC SOLUTIONS. Iqlimning davom etayotgan o‘zgarishi sharoitida oziq-ovqat xavfsizligiga erishish uchun agrobiologik xilma-xillikni o‘rganish, saqlash va barqaror foydalanish muammolari, 750-759.
4. Туйчиева, Д. С., Аманбаева, С. С., & Абдутолипов, М. З. (2016). Влияние некоторых пестицидов на ультраструктуру печени беременных крыс. In Вестник научных конференций (No. 2-1, pp. 102-103). ООО Консалтинговая компания Юком.
5. Xo‘jamshukurov, N., Avazova, O., Kuchkarova, D., Abdutolibov, M., & Rustamov, M. (2024). ISSIQXONA TUPROG ‘IDA OG ‘IR METALLAR TA’SIRI. Universal xalqaro ilmiy jurnal, 1(3), 51-56.
6. Xo‘jamshukurov, N., Avazova, O., Kuchkarova, D., Abdutolibov, M., & Rustamov, M. (2024). BIOSUBSTRATNING CUCUMIS SATIVUS L. O ‘SIB-RIVOJLANISHIGA TA’SIRI. Universal xalqaro ilmiy jurnal, 1(3), 57-67.
7. Salomova, S. S., Abdixoliqova, F. N., Abdutolibov, M. Z., K. D., & Xo'jamshukurov, N. A. (2023). DUNYODAGI ORGANIK BODRING. Iqlimning davom etayotgan o‘zgarishi sharoitida oziq-ovqat xavfsizligiga erishish uchun agrobiologik xilma-xillikni o‘rganish, saqlash va barqaror foydalanish muammolari, 801-803.
8. Nortoji, X., & Muxriddin, A. (2023). ORGANIK DEHQONCHILIKNI DUNYO MAMLAKATLARI VA RESPUBLIKAMIZDA RIVOJLANTIRISH ISTIQBOLLARI. Science and innovation, 2(Special Issue 6), 92-97.
9. Хужамшукуров, Н., Эшкобилов, Ш., Дилафруз, К., & Абдутолибов, М. (2023). ВЛИЯНИЕ БИОГУМУСА НА СОДЕРЖАНИЕ НИТРАТОВ В РАСТЕНИЯХ И ПЛОДАХ ОГУРЦА. Universum: химия и биология, (1-1 (103)), 24-29.
10. Тухтабоева, Ф. М., Хашимджанова, Н. Н., Юсупов, А. Н., & Абдуталипов, М. (2016). Изменения фракций белков при воздействии стимуляторов. European research, (6 (17)), 10-13.
11. Тўхтабоева, Ф., Ҳошимжонова, М., & Абдутолипов, М. ТЕМИР УДҚ ВА ФЕРРОСТИМУЛЯТОРЛАР ТАЪСИРИДА ҒЎЗА ЧИГИТИНИНГ ЗАХИРА ОҚСИЛЛАРИНИ АНИҚЛАШ. ILMIY XABARNOMA, 47.
12. Salomova, S., Abdutolibov, M., Kuchkarova, D., Feruzakhon, A., Razikova, M., Ismoilova, N., & Khujamshukurov, N. (2023). TENEBRIO MOLITOR BIOMASSASINING BAKTERIAL MIKROFLORASI. Namangan davlat universiteti Ilmiy axborotnomasi, (7), 189-202.