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Beauty and Health Benefits of *Solanum tuberosum* Juice for Skin and Hairs: A Review



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Mukesh Mohite*, Smita Shete, Akshay Lingayat

Dr. D. Y. Patil College of Pharmacy, Akurdi, Pune-411044, Maharashtra, India

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ABSTRACT

Solanum tuberosum is commonly known as potatoes. Potato juice obtained from raw potatoes is very helpful for the skin and health. The raw *Solanum tuberosum* juice contains Vitamin B, Vitamin C, potassium, calcium, copper, iron, phosphorus. Potato juice is full of nutrients. It reduces the swelling redness. Vitamin c which is present in *Solanum tuberosum* juice helps to hydrate the skin. In the ancient days people wash their skin with potato juice to set blemishes free skin. *Solanum tuberosum* juice is act as antiageing and antiwrinkle which decreases glow on face. Potato juice act as skin brightener and also reduces dark circles around the eyes. All the forms of potatoes like peeled, mashed, boiled, raw potatoes are having medicinal properties. Potato juice decreases the growth of bacteria in acne and follicles. It decreases weight if drink daily and gives glow on skin. It acts as a detoxifying agent for the body and eliminates toxins. Now a day there many people suffering from kidney problems like kidney stones. Potato juice helps to prevent calcium stones in kidney. It decreases cholesterol. Potato when applied to hairs it boost the collagen in the hair so that the hair growth is promoted and hairs became stronger. Due to excess oily scalp, the hairs can fall. The potato juice contains high amount of starch that absorb excess oil.

INTRODUCTION

Beautiful skin is a dream of every woman and they spend thousands of rupees for getting beautiful skin on the synthesis of chemicals. But the effect cannot be seen.(25) *Solanum tuberosum* juice is also used to treat eczema. Eczema means redness, dryness and skin. Potato juice is used to treat dandruff and promotes healthy hair growth. Potaro slurry can be applied overnight on the face to clean the face and enhance skin health. (1) Potatoes contain manganese and fibers. It is used in various skin problems like hard skin and reduces scars and spots on the skin and treat the skin darkening. Potato juice can be used as a toner for the skin. There are some people which are having dark circles around the eyes. Potato juice acts as amazing remedy for this problem. Skin under the eyes is very thin and tender so there are chances to get wrinkles around the eyes. The consistent use of potato juice helps to prevent wrinkles. Potato juice can be mixed with the curd or it can be mixed with the curd or it can mixed with the honey and then apply to the skin for getting the healthy skin. Or we can also combine the potato juice with cucumber juice, aloe vera gel to get the glowing skin. (2)

Origin of potatoes is in the South American country of Peru.(6) Raw potatoes contain high water content and neutral H. *Bacillus cereus* is a bacteria associated with potato products.(32) Calcium is very important for functioning and structure of plant cell wall. (31) An antiproliferative impact on human colon and liver malignant growth cells has been exhibited *in vitro*. Glycoalkaloids from different species have shown inhibitory activity on tumors in mice and human strong tumor cell lines, just as on basal and squamous cell carcinomas and adenocarcinomas. The conventional utilization of potato juice for the administration of dyspepsia has been upheld by constrained clinical preliminaries. (44)

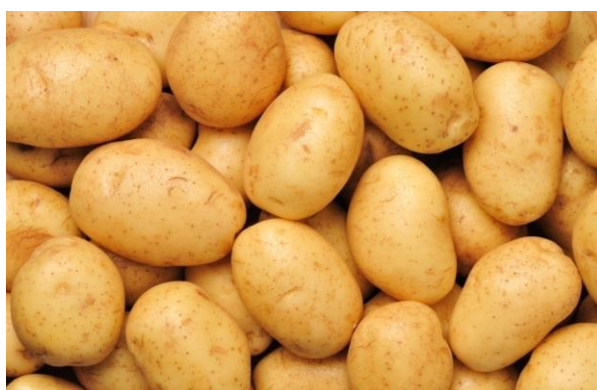


Image No. 1: Potato tubers

<https://www.bing.com/images/search?>

CLASSIFICATION OF SOLANUM TUBEROSUM:

Kingdom-plantae

Subkingdom- viridiplantae

Division-tracheophyte

Subdivision- Spermatophytina

Class-magniliospida

Order-solanales

Family - Solanaceae

Genus - Solanum tuberosum

Species- solanum tuberosum L. (33)

Botanical name- *Solanum tuberosum* (6)



Image No. 2: *Solanum tuberosum* plant and tubers

HISTORY OF SOLANUM TUBEROSUM:

Potatoes are introduced by Portuguese in 17th century. After China India is 2nd largest producer of potatoes in the world.(33) Potatoes have been developed since 500 BC; Central and South American Indians were most likely among the first to choose strong cultivators of the potato as a food staple. Regardless of the Spanish presentation of the plant into Europe in the late 1500s, the tubers didn't turn into a well known food source until the seventeenth century as a result of strict and legendary worries about the poisonousness of the plant. When acknowledged, potatoes were broadly scattered to Germany, different pieces of Europe, and Russia.

By the seventeenth and eighteenth hundreds of years, potatoes framed such an enormous piece of the Irish eating regimen that admission for grown-ups surpassed 8 lb/day. The parasitic illness known as potato scourge decimated over 80% of the yield during the 1840s, bringing about the starvation of in excess of 3 million Irish and the resettlement of some more. (37)

The potato stays a significant food crop, with more than 200 million metric tons gathered every year around the world, outperformed uniquely by wheat. (3) Potatoes are likewise utilized as a wellspring of starch and in the assembling of mixed refreshments. (37) Potatoes are the third most significant food crop on the planet after rice and wheat and the driving vegetable yield in the United States. In excess of a billion people around the world eat potatoes and worldwide absolute harvest creation surpasses 300 million metric tons. Potatoes are developed in an expected 125 nations all through the world from China's Yunnan level and the subtropical swamps of India to Java's central good countries. (43)

DIFFERENT TYPES OF SOLANUM TUBEROSUM:

- a. Russet: common and classic potatoes.
- b. Fingerling: finger shaped small potatoes.
- c. Red: they have thin red skin and wavy texture.
- d. White: they can hold their shape as it is after cooking also.
- e. Yellow: they are golden in colour.
- f. Purple: purple colour can be preserved by microwaving. They have firm flesh. (10)

HOW TO MAKE POTATO JUICE FROM THE TUBERS:

Potato juice is the good source of nutrients used for skincare.

How to make juice of potatoes:

Peel off potatoes.

Cut them in cubes.

Put it in juicer and collect the juice we can also use the blender.

Potato juice should be stored properly because it cannot be kept at room temperature. It should be kept in refrigerator at all times. If we add lemon juice in it then the potato juice can be stored up to 1 month in refrigerator. (13)

USES OF SOLANUM TUBEROSUM JUICE FOR SKIN:

Potato juice acts as a best skin lightener. Potato juice is mixed with lemon juice to lighten the darker skin areas. (3) Potato juice heals the burns, cracks, lower leg ulcers. Raw potatoes cuts if placed on wart for several times, then wart can be removed. Due to the alkaline nature of the potato juice act as antiseptic. Potato juice nourishes the skin tissues. Facemask for emollient and cleansing are prepared from potato juice to treat the hard skin.

Use of potatoes for

- a. **Warts:** Put the raw potato slice on wart for overnight for 1 week. It helps to remove warts. Garlic juice can also be used instead of potato juice.
- b. **Freckles:** Potato juice can be applied for 1 hour daily to get rescue from the freckles in 1 month. Potato juice acts as depigmenting agent.
- c. **Burns:** The potato juice should be placed on the burn for 10-15 min. It absorbs the heat and gives relief.
- d. **For insect stings:** To get relief from insect stings potato slice applied at the infected part for 30 min.(6)
- e. **Removes dark circles around eyes:** Peel the potato. Cut it into slices. Keep one slice of potato in a cloth and put it on eye for 20-30 min. Do it regularly. Dark circles fade away and gets disappeared. Wrinkle and dark spot reduction treatment. Peel the potato.

Make the juice of potato and gently apply it on the dark spot or wrinkles and massage for 10 min. Rinse off face. Potato juice exfoliates the dead skin cells and improves collagen. (9)

Potato starch obtained from potato juice used as thickening agent in cosmetics. Potato juice if we drink then it detoxifies our body and eliminates toxins 4m body raw potatoes are having cooling effect and decrease inflammatory. (6) Potato it have the invaluable, amazing properties. Potato tubers are very beneficial due to juice found in them which is nutrients rich juice. Potato juice also helps indigestion. Solanin present in potato tubers is useful to moisture the skin. We should use the juice of fresh and healthy potatoes, greenish may occurs. (7) Potato juice regulates hormone production so that it helps to reduce the acne and pimples. (14) Skin colour was determined by the amount of melanin present in the skin. Nowadays there is global demand for skin brightening and lightening. Pigmentation of the skin depends on the melanocyte functioning. Pigmentation caused due to increase melanin production. (Increased melanin production causes pigmentation). Pigmentation caused due to age, hormonal imbalance. (16)

Potato juice acts as an exfoliator. It is when rubbed with skin it removes the dead skin cells and act as exfoliator. (20) You can get a perfect brightening effect on skin by the regular use of potato juice. It eliminates acne and pimples by using it every night. Nowadays cosmetic benefits are investigated to increase glow on skin and decrease pigmentation without the use of synthetic chemicals. It is also possible to formulate the potato juice in a formulation like cream, gel for the proper use. (22) Potato juice is easily available vegetable and can treat the imperfections of skin and hairs. Potato juice act as natural skin bleach and skin healer. (24)

HOW TO MAKE SOLANUM TUBEROSUM JUICE FOR THE HAIR TREATMENT:

Take potato juice.

Apply on the scalp and then massage for the 5-10 min.

And then leave it with warm water.

We can use potato juice once a week for healthy hairs.

When we massage the potato juice on the scalp, the blood circulation is stimulated and the gritty particles and impurities can also be removed from the hair follicle.

Potato juice and onion juice can be used combinely to massage the scalp for hair growth. (4)

Use of *Solanum tuberosum* for hair care:

Now a day, many people are facing hair problems due to unhealthy diet, over dieting, pollution, dust exposure and many other factors. People are buying thousands of beauty products but allopathic medicines are having side effects so- it is good to use the natural ones. Potato juice can be used instead of other chemical containing medicines. (8)

In case of dry hairs, potato juice and aloe vera juice is the best remedy. If we wash our hairs with the potato juice then a glow to hairs is appeared. (3) Potato contains the niacin, iron, Vit B and C that are helpful for hair growth and also gives the nourishment to hair follicles. Potato juice is used to clean the scalp, unclog the hair follicles, treat dandruff and prevent hair fall. Potato juice gives shine to the hairs. (4) Boiled potatoes also are used to wash hairs. Potato hair mask is prepared by mixing potato juice and aloe vera. (5)

Potato skins are also useful to promote the growth of hairs and prevent graying of hairs.

How to use:

Take the potato peels.

Then boil that peels with water for 20 min.

Add some oil in it and massage on scalp. (11)

Vitamin B, Vitamin C, iron, and zinc all these are responsible to nourishment of the hair follicles. Potato juice is the one solution to treat all the hair problems which is chemical free, non-toxic and harmless. Potato juice can be used as night serum. Apply potato juice on night time it improves blood circulation, act as hair serum. Potato juice can be used to get dandruff free hair and gives spa-like treatment. (27) Just below the skin of potato all the nutrients are present so we have to use the potatoes with their skin for eating purpose. On the elbows and back of hands darker skin is present potato juice helps to enlighten that darker area. (9)

CONTENTS OF *SOLANUM TUBEROSUM* JUICE:

Potato juice contains antioxidant properties.

Vitamin C: Maintain healthy glow on skin.

Vitamin B: It helps to convert carbohydrate to glucose and also promote healthy hair and skin health.

Antioxidants: It decreases inflammation, decrease ageing process.

Ex. Lutein, zeaxanthin, violaxanthin (12)

Vitamin A: Used to treat acne, treat breakage of hair.

Vitamin B12: Vitamin B also present. (30) It is used to treat hair damage.

Zinc: Treat dermatitis, excessive fragile hairs and infection treatment.

Iron: treat excessive hair loss. (15)

Potato contains potassium so if we eat potatoes constant supply of water and ions in body can be maintained. 100gm of potatoes contains 17mg of water in it. Potatoes contain 17% starch.(9) Potatoes contains high amount of dry matter and proteins. A potato contains high amount of calories and fat. Proteins: 1- 1.5% of tuber weighs proteins are present.

Lipids and dietary fibers: Potatoes contain less lipids but high amount of dietary fibers. (30)

Potatoes are rich in several micronutrients, especially vitamin C – eaten with its skin, a single medium sized potato of 150 g provides nearly half the daily adult requirement (100 mg). (42)A normal medium-sized potato with the skin on contains just 110 calories. Potatoes contain no fat, no cholesterol and no sodium, making them an incredible expansion to any heart-solid eating routine. Leaving the skin on a potato while heating or bubbling keeps the supplements in the potato meat from draining out. At the point when you eat a heated potato with the skin on, it's a solid eating regimen expansion. (47)

Starch: Carbohydrates, primarily starch, make up 10 to 30% of the total fresh mass of the tuber. The later maturing cultivars achieve the largest size and greatest starch yield compared with the earlier maturing cultivars. Starch is packed into starch granules that contain two forms of starch; amylose (long chains of glucose residues) and amylopectin. On average, cultivated potato has a ratio of about 1:3 amylose: amylopectin. However, the range among cultivars is 22 to 43% amylose. It is generally agreed that cultivars with greater amylose content would be healthier. Cooked potatoes contain high amount of Carbohydrates. (41)

Vitamins and other useful photochemical: Potatoes are an important source of vitamin C (ascorbic acid). Levels range from 84 to 145 mg per 100 g dry mass, depending on cultivation, planting site, and storage conditions. Vitamin C is important on the availability of iron a mineral that tends to be limiting in our diet. Also present are several B vitamins (folic acid, niacin, pyridoxine, riboflavin, and thiamin. (46)

Minerals: Minerals are important to maintaining health through their function as electrolytes, enzyme constituents, and antioxidants. Mineral deficiencies are common around the world because of the relatively low content of bioavailable minerals in many staple crops. Globally, calcium, iron, selenium, iodine, and zinc deficiencies are the most widespread. In raw potatoes potassium, phosphorous, calcium are present. (50)

Phenolic compound in potatoes:

Hydroxycinnamic acids

Hydroxybenzoic acids

Anthocyanins

Non-anthocyanin flavonoids

Dihydro coaffeoyl polyamines



Potato peels contains phenolic compound, glycoalkaloids and cell wall polysaccharides, which are used as natural antioxidants, precursors of steroid hormone and dietary fiber. Ethanol extract of potato peels showed excellent antioxidant activity when added at concentration 0.04% to minced meat which was subsequently irradiated at 2.5. (30)

Table No. 1: Chemical compounds present in potato

| Part of plant | Extraction solvent | Compound determined |
|---------------|--------------------|---|
| Tubers | Acetic acid | Anthocyanin, flavonoids, phenolic acids |
| tubers | acetone | Anthocyanin, |
| tubers | methanol | Anthocyanin, |
| peels | Ethanol (90%) | Not specified |
| peels | ethanol | Phenolic acids |
| peels | water | Not specified |
| peels | Ethanol (95%) | Phenolic acids |

Dietary fiber in potatoes: Potatoes are full of dietary fibers. Those are cellulose, carbohydrates, pectin, lignins, and gums. Potatoes contain 50% of dietary fibers. Potato peels contains natural antioxidants due to antioxidants potato peels has strong reducing power, superoxide scavenging ability.(34) Deductively, dietary fiber is a wide term that incorporates a few starches; cellulose, hemicelluloses, lignins, gelatins, gums etc. It is accepted that authoritative of bile acids is one of the systems whereby certain wellsprings of dietary strands lower plasma cholesterol. Examined the hypocholesterolemic impact of dietary fiber from PP and found that following a month of benefiting from potato strips, rodents indicated 40 % decrease in plasma cholesterol substance and 30% of hepatic fat cholesterol levels were diminished as contrasted and creatures took care of just with cellulose enhanced eating regimen. (55)

POTATO JUICE REMEDIES WITH OTHER INGREDIENTS:

1. Potato juice can be mixed with the rice flour and scrub can be prepared at home from this home remedy.
2. Potato juice+ milk+turmeric = used to remove spots on skin. Potato juice, lemon juice, pomegranate seeds. It helps to lighten the skin tone and removes dark spots. (26)

3. Potato juice can be blended in with dahi (curd) or nectar and utilized for developed skin. It will help fix the skin and render a clearer, more splendid sparkle. For more youthful skin, the juice can be cooperated with lemon squeeze and applied on the face, particularly under the eye. Allow it to dry, at that point wash off and saturate well. (38)

4. If we mix the potato juice with honey and egg it gives conditioner like effect. (4)

5. You can attempt a simple enemy of obscuring scour by consolidating rock salt with equivalent amounts of lemon juice and potato juice. Blend well and delicately rub on the influenced zone, shared Dr. Ashutosh Gautam, Clinical Operations and Coordination Manager at Baidyanath. (38)

OTHER HEALTH BENEFITS OF SOLANUM TUBEROSUM:

a. Potato juice is alkaline in nature due to alkaline nature it alkalizes our body and prevents cancer.(18)

b. It improves digestion. Potato juice also used to increase immunity and lower the risk of infection. Potato juice contains fibres that are useful to normalized the movement and expel out toxins from the body. Potatoes are anti-inflammatory so they can be used to treat joint pain. (19)

c. Due to the potassium in potato, it helps to stabilize the blood pressure and it also helps to maintain the good blood circulation within the body. Potato juice tightens the skin. Catecholase enzyme present in potato is responsible to decrease dark spots, pimples. Drinking daily potato juice is good for skin. (23) It contains Vitamins, phytochemical and nutrients. Due to alkaline nature it decreases acid reflux.(28)

d. Fresh juices of potato treat cancer and also treat tumours. Also treat kidney, heart, diabetes, gastric ulcer (drink 1-2 glass juice per day). It fights off mouth corner cracks. It treats hepatitis (it cleans gall bladder, liver and makes your body clean). Treats arthritis and rheumatism. It decreases immunity and treat sciatica. Treat gout. It improves digestion.(29) Extract of potato peels is antimicrobial.(34)

e. Crude potato has been utilized generally in poultices for joint pain, contaminations, bubbles, consumes, and sore eyes; potato strip tea has been utilized to mitigate edema or substantial growing; and crude potato juice has been ingested to calm gastritis or stomach issue. (37) The juice can assist you with getting more fit, take one cup of Potato Juice in the

first part of the prior day breakfast and at night 2 to 3 hours before hitting the sack. It doesn't taste that extraordinary. Potato Juice additionally functions admirably as an economical detoxifying operator as well. Need to flush out your liver and gallbladder at that point check out Potato Juice. Furthermore, it has been utilized in Japan and different places on the planet to treat hepatitis with great achievement. (39)

f. Expanded Immunity: Potato juice is pressed with nutrient C, and we as a whole realize that this specific supplement is indispensable for getting the safe framework reinforced. So at the end of the day, inviting potato juice into your eating regimen permits you to appreciate brought down danger of having contaminations achieved by microorganisms that like to enter your body forcibly.(40)

g. Potatoes are wealthy in starch and may influence glycemic control and insulin levels in individuals with diabetes. Cancer prevention agent impacts and protease inhibitor activity are being contemplated.(37)

h. The most noteworthy wellbeing impacts of potato juice incorporate forestalling maturing, supporting assimilation, mending ulcers, supporting the liver.(48)

POTATO PEEL AS ECO-FRIENDLY PRODUCT:

An ecofriendly item has been the essential plan of twenty century of worldwide researchers. (51) One of the primary centre is byproduct reusing of food handling businesses. It has been long time since food industry result changed over into vitality and worth included items. Potato handling is recently raising food preparing processing plants in creating nations, and potato is the fourth significant harvest internationally. An emotional food request increase had appeared in the previous two decades. (52) This prompts increment the quantity of food handling businesses. (53) These days, food handling ventures especially prepared potato fabricates are growing and create an immense volume of potato strip. This byproduct causes ecological contamination because of decay. (54) Eco-friendly products are having great demands in twenty first century. Potato peels has bacteriostatic properties. Potatoes ensure proper healing process of skin.(35)

SIDE EFFECTS OF POTATOES:

1. Damaged potato contains the chemicals which are toxic and may causes vomiting, nausea, diarrhoea and headache.
2. After cooking also the toxic substance cannot be get damaged so we have to take care while choosing and using potatoes. (10)
3. Potato contains high level of sugars and may cause diabetes.(14)
4. If eaten in excess causes diarrhoea, nausea.(56)

CONCLUSION:

It is concluded that the *Solanum tuberosum* juice is full of nutrients and contains vitamins, minerals, proteins, and carbohydrates. Because of that the *Solanum tuberosum* juice is having skin brightening, skin brightening, antiwrinkle, antiageing properties that are helpful for us. Azelaic acids present in potato inhibit tyrosinase activity and decrease dark spots and pigmentation, acne. By combining *Solanum tuberosum* juice with other substances like curd, lemon juice honey the effect is enhanced in skin treatments. *Solanum tuberosum* juice also beneficial for treating various diseases like blood pressure, diabetes, gout, cancer, arthritis and rheumatism.

REFERENCES:

1. Dr. Geeta Dharmatti, 19 Benefits of potato for your skin and health.
2. 6 Surprising potato juice benefits and uses for skin and health. NDTV food, updated 20 July 2018, 17:19 IST.
3. Hocky, Benefits of potato juice for health, 26 May 2017.
4. Meeal Rajapet, How to use potato juice for hair growth? June 4, 2018.
5. 5 Top benefits and uses of potato juice for hair growth, July 23, 2022.
6. M. Umadevi, Health benefits of cons of *Solanum tuberosum* juice, Journal of medicinal plant studies, vol. 1, issue1, year 2013 page.(16-25).
7. Ramagnoli F. Ilispa, Potato juice: its unexpected benefits, 30 May, 2019.
8. Sarika Rana, Haircare tips: use potato juice to grow long and lustrous hairs, 5 December, 2018, 10:59 IST.
9. Kshitij Parmar, N. K. Singh, Rashtrya Krishi, Nutritional value and health benefits of potatoes, vol. 12, issue 1, June 2017, page 117-119.
10. Ravi Teja, 24 Amazing benefits of potatoes for skin, hair and health, June 13, 2019.
11. Sabrina P. Perkins, Get rid of grey hair naturally with potato skins, Dec 7, 2017.
12. 8 reasons of raw potato juice is the next big thing
13. Wikihlow Staff, How to juice potato co-authored, March 29, 2019.
14. John Staughton, 13 amazing potato juice benefits for skin and health, 23 Sep. 2019.
15. Divya S.A, role of diet in dermatological condition, Journal of nutrition and food sciences 2015, 5:5.
16. Abdulkader Mohiuddin, skin lightening and management of hyperpigmentation pharmaceutical sciences and analytical research journal ISSN 2640-6659 vol. 2 issue 2, 8 June 2019.
17. Potato peels: a source of nutritionally and pharmacologically interesting comp. a review and reasschieber.

18. 12 benefits of potato juice.
19. Dreek Gouldman, Health and beauty benefits of potato juice, July 21, 2019.
20. Aparna Anand, 10 beauty benefits of potato April 1, 2014.
21. Top 7 beauty receipies of potato juice 10 march, 2019.
22. Kelvin Ward, Top 5 surprising benefits of potato for skin, July 22, 2019.
23. Yogita Chainani, Potato juice benefits for skin, skincare tips: here's a potato juice can help you achieve a flawless skin, sep. 4, 2019.
24. 10 potato beauty benefits for glowing face skin and hairs.
25. Nikita Goyal, 10 beauty benefits of potato by Feb 25, 2015.
26. How to use potato juice and lemon juice for dark spots
27. Potato juice: one solution that will fix all your hair problems
28. Corey Whelan and Natalie Butter, 8 reasons why drinking raw potato juice is next big thing reviewed, sep. 21, 2017.
29. Nikitha, Top benefits of potato juice for skin, face, hair and health, May 2, 2014.
30. Andreas Schieber, Potato peels: a source of naturally and pharmacologically interesting compound, Department of agriculture food and nutritional science.
31. D. Waterer, Calcium nutrition of potatoes, problems and potential solution, University of Saskatchewan.
32. Craig H. DOAN, Microbiology of potatoes and potato products: A review by, Journal of food protection, vol. 3, no. 5, 2000, page no. 668-683.
33. Biology of potato, ministry of environment forest and climate change, gov. of India.
34. V. A. Rao, Potato peel as a source of important photochemical antioxidants, nutraceuticals and their role in human health, a review, department of nutritional sciences, university of Turnoti, Canada.
35. Halfom Yemane Gebrechristos, Utilization of potato peel as eco-friendly products: A Review food science and amp. Nutrition, vol.6 issue 6.
36. Mary Ellen Camire, Stan Kubow, potatoes and human health, critical reviews in food science and nutrition, 2 December 2009.
37. Potato uses, benefits and doses, drugs.com, updated on 8 July 2019.
38. 6 Surprising benefits of potato juice and uses for skin and health, NDTV food.
39. 2 Benefits of potato juice- A very healthy drink- Om Times.
40. Lerek Gouldman, Health and beauty benefits of potato juice, July 21, 2019. healthdigzet.com
41. Danielle Donnelly, Role of potato in human health, Department of diabetics and human nutrition.
42. Potatoes nutrition and diet, International year of potatoes 2008. www.potato2008.org
43. Katherine A. Beals, Review of potatoes and their role in global health.
44. Katherine A. Beals, Potatoes, Nutrition and Health, American Journal of Potato Research, April 2019, Volume 96, Issue 2, page no.102–110.
45. Duroy A. Navarre Aymeric Goyer Roshani Shakyan, Nutritional Value of Potatoes: Vitamin, Phytonutrient, and Mineral Content. North Bunn Road, Washington State LInivers
46. Marek Gungala, Vitamin C content in of potato tubers as influenced by insecticide application, Department of plant cultivation, Faculty of life sciences. Pol. J.env. studies, vol. 21, No. 4, 2012.
47. Stephanie Chandler, Are potatoes skin healthy? <https://www.leaf.tv/articles/how-to-cook-15-baked-potatoes-at-once/>
48. Wiki How Staff, How to juice a potato, 29 March 2019.
49. John Staughton, 13 Amazing Potato Juice Benefits For Skin And Health last updated - September 23, 2019
50. Ryan Raman, 7 Health and Nutrition Benefits of Potatoes Written on March 14, 2018. <https://www.healthline.com/nutrition/benefits-of-potatoes#section8>
51. C. C. Prihastuti¹, W Ratnasari¹, Hernayanti, The effect of potato (*Solanum tuberosum*) skin extract on alkaline phosphatase level in periodontitis, IOP Conf. Series: Earth and Environmental Science 255 (2019) 012027, IOP Publishing doi:10.1088/1755-1315/255/1/012027
52. Divya S.A. and P. Ramie Reddy, Role of Diet in Dermatological Conditions. Journal of Nutrition & Food Sciences Journal of nutrition and food sciences ISSN: 2155-9600 doi:10.4172/21559600.1000400
53. A food production wiki for public health professionals. <http://fsi.colostate.edu/tag/vegetable/>
54. Haftom Yemane Gebrechristos, Weihua Chen Utilization of potato peel as ecofriendly products: A review.

55. A. Al. Weshahy and V.A. Rao*, Potato Peel as a Source of Important Photochemical Antioxidant Nutraceuticals and Their Role in Human Health – A Review, Department of Nutritional Sciences, Faculty of Medicine, University of Toronto, Toronto, Ontario, Canada

56. Alfthan, G., Laurinen. M. S., Valsta, L. M., Pastinen, f & Am, A. (2003). Folate intake, plasma folate and homocysteine status in a random Finnish population. *Eur. J. Clin. Nutr.*, 57, 81-88.

