

The removal of corn (clavus) from human skin using tomato juice and paste

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Abstract

Aim and Objective: Tomato juice and paste have been used successfully in removing human skin corn, because of the presence of organic acids in them (tomato juice and paste of green and red ones). These acids are efficient to destruct and dissolve the skin corns. The juice and paste are attempted firstly on the sheepskin and meat; consequently, they are found efficient and active in dissolving the skin and meat proteins. Since some of human skin corns are pressed and become semisolid, this case requires periodic treatment. The objective of this paper is to attempt using of tomato juice and paste of both red and green ones in removing warts of the human body. It starts from the selection of the efficient juice in dissolving the sheepskin and meat and then testing them on human warts. **Materials and Methods:** Fresh tomatoes juice was prepared from 20 to 50 g of tomatoes; total acid content measured by both potentiometric and manual titrations methods. Citric acid crystals were identified by Fourier-transform infrared spectroscopy. Effect of dissolving and destruction of warts by tomatoes juice and paste was studied on sheepskin. **Result and Discussion:** Clear equivalence point indicates high levels of organic acids in tomatoes (green and red) showed a similar action to salicylic acid which encouraged the use of tomatoes' juice and paste for human corns for the removal of human corns. Green tomato juice demonstrated 53.20% corn dissolving and destruction in sheepskin, while with sheep meat, it is 79.75%. Red-ripened tomato juice shows only 2% less activity as compared to green tomato juice due to lycopene and less acid content. **Conclusion:** The research confirms high efficiency of tomato juice and paste in removing human corns without side effects or pains during the period of treatment in the sheepskin.

Key words: Corns, green tomatoes, red tomatoes, tomato juice and paste, warts

INTRODUCTION

Warts are skin protrusions. They are harmless to the skin caused by human papillomaviruses (HPV).^[1,2] The scarring may appear anywhere on the body such as the face, arms, or fingers. Warts have rough surfaces and brown tips appear above them.^[3] The warts that developed on the soles (plantar warts) are developed inside, as a result of the pressure of long standing and walking over them, and are always being painful.^[4]

Genital warts are white and its shape is similar to cauliflower.^[5] Warts have been bleeding if they are shocked or damaged. Although the botfly warts may spread from one part to another, they rarely turn to a cancerous swelling except some genital warts.^[6] In general, warts occur most often in the form of small clusters above the skin surface and with slightly darker skin color, and they are not painfully. However, persons with weak immunity are more prone to warts than others.^[7] Warts are classified^[8] into common ones caused by HPV₂ colored with skin color and have

rough and irregular surface. They are formed as a result of severe hyperkeratosis. Plane warts are caused by HPV₁₁ often occur in young adults and appear on the face and hand back. They may require the skin color or a slightly brown color, and they do not cause pain or itching. Plantar warts which are caused by HPV₁ and they have large size, affecting the feet soles and palms, and sometimes can be seen in children. Sex warts are caused by one of the viruses (HPV_{6,7,11}) and located in the genital area in males and females. They spread by sexual course for the person himself or his partner.^[9]

Variety of methods are attempted for warts treatment; the use of chemicals includes salicylic acid, tretinoin for plane warts, and bodofellen (10–25%) for treating sexual warts.^[10]

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Furthermore, they can be treated by electric ironing and ironing by freezing (liquid nitrogen). Other methods are laser ablation,^[11] manual surface scratch,^[12] and the use of herbal medicines. In addition to that, figs milk and ananas slices are used since they have enzymes; the skin is wrapped with bandage (after putting the materials) during the night and removed at day.^[13]

Experimental Part

All chemicals used are highly graded (99.5% purity) from Fluka and BDH. Double-distilled water is used in reagents solution preparations.

Measurements of the potential and pH are taken at room temperature 298°K.

pH/mV Meter

Ion - analyzer type (digital) from Mettler-Toledo (China) is used to follow potential and pH changes.

Electrodes

Platinum electrode

EIL company used calomel saturated reference electrode from Mettler-Toledo to follow potential measurements while stirring with magnetic stirrer from MinJank.

Combined glass electrode

Combined glass electrode from Mettler-Toledo company (China) is used for pH measurements (with a precision of 0.01pH unit).

Preparation of Tomato Juice

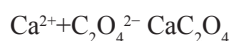
Green and red types of tomatoes are collected, cleaned, dried, and weighed separately in the range of 20–50 g, once with

cortex and another without cortex. They are squeezed and filtered. The juice is collected in a volumetric flask 100 ml and completed to the mark with double-distilled water.

Measurement of Total Acids in Tomato Juice^[14]

Both potentiometric and manual titrations are used to determine total acids in both green and red tomato juices. Figure 1 shows the potentiometric titration curve of total acids.

Oxalic acid or oxalate ions are used and detected by addition of few drops of calcium ion solution to tomato juice which gave white precipitate:



The detection is confirmed by addition of few drops of potassium permanganate solution to tomato juice, and the disappearance of violet color indicated the presence of oxalate ions:



Oxalic acid, citric acid, maleic acid, and ascorbic acid are determined individually according to the methods described by Anwar *et al.*^[12] and tabulated in Table 1.

Studying the Effect of Tomato Juice on the Sheepskin and Meat

Effect on sheepskin protein

As a first step, 15 ml of juice of green tomatoes are added to about 0.2–0.5 g, free of the hair and wool, and left for entire day. In fluently, the piece of skin is taken out, dried, and weighed, and then the variance in weight is recorded.

The same procedure is repeated with red tomato juice at the same time and under the same conditions.

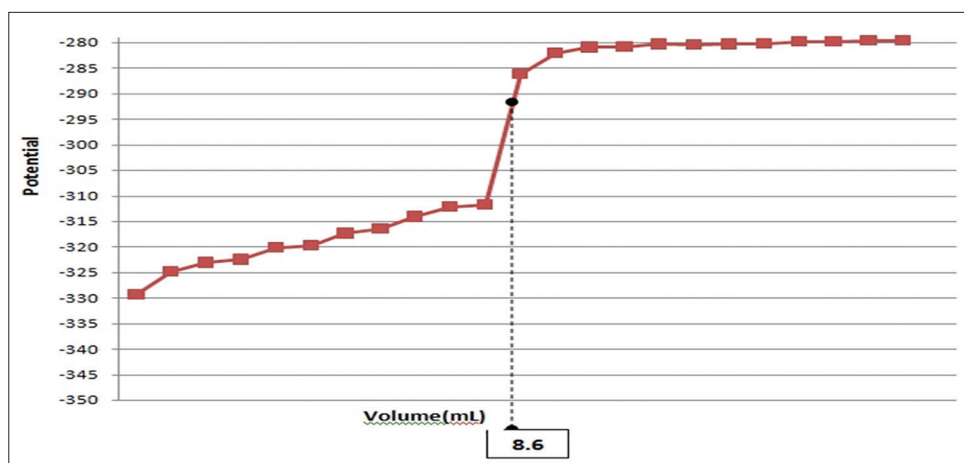


Figure 1: Potentiometric titration curve of tomatoes juice with standardized 0.1M NaOH solution

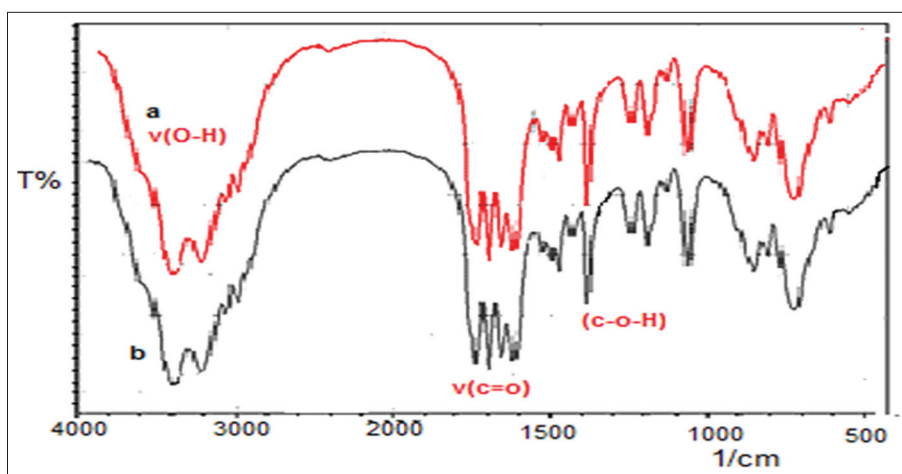


Figure 2: Fourier-transform infrared spectroscopy of citric acid

Table 1: Analysis of tomatoes juice of organic acids

Type of tomatoes	Normal titration of citric acid (g)	Potentiometric titration of citric acid (g)	Maleic acid (g)	Ascorbic acid (g)
Juice with cortex	0.029	0.086	0.015	23
Juice without cortex	0.085	0.089	0.010	21

Table 2: The chemical composition of tomatoes juice^[12]

Component name	Percentage (g%)	Vitamin (mg%)
Water	93.50	A, 2.00
Protein	0.69	B1, 0.65
Oil	0.30	B2, 0.04
Carbohydrate	4.34	C, 40.00
Sugar	3.5	RP ₁ , 0.50
Fiber	0.80	-
Ash.	0.40	-
Metal articles	0.58	-

Table 3: Absorption bands of active groups of citric acid

Active group	Wave number cm ⁻¹
O-H _v	3350
O-H _v	2930
C-O _v	1645–1580
C-C _v	1077
C-O _v	1235
O-H- δ	1375
C-H- δ	1531

Effect on sheep meat protein

An accurate quantity of sheep meat in the range of 0.2–0.5 g free of blood and fat is taken and 15 ml of juice of green tomatoes is added to it and left for the entire day to notice the change in weight. The piece of meat is picked up, dried, and weighed to

know the difference. The same process is repeated with juice of red tomatoes under the same conditions for comparison.

RESULTS AND DISCUSSION

Table 2 depicts the percentages of tomato juice contents in addition of several types of vitamin such as Vitamin B₁, Vitamin B₂, Vitamin C, citric acid (lemon), and moderate source of Vitamin A.^[15] Ripened tomatoes contain lycopene which gives tomatoes reddish color, and its molecular formula is C₄₀H₆₅. Tomato vegetable supplies the adult human with third of his daily dose of vitamin C, most part of that is lost during cooking.^[16]

It is recognized from Tables 1 and 2 that the green and red tomatoes contain relatively high levels of organic acids which we were able to determine them in both tomatoes. All of them are organic acids similar in their action to salicylic acid.

Figure 1 shows the potentiometric titration curve of total acids in tomato juice with standardized sodium hydroxide. Clear equivalence point was obtained indicating that tomato juice is rich in organic acids which enabled or encouraged us to use tomato juice and paste for removal of human corns.^[17]

Citric acid crystals are identified by Fourier-transform infrared spectroscopy [Figure 2].

The significant absorption bands are compiled in Table 3.

Table 4 demonstrates the influence of tomato juice (green and red) on the sheepskin and meat.

Table 4: The effect of green and red tomatoes juice on sheep skin and meat proteins

Type tomatoes	Juice volume	Skin weight	Depression%	Meat weight	Depression%
Green tomatoes	15 ml	0.5 g	53.25	0.5 g	79.57
Red tomatoes	15 ml	0.5 g	51.13	0.5 g	53.16



Figure 3: A simple form for using tomatoes juice and paste to treat cylindrical or spherical grains of corns

The effect is different on the dissolving and destruction of sheepskin and its meat.^[18]

The percentage of dissolving and destruction of sheepskin by green tomato juice is 53.20% (the green color is due to chlorophyll A and B) which is unripened vegetable, while the percentage of effect on sheep meat is 79.75% with a difference of 27% which attributed to the presence of higher percentage in the acids of green tomato juice. In case of red tomato juice, it shows the same effect but with a difference of 2% which is due to the constancy of acid percentages in the ripened tomatoes and appearance of lycopene which offers the red color on the account of decreasing acids percentages.^[14]

Types of Techniques in the Application of Tomato Juice and Paste with Human Corns

To get good sticking on the pod position, the pod position should be cleaned and dried to be ready for treatment.

- When the pod skin is in the form of cylindrical or spherical grains above the skin:
A cylinder form of dense sponge or lint is prepared with a size fitting the skin pod, saturated with tomato juice [Figure 3], and fixed around or above the corn and tied firmly with suitable glue and left for 2 days and replaced. The process was repeated for 7–10 days until corn removal. In case of tomatoes paste, the cylinder is half filled with paste and firmed on corn as in case of tomato juice and retreated for each 2 days until recovery.
- When the corns are in the forms of grains spread on a limited area of the skin: A slice of lint is prepared in the length and width of corn area and saturated with tomato juice or paste and firmed on the corns by glue

and replaced after 48 h until corns removal.

- When the corns are in a pressed form and solidified on skin surface: The lint was prepared in circular, saturated with tomatoes, juice, or paste, fixed on corns, and firmed with glue and replaced every 48 h until corns removal.

These three techniques are applied on 21 persons (10 females and 11 males) who have corns on hands, faces, legs, and backs.

Both types of tomato juice and paste are found efficient in corns removal except of pressed corns which lasted 15–20 days for treatment. After corns removal, its position is sterilized, wrapped with dry and clean wrapper, and frequently or daily sterilized until recovery. It is noted that the treated persons did not feel of pains or side effects and cured without leaving characterized traces or marks on the skin.

CONCLUSION

The research verifies its objective which confirms the high efficiency of using tomato juice and paste in removing human corns without side effects or pains during the period of treatment.

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