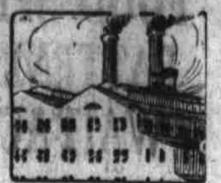


# HAWAIIAN SUGAR NEWS



## VALUE FOUND IN BY-PRODUCTS OF SUGAR INDUSTRY

### Agricultural Expert Outlines Possibilities of Using Waste Materials

## MOLASSES PROVES TO BE UNDEVELOPED GOLD MINE

## Use of Cane Tops For Silage and As Dry Stock Feed is Explained

Valuable data on the utilization of by-products of the sugar industry in the present situation of a possible scarcity of stock feed is contained in an article in the June number of The Hawaiian Planter's Record, which was devoted exclusively to the food conservation campaign. The article is written by L. D. Larsen, head agriculturalist at the planters' experiment station, and is in part as follows:

In the following outline we attempt to enumerate some possible uses to which the various by-products of the sugar industry may be put and to point out the possibilities of each. We do not try to indicate the most promising or to figure out the most remunerative. The practical application of each remains to be worked out. We believe, however, that there are possibilities involved which should be considered at a time like this. When conservation has become a necessity throughout the world, are we utilizing the by-products of our industry to the best advantage?

### Potash From Molasses

The potash alone contained in the molasses that we produce each year amounts to about 5,100 tons. The value of this at the present time would be approximately \$2,550,000, or under normal conditions \$510,000. Under normal conditions we import each year about 4,800 tons of potash for fertilizer. The potash in our molasses, therefore, is three hundred tons in excess of our annual importations of the material. The same is true to a lesser extent of nitrogen and phosphoric acid.

In manufacturing potash from molasses an additional value may be obtained in the form of fuel either direct or as alcohol.

### Alcohol From Molasses

One ton of molasses will produce six gallons of alcohol, now worth approximately thirty-six dollars, or sixty cents per gallon. Under normal conditions its value would be \$19.80, or thirty-three cents per gallon. Used as a substitute for gasoline it would be worth twelve dollars, or twenty cents per gallon. When properly handled, alcohol is equivalent gallon for gallon to gasoline.

The residual potash left over from the manufacture of alcohol from one ton of molasses is eighty pounds. At the present market price this would be worth twenty dollars. Under normal conditions its value would be four dollars.

### Fuel From Molasses

The fuel value of our annual output of molasses is equivalent to 25,500 tons of coal. The fuel value of one ton of molasses is 4950 calories. This is equivalent to one ton of bagasse or one-fifth ton of coal.

The potash contained in one ton of molasses which could be recovered on burning is sixty-four pounds (eighty per cent recovery). This is worth at the present market price sixteen dollars, or twenty-five cents per pound. Under normal conditions it would be worth \$3.20, or five cents per pound.

### Feed Value of Molasses

The feed value of our annual output of molasses corresponds to 95,625 tons of corn. According to feeding experts on the mainland, the value of molasses for feeding purposes as compared with corn meal varies between seventy-five and one hundred per cent. On this basis molasses at the present time would be worth from sixty to eighty dollars per ton for stock feed. In 1905 Lindsay, a feeding expert in Massachusetts, placed the feed value of cane molasses at \$22.50.

### Cane Top Hay

Cane tops when shredded and cured produce a hay which is readily eaten by mules or other stock. Some difficulty has been experienced in obtaining a suitable shredder for cane tops, but this has been overcome by the advent of the Searby shredder. If run at a moderate speed it shreds the cane tops into strips which are suitable for feeding. If run at a high speed the material becomes rather fine for satisfactory handling. The food ingredients in the cane tops from one acre amount to 1500 pounds of dry matter, 50 pounds of digestible protein, 950 pounds of carbohydrates, and 30 pounds of fat. The annual importations of hay into these islands amount to 15,771 tons. The available cane tops amount to 375,000 tons, which, made into hay, would be 112,500 tons. On the drier plantations, where curing would be possible, the annual production of cane tops would be 167,927 tons, which would produce 50,378 tons of hay. We do not propose that this mater-

## HARVEST OF CUBAN CROP PROGRESSES AT RAPID PACE

Much more favorable conditions of grinding, shipping and probable total production are reported from Cuba by Willett & Gray under date of June 28. Statistics of the crop are given as follows by this journal:

"Figures for the entire island for the week are: Receipts 34,895 tons, exports 34,974 tons total, of which 19,336 tons are destined to United States Atlantic ports, 7370 tons to New Orleans and 88,295 tons to Europe; stock 723,942 tons. "During the week fifteen centrals finished the crop, of which ten were in the western portion of the island and five in the eastern part. These factories made a crop of 1,214,156 bags, against Cuba's 1916 crop of 1,204,000 bags, which estimate was for about a 3,800,000-ton crop. "The weekly production continues to exceed that of corresponding weeks of the two preceding years, this year gradually catching up on last year. "Total estimated visible production to date is 2,714,536 tons, against 2,829,700 tons to corresponding date last year, and 2,316,713 tons in 1915. "The estimated balance of supply from Cuba is 1,009,406 tons and exceeds that of the two previous years at this time. "General rains have fallen during the week. We estimate that twenty-four centrals are grinding, compared with seventeen last year and twenty in 1915."

ial should all be handled. Without present labor supply scarcely anything could be done along this line. The figures are given, however, to show latest possibilities. "Cane Tops for Stock Feed The following tables show the feed value of cane tops and cane-top silage compared with sorghum, sorghum silage, corn, and corn silage:

	Digestible Nutrients		
	Crude Protein	Hydrate	Fat
Feed	12.0	0.4	0.4
Sorghum	0.6	12.0	0.4
Cane tops	6.5	9.5	0.3
Sorghum silage	0.6	14.9	0.1
Cane top silage	0.8	12.8	0.2
Corn, green	0.9	12.0	0.3
Corn silage	0.9	13.5	0.3

	Dry Matter		Nutritive	
	Crude Protein	Hydrate	Crude Protein	Hydrate
Feed	21.0	1-21.5	1-21.5	1-21.5
Sorghum	15.8	1-20.4	1-20.4	1-20.4
Sorghum silage	23.9	1-25.6	1-25.6	1-25.6
Cane top silage	18.4	1-15.7	1-15.7	1-15.7
Corn, green	21.0	1-20.8	1-20.8	1-20.8
Corn silage	23.3	1-15.7	1-15.7	1-15.7

From one ton of cane tops fed to stock the residual manure contains 268 pounds of total organic matter, 1.2 pounds of nitrogen, 4.13 pounds of potash, 30 pound of phosphoric acid, and 1.45 pounds of lime.

Cane tops can be preserved satisfactorily in silage. The economical utilization of such ensilage has not been fully demonstrated as yet, but there are possibilities worth considering. For plantation work stock, it is claimed, silage may replace imported hay to a large extent. Unless careful tests were first made, however, it would hardly be safe to adopt a silage ration on a large scale. Working stock has been fed successfully on cane-top silage at the Waipio Substation for a limited length of time. These tests, however, were not of sufficient duration and were not on a large enough scale to warrant definite recommendations.

As a substitute for cane tops, however, in the off season, when fresh cane tops are not available, there is little doubt as to the possibilities of utilizing cane-top silage. This, however, is a comparatively small item and on a great many plantations would be unnecessary.

For beef cattle and milk cows silage presents further possibilities. It has been suggested chiefly as an insurance against drought on our ranches, or combined with other feeds, as a fattening ration for young animals. This last idea is considered by many as very promising. Young stock would be obtained from the ranches at about two years of age. They would be kept on the plantation for about six months and fattened for market by using a ration composed chiefly of by-products: cane tops and molasses. Some protein concentrate would be used in addition. To supply this protein, cotton-seed meal and alfalfa hay have been recommended. Tests are at present under way at the Waipio substation dealing with this subject. The results, however, are as yet uncertain, and specific recommendations on the subject can not be made until these tests have been completed and other, more extensive tests been made.

Under the heading of by-products pigs should not be overlooked. At Onomea Sugar Company, and possibly on certain other plantations as well, quite a number of pigs are raised on the refuse from the plantation stables. There is a large waste involved from this source, and by pasturing pigs in the manure pile practically all of the waste grain can be recovered. Only while the pigs are in milk has it been found necessary to supply additional feed in the form of middlings. Molasses to this ration. Mixed in the drinking water, molasses is readily eaten by the pigs and is one of the best fat-producing products that can be obtained.

## SUGAR MARKET IS FIRM AND STRONG

### Cuban Holders Are Not Free Sellers and Price Makes Steady Advance

The New York sugar market continued firm for the week ending June 28 according to the report of Willett & Gray and closed strong. The report follows: "The market closed last week steady at 5.96 cents, but was not quite large offerings from Cuba at 6.02 cents for practically any position. This had a tendency to cause a quieter market, and it looked at one time as if the disposition of Cuban holders to sell freely at 6.02 cents would tend to check any advance above that figure. "However, the market retained firmness and Cuba, instead of being free sellers, as was expected, at 6.02 cents, when refiners were willing to say this price, withdrew a large part of the offerings, and refiners were able to secure only 125,000 bags at 6.02. "There was a difference of opinion regarding the quantity sold and some of the trade estimated the sales at 300,000 bags. "Tuesday, encouraged by the advance in options, operators were able to advance their limits to 6.08 cents, and a moderate business was done at this price. As sugars at this figure were soon exhausted, a further advance was made and operators and refiners bought Cuban sugar for prompt and July shipment at 6.145 cents. "Wednesday further strength developed owing to larger increased refined demand, and sales were made to refiners and operators at 6.27 cents. "The market closed the week strong and sales were reported to refiners at 6.33 cents and later at 6.40 cents. "Porto Rico sugars sold to a fair extent at better prices, last sales being at 6.02 cents with sellers asking 6.27 cents."

Montana Bingham, which has now stepped into the war baby class on Honolulu's "Wall Street," lived up to its recently established reputation again yesterday and advanced eight cents more to 69 cents. It held the center of interest on the local stock exchange to the exclusion of other mining stocks and even sugar securities, though the latter continued quiet and inclined to shade off in the face of further advances of the price for raw in the New York market. The quotation is 6.40 cents. Transactions in Bingham reached an even higher total yesterday than on previous days of heavy trading. More than 35,000 shares changed hands up until noon and the sales after noon reached a high figure as the price advanced to 65 and then to 69 cents hovering between these two figures at the close of the day. Few fluctuations marked the course of Bingham's price since Wednesday's session closed, the quotation advancing steadily at 61, 60, 63, 63 and 64 cents to the close of yesterday's session and continuing the upward in the afternoon to 68 and 69 cents. Madera also continued in active demand maintaining its position at 33 during the morning and selling strong at 34 cents in the afternoon on a buying movement. Minerals Products regained to 30 cents; Mountain King slipped back to 30 cents; Engelo Sugar showed further strength on an advance of a quarter to 6.25 and Honolulu Oil dropped off five cents to 4.20. The unlisted market was active throughout and sales to the close of the session totalled more than 72,000 shares. Sales of sugar securities totalled 612 shares of which 185 were at the session. Ewa declined an eighth to 33 1/8 after selling at 33 1/4. Oia was without change at 13 1/4; McByrde at 10 3/8 and Waiulus at 28. Pahang Rubber advanced an eighth on a small sale at 19 5/8. In San Francisco, the quotation of Hawaiian securities continued dropping from 8 1/4 to 6 according to Associated Press advices. Hawaiian Commercial declined five-eighths to 47 1/2 and Hawaiian sugar dropped a quarter to 36 1/2. Other quotations were unchanged.

## CUBAN PROSPERITY TO BRING NEW CENTRALS

Cuba's prosperity has resulted in extensive plans for new sugar mills, new railways, and many other phases of engineering activity, all of which will mean new orders for American construction material and machinery, according to an official survey of the situation recently completed by Special Agent W. W. Ewing, of the Bureau of Foreign and Domestic Commerce, Department of Commerce. A number of new sugar mills are projected for this season, and railway construction and extension is being planned on a large scale. The heavy traffic movement of both sugar and general merchandise will make necessary a great development of the wharf facilities, and the need for greater warehouse space and other port improvements is apparent. Modern hotel buildings are already being planned and sites acquired in order to meet the demands of the tourist traffic. Many other indications of engineering activity are to be seen in all parts of the island. The United States is in the best position to supply the materials needed for all such improvements.

## CORN GROWN ON MAUI BREAKS LOCAL PRICE

The shipment of Maui grown produce promised by J. J. Walsh of Kahului, who is acting for the food commission, arrived here yesterday. It consisted of forty bags of shelled hull corn, weighing about two tons, and thirty bags of Irish potatoes, weighing about a ton and a half. The corn was sold before it arrived, the Union Feed Company taking the entire shipment. The potatoes have been placed on sale at the Territorial Marketing Division, and at present are retailing at four cents a pound, for small lots, or 3.50 a bag of a hundred pounds. These are the famous Makoa variety, the best that has ever come from the Valley. On the same market is a quantity of Irish potatoes from Hanalei, Hawaii, selling for slightly more than the Maui spots. They are said to be no better in eating quality, but a shade larger in size. Incidentally, it is developing that there are plenty of island potatoes on the Honolulu market now, and that spot prices are receding from the high water mark of \$4.50 wholesale which they reached two weeks ago. It is reported that one big wholesale firm has announced its intention to import no more tubers from the Coast, because indications are that it can get all the island grown potatoes it will need, and that there will be equal in quality to the imported article. The drop in price is ascribed to the new crop, which is coming on the market throughout the States. The Government's recent estimate of a bumper potato crop seems to be materializing. Now with an absolutely clear conscience Honolulu people can insist upon an island, home potatoes and feel sure they are going to get them.

## PHILIPPINE SUGAR IS WANTED IN HONGKONG

An increased demand for Philippine raws in 1917 by the Hongkong refiners is predicted by United States Consul-General George E. Anderson in a recent report to the Department of Commerce. The prediction is based on the belief held by prominent Hongkong sugar importers that the very limited freight service now existing between the Philippines and the United States and Europe, as compared with the fairly liberal supply of tonnage available between the islands and China, will place Hongkong in the position of being a neutral outlet for the Philippine crop this year. European Exports Large For the first time in many years, the report states, Hongkong's 1916 output of refined sugar went principally to Europe. This was due to two causes: the urgent demand for sugar in Europe and a light demand for refined in the Chinese market. Exports by the Hongkong refiners amounted to about 80,000 tons of refined sugar, of which 85 per cent was Java sugar and the rest Philippine. Europe took about 35,000 tons of the refined exports, the United States 325 tons, and Chinese ports and various small countries the remainder. Of the raw sugar imported and later exported from Hongkong during 1916, about 30 per cent went to Japanese factories, while the rest went to Chinese and European ports direct.

## ADULTERATED SUGAR FIFTY CENTS POUND

(By The Associated Press) ROME, June 19.—Sugar mixed with saccharine is now sold here at 50 cents a pound. The government previously fixed the price for ordinary granulated sugar at 25 cents a pound, but, owing to the small stock in Italy, saccharine has been added and the price raised. It is stated that the new grade of sugar is three times as sweet as the old one. Even at the new price, sugar is very difficult to obtain in more than 5-cent packages, and the grocery stores selling it only to regular customers or to persons buying pound packages of coffee. The government issued a decree providing for food cards, allotting so much food per day to each person, but it is doubtful if the food card system will be ready before the end of the war.

## BINGHAM STILL CLIMBS UPWARD

### Copper Stock Scores Another Eight Cent Advance; Sugars Neglected

Montana Bingham, which has now stepped into the war baby class on Honolulu's "Wall Street," lived up to its recently established reputation again yesterday and advanced eight cents more to 69 cents. It held the center of interest on the local stock exchange to the exclusion of other mining stocks and even sugar securities, though the latter continued quiet and inclined to shade off in the face of further advances of the price for raw in the New York market. The quotation is 6.40 cents. Transactions in Bingham reached an even higher total yesterday than on previous days of heavy trading. More than 35,000 shares changed hands up until noon and the sales after noon reached a high figure as the price advanced to 65 and then to 69 cents hovering between these two figures at the close of the day. Few fluctuations marked the course of Bingham's price since Wednesday's session closed, the quotation advancing steadily at 61, 60, 63, 63 and 64 cents to the close of yesterday's session and continuing the upward in the afternoon to 68 and 69 cents. Madera also continued in active demand maintaining its position at 33 during the morning and selling strong at 34 cents in the afternoon on a buying movement. Minerals Products regained to 30 cents; Mountain King slipped back to 30 cents; Engelo Sugar showed further strength on an advance of a quarter to 6.25 and Honolulu Oil dropped off five cents to 4.20. The unlisted market was active throughout and sales to the close of the session totalled more than 72,000 shares. Sales of sugar securities totalled 612 shares of which 185 were at the session. Ewa declined an eighth to 33 1/8 after selling at 33 1/4. Oia was without change at 13 1/4; McByrde at 10 3/8 and Waiulus at 28. Pahang Rubber advanced an eighth on a small sale at 19 5/8. In San Francisco, the quotation of Hawaiian securities continued dropping from 8 1/4 to 6 according to Associated Press advices. Hawaiian Commercial declined five-eighths to 47 1/2 and Hawaiian sugar dropped a quarter to 36 1/2. Other quotations were unchanged.

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