

BRUISE

by
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To dig bruise-free potatoes, you have to start at the beginning by selecting the proper field or fields: Are they free from rocks, disease, nematodes? These few items may not look big in the spring, but they become giant in the fall. It is just good management to pick the best ground possible for potatoes.

Another important step is to do a good job of planting. You need straight, uniform rows and seed drops. These little items are important factors.

The next step is to get the proper fertilizer, spraying, and moisture on the crop. It's pretty hard to grow a quality crop of potatoes without nitrogen, phosphate, potash, zinc and boron. A good fertilizer program is always needed. Spraying for peach aphids, blight, mildew and mites needs to be done at the right time. Timing on any spray is important.

If moisture is applied properly at the beginning, then it has to be put on properly until the end. All it takes is one missed application of water to reduce quality and yield. Good moisture is important during harvest to get the proper amount of dirt on the primary chain.

You also need good weed control to do a good job of harvesting. A weed-free field will eliminate one element you usually have to fight during harvest time.

When should you get your machine ready to harvest? The day before or the day of? It is important to allow enough time to make sure the harvester is in proper working order. Give enough time to check gears, sprockets, and chains. It pays to have a machine in top shape. Breakdown costs money, not only for time and material, but it's also hard on your ulcers. If you have a pull-type digger, have enough horsepower. It's better to have more power than not enough.

If you own your trucks or hire custom, make sure they have enough boards in the bed. This will eliminate burning up unloading motors and breading chains. Make sure all sharp edges are covered. When digging for storage, don't let the truck operator walk on top of the potatoes when tarping. This may cause bruising.

The Operator: Is he the key to digging bruise-free potatoes? The answer is yes and no. If a harvester isn't properly adjusted, it can cause all kinds of problems. This then becomes an operator problem. This doesn't have to be the case. With the data that is available today, there is no reason why your machine can't be adjusted in order to get the least amount of bruising. No one can guarantee 100% bruise-free potatoes, but you sure can make one heck of a try. Tools are available -- all you have to do is make good use of them. It's about time we stopped saying, "I can't" and start saying "I can dig bruise-free potatoes."

Where can you, as a grower, make the most profit at harvest? If it is a small operation, the grower will usually operate his own machine. Bigger growers usually just oversee the operation. I think that during harvest an hour or so of each day should be spent watching your potatoes being graded and checked for bruise. If a grower has two or more machines, he can usually get each digger graded separately. The only way to get the bruise down is to watch your own potatoes being graded.

It is going to take two things during the 1973 harvest to get your bruise down: (1) your cooperation in using this data that has been collected for three years, and (2) a re-education of your harvest operator. Let's get into the dollars and cents of this thing. How is bruise determined?

The percent of bruise-free potatoes shall be determined by dividing the weight of bruise-free useable potatoes by the total weight of useable potatoes in the sample. On potatoes delivered from the field, bruise-free is defined as the complete absence of any discoloration, no matter how slight, on the peeled potato caused by mechanical injury or impact inflicted during harvesting, hauling or unloading. Potatoes weighing over 12 ounces shall be allowed one bruise not to exceed one-half inch in diameter.

To determine the grade of potatoes delivered, upon which the price for all potatoes is determined, a sample of approximately one percent of each load weight will be drawn upon delivery. All such samples shall be taken and held in proper storage for a period of not less than two days or not more than five days before inspection unless unusual circumstances arise that require additional time in order that a proper inspection for condition and defects, including bruising, black-spot, and harvest damage can be made.

The following bonus and penalty division will apply to all storage potatoes:

15 thru 19% Total Bruise -----	\$7.00 bonus/ton
20 thru 24% Total Bruise -----	6.00 bonus/ton
25 thru 29% Total Bruise -----	5.00 bonus/ton
30 thru 34% Total Bruise -----	3.00 bonus/ton
35 thru 39% Total Bruise -----	1.00 bonus/ton
40 thru 44% Total Bruise -----	Contract Price
45 thru 49% Total Bruise -----	Deduct \$1.50/ton
50 thru 54% Total Bruise -----	Deduct \$3.00/ton
60% and Above -----	Have option to refuse potatoes OR Deduct \$5.00/ton

TABLE I

The question may come up " . . . why are the potatoes held for two to five days?" If the samples were graded 24 hours and 48 hours after delivery, at 24 hours the sample would be 10 to 15% lower than the 48 hour samples when graded. Even after 48 hours, not all of the bruises are showing up. Grading this way delays inspection reports 3 to 4 days. This is one reason I say that the grower should be present at the time of inspection. If there is a problem with bruising and the grower is present, it is a lot easier to go back to the field and correct the problem, than trying to correct problems without seeing the potatoes being graded.

Example on bruise bonus:

24 ton/acre payable	
Contract price - \$30.00	
18.8% Bruise	
24 tons x \$30.00	\$720.00
24 tons x 7.00 =	<u>168.00</u>
	\$888.00 per acre

The \$7.00 on bonus helps out a lot. What if it works the other way?

Let's use the same figures.

$$\begin{array}{r}
 24 \text{ tons} \times \$30.00 = \$720.00 \\
 24 \text{ tons} \times -5.00 = \underline{-120.00} \\
 \hline
 \$600.00 \text{ per acre}
 \end{array}$$

Maybe this is a harsh statement to make, digging on a bruise clause; but the way a grower knows how he is doing is determined by the amount of money going into his pocket or coming out. When you are on the deduction end of a bruise clause, it hurts.

BRUISE

<u>GROWER</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>
3	--	40	45
4	55	47	26
7	44	30	30
10	--	25	9
11	55	30	40
12	35	29	16
13	--	24	36
14	36	25	27
17	--	39	37
18	<u>45</u>	<u>48</u>	<u>50</u>
AVERAGE	48%	38%	36%

The average that I have here came from the over-all data of 1970, 1971, and 1972. Over the past three years, our growers have had a reduction of bruise. The first year on a bruise contract, it's pretty hard to get top dollar.

The data that has been gathered on bruising for the past three years is quite rewarding. Our growers have come a long way since 1970. I would like to see the average bruise get down in the low twenties. The important thing to remember about digging: It's one thing to sit around at coffee saying you are going to dig bruise-free potatoes, but it's another to do it. Digging conditions are different in coffee shops than in the fields. It takes hard work to get the bruising under 20%.

For each % of bruise over 20%, it costs 50¢ a ton.

20 - 30%	=	5.00
30 - 40%	=	10.00
40 - 50%	=	15.00
50 - 60%	=	20.00
60 - 70%	=	25.00

TABLE II

These figures are arrived at because more bruising causes more rot, shrinking, shorter life of the potatoes in storage, and increases in production costs. If a grower can dig bruise-free potatoes, the processor can afford to pay more for the product. To go along with bruise-free potatoes, don't forget about quality product.

In summary, potatoes look different with the jackets on than with the jackets off. It is not the outside appearance that counts, it's what is underneath the jacket. It is about time the grower, equipment, fertilizer and chemical people start looking under the jackets. This is where the money is.