# Nuts production mix problem

Nuts Production Mix Problem Regular Deluxe Holiday Number to Make 17500

10625 5000 Total Profit Unit Profits 65 2. 00 2. 25 $61, 375 Orders

10, 000. 00

3, 000. 00

5, 000. 00

Constraints

Used

Available

Extra

Loss

Almond

0. 15

0. 20

0. 25

6, 000

6, 000

0

0. 00

Brazil

0. 25

0. 20

0. 15

7, 250

7500

250

237. 50

Filbert

0. 25

0. 20

0. 15

7, 250

7500

250

225. 00

Pecan

0. 10

0. 20

0. 25

5, 125

6000

875

1, 050. 00

Walnut

0. 25

0. 20

0. 20

7, 500

7500

0

0. 00

According to the table above and given all the resource constraints, in order

to maximize profit and at the same time having more than enough nuts to

satisfy the orders already placed, the company has to produce 17, 500 pounds of regular nuts, 10, 625 nuts of deluxe nuts and 5, 000 pounds of holiday nuts. This production mix would result to a profit of $24, 925 which is equal to the profit contribution as stated above ($61, 375) less the cost of almond, brazil, filbert, pecan and walnut nuts which is about $36, 450. Hence, 250 pounds of brazil, 250 pounds of filbert and 850 pounds of pecan nuts will go to the free store for a total loss of $1, 512. 50.

Moreover, given the above production mix, the cost per pound of the nuts are:

Regular

Deluxe

Holiday

Almond

0. 19

0. 25

0. 31

Brazil

0. 24

0. 19

0. 14

Filbert

0. 23

0. 18

0. 14

Pecan

0. 12

0. 24

0. 30

Walnut

0. 26

0. 21

0. 21

Assuming that the company can bought 1, 000 pounds more of almonds from a supplier who overbought for $1, 000, the additional profit contribution is $4, 958 which is much more than the additional cost of almond. The new production mixes are presented on the table in the next page.

Regular

Deluxe

Holiday

Number to Make

11667

17917

5000

Total Profit

Unit Profits

1. 65

2. 00

2. 25

$66, 333

Orders

10, 000. 00

3, 000. 00

5, 000. 00

Constraints

Used

Available

Extra

Loss

Almond

0. 15

0. 20

0. 25

6, 583

7, 000

417

446. 43

Brazil

0. 25

0. 20

0. 15

7, 250

7500

250

237. 50

Filbert

0. 25

0. 20

0. 15

7, 250

7500

250

225. 00

Pecan

0. 10

0. 20

0. 25

6, 000

6000

0

0. 00

Walnut

0. 25

0. 20

0. 20

7, 500

7500

0

0. 00

Hence, in order to increase its contribution profit, the company should exhaust all efforts to buy more of almonds since it is the first nut that gets used up.

If the ultimate objective is attain the highest contribution profit, then the company is better off not satisfying the existing orders. The company is better off with the production mix presented below.

Regular

Deluxe

Holiday

Number to Make

15000

18750

0

Total Profit

Unit Profits

1. 65

2. 00

2. 25

$62, 250

Orders

10, 000. 00

3, 000. 00

5, 000. 00

Constraints

Used

Available

Extra

Almond

0. 15

0. 20

0. 25

6, 000

6, 000

0

Brazil

0. 25

0. 20

0. 15

7, 500

7500

0

Filbert

0. 25

0. 20

0. 15

7, 500

7500

0

Pecan

0. 10

0. 20

0. 25

5, 250

6000

750

Walnut

0. 25

0. 20

0. 20

7, 500

7500

0

This production mix shows a contribution profit of $62, 250 which is $875

higher than if the company satisfies the existing orders. This is so because

the Holiday mix uses a lot of almond which is a scarce resource for the

production mix. Of course, the quest for profit shouldn't be the end all, be all

for the organization. The company also has to be socially responsible while

doing business, and simply ignoring orders for higher gains is not in

alignment with corporate social responsibility (Albareda 2008, p. 430).

Works Cited

Albareda, L. 'Corporate responsibility, governance and accountability: from

self-regulation to co-regulation', Corporate Governance, vol. 8, no. 4, p. 430.