3. Gravel, 2		=	1,100
Sand, 3		=	1,200
Cement, 5 bags		=	1,025
Steel bar, 10 mm, 10 pcs		=	1,300
4. Plastic for Roofing			
200 kg @ ₱140/kg		=	28,000
5. Lighting System			
a. Wiring #10		=	3,900
b. Wiring #14		=	2,800
c. Flourescent, 150 sets @ ₱200		=	30,000
6. Nylon Strings for bracing			
#3, @ 25 rolls		=	4,125
#2, @ 50 rolls		=	5,000
#1, @ 100 rolls		=	2,500
7. Labor (Construction) & Misc. Fees		=	**25,000**
Total Costs		=	**₱ 171,868**

Note: Cost varies depending on the prices of materials especially plastic roofing and coco lumber.

C. An estimate of 3,750 dozens is harvested in a 1,000 m² greenhouse planted with more or less 45,000 seedlings. There is always more or less 10% mortality rate. Assortment is as follows:

2,000	dozens	Class AA
800	dozens	Class L
500	dozens	Class M
350	dozens	Class S
100		CB

Note: These are estimates only.

D. Estimated Cost and Returns

Class AA (80 cm)	2,000 x ₱55	=	110,000
L (70 cm)	800 x ₱45	=	36,000
M (60 cm)	500 x ₱30	=	15,000
S (45 cm)	350 x ₱25	=	8,750
CB (40 below)	100 x ₱10	=	1,000
			₱ 170,750
Less: Expenses			
Seedlings @ ₱1/seedling		=	45,000
PCM (NBEM 21–35 bags)		=	6,300
Lighting requirement =			9,580
Insecticide/ Fungicide		=	35,000
Labor (Board & lodging)		=	53,100
Miscellaneous (boxes, rubber bonds, paper, plastic wrappers)		=	5,000
			₱ 153,980
Net Income		=	**₱ 16,770**

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How to Grow Mums

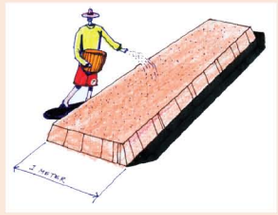
Introduction

The semi-temperate climate of Benguet favors the production of high value crops such as cutflowers. The lucrative income derived from cutflower accounts for its growing popularity as a livelihood enterprise. It is one of the fastest earning cash crops, next to vegetables. Chrysanthemums grow best in temperatures ranging from 16°C to 26°C. If the temperature dips to 14°C and below, plants will take longer time to bloom. On the other hand, if temperature goes up to higher than 26°C, plants will bloom early but wilt easily due to the heat.

Contained in this leaflet is the production technology employed by Mr. Andy Colte. Technologies presented are based on his solid experience of growing chrysanthemum under greenhouse condition for 14 years.

Cultural Management

1. Land Preparation

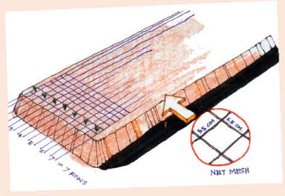


Prepare the area into plots. For every 1 m² area, apply a mixture of 1 kg processed chicken manure (PCM) + lime to maintain 5.8–6.5 pH. If soil is acidic, add more PCM with lime at two bags per 1,000 m², then water and leave for 7–12 days. Prepare 1-m wide plots. If labor is not scarce, apply lime first then prepare the area. Apply fertilizers just before planting. Furadan at 1 kg/1,000 m² may be added.

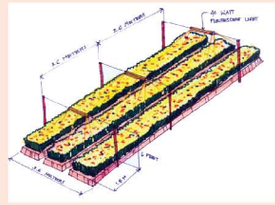
2. Netting and Planting

When the area is ready for planting, put nets in each plot. The netting should have a length and width of 5.5 cm, hence plants using the net as a guide are planted 4.5–5 cm apart. This makes a total of seven rows in a 1-m plot. Likewise, the distance between rows is 4.5–5 cm.

3. Lighting/Blacking out



Chrysanthemums require a day length of 14–16 hours. Lighting is necessary during short days. This will prevent the plants from blooming early before it has attained its best stem length. Set a 40-watt fluorescent light at 6 ft high between posts or at a space of 3.6 m x 3.6 m.



Just after planting, put on the lights for 3–4 hours everyday before it becomes dark. Do this for 23–25 days depending on the variety. Some varieties require fewer days to bloom, while others take longer. Short varieties need longer lighting days.

Blacking out is necessary during February to August. Long days make plants bloom late. Blacking out using black plastic enhances flowering. Duration of blacking out depends on the variety.

4. Watering

After planting, water the plants everyday for 3 days. After which, every other day watering is required. However, in summer, when the soil dries faster, water as often as necessary. Minimize watering during rainy days.

5. Pesticide Application

Aside from the basal application of fungicide (i.e., Furadan), apply insecticide and fungicide one week after planting. The succeeding spraying is done 4–5 days apart; but sometimes spraying depends on the incidence of pests and diseases.

6. Fertilizer Application

Fertigate 15 days after planting. Prepare the fertigation mixture of 1 sack PCM plus ½ kg Trichoderma as enzyme activator (compost fungus activator or CFA) into a 200 L drum full of water. Leave the mixture for 15 days, get 4 L from the mixture and mix it with 200 L of water plus 1/2 kg urea. Apply the mixture weekly for 4 weeks.

7. Side dressing and hilling-up

These are done when plants are about 10–12 in long. A mixture of 5 kg 16-16-16 with 1 sack PCM is sidedressed, and then hilled up. Urea application can be discontinued depending on plant vigor.

8. Spraying Growth Retardant and Flower Inducer

Depending on observations, spray foliar growth retardant if vegetative parts are growing fast or are becoming lanky. Spray flower inducer if flower initiation does not start on expected schedule. Follow manufacturers' recommendation.

9. Disbudding

Remove the top most (apical) flower during initiation to induce more side flowers. Spray type varieties can also be disbudded for this purpose. For the spray type, disbud when terminal buds are pinchable and long lateral flower buds are detachable.

Costs/Investments

A. Labor @1,000 m²/ cropping (approximately 120 days)

Particulars	Man-days	Unit Cost (₱)	Total (₱)
Land preparation	25	150	3,750
Nursery production	20	150	3,000
Planting	10	150	1,500
Fertigation/Fertilization	10	150	1,500
Spraying	10	150	1,500
Weeding/Cleaning	19	150	2,850
Watering/Irrigation	150	150	22,500
Staking/Netting	10	150	1,500
Disbudding	30	150	4,500
Harvesting/Packing	60	150	9,000
Total			**51,600**

**Black plastic for blacking-out is 4 rolls or 210 kg more or less for a 1,000 m² greenhouse @ ₱140/kg.*

B. Cost of 1,000 m² greenhouse is more or less ₱180,000. Plastic roofing may last for 6 months to 1year, depending on the quality. Greenhouse skeleton may last for 3–4 years with yearly repairs especially with the rafters/ferlins.

Estimated costs are as follows:

1. Posts/ Beam/ Rafters		
96 pcs, 4x4x12 or 1,536 Bd/ft @ ₱13	=	19,968
90 pcs, 2x4x12 or 720 Bd/ft @ ₱13	=	9,360
120 pcs, 2x3x10 or720 Bd/ft@ ₱13	=	9,360
360 pcs 2x3x10 or1,800 Bd/ft @ ₱13	=	23,400
2. Common Nails		
#5, 2 boxes @ ₱25/kg	=	1,040
#4, 3 boxes @ ₱25/kg	=	1,590
#2, 2 boxes @ ₱25/kg	=	1,200