



Semi-commercial Comparative Document

Huma Gro[®] line vs. conventional
fertilizers in 6 varieties of Pompon
Chrysanthemum





Goals

To perform a field trial to determine the response of 6 varieties of Pompon Chrysanthemum to Huma Gro[®] nutrition line compared to conventional nutrition in Rio Negro Antioquia, Colombia.

Materials and methods

Six 36-sq m beds per treatment were used for this trial. 6 varieties of commercial interest for Flores Esmeralda company were used. Table 1 and 2. Table 3 shows Huma Gro[®] formulation used for this trial.

Six beds per treatment were used for this trial, being the crop treated with water with 0.26 cubic m of Cacho.

Table 1

Volumen de agua por cama	0,26 m3
Camas por tratamiento	6
Eventos de fertilizacion	5
Duracion del ensayo	12 semanas

Table 2

Variety
Paintball Sunny
Alexis
Atlantis Pink
White Atlantis
Vero
Orinoco

Table 3

	ml/m3	
Productos Huma	Formula 1	Formula 2
Carbono N	19	29,2
Carbono phos	6,7	10,3
Carbono K	16,7	25,6
Calcium	35,6	54,8
Carbono MG	21,4	32,87
Carbono Pak	2,8	4,28
Carbono Soil	10	10
Breakout	10	10

end

Ionic balances of the formulations used in the trial

Table 4

CATION AND ANION BALANCES - FORMULATION 1						
	ANIONS					
CATIONS	CL-	NO3-	H2PO4-	SO4=	TOTAL	
NH4+		1.19			1.19	
K+	2.77				2.77	
Ca++		3.56			3.56	
Mg++				1.78	1.78	
H+			0.79		0.79	
TOTAL	2.77	4.75	0.79	1.78	10.09	10.09
					10.09	

Table 5

CATION AND ANION BALANCES - FORMULATION 2						
	ANIONS					
CATIONS	CL-	NO3-	H2PO4-	SO4=	TOTAL	
NH4+		1.83			1.83	
K+	4.26				4.26	
Ca++		5.48			5.48	
Mg++				2.74	2.74	
H+			1.22		1.22	
TOTAL	4.26	7.30	1.22	2.74	15.52	15.52
					15.52	

Variables to be measured:

1. Total bunches per treatment
2. Percentage per number of stems based on the number of bunches
3. Total unproductive stems per treatment
4. Variety response to treatment

Results

1. Chart 1 shows that treatment with Huma Gro[®] resulted in a total of 3143 stems, whereas the treatment with Commercial control product resulted in 3131 stems.
2. Unproductive stems were significantly reduced when treated with Huma Gro[®] (nearly 488) compared to 1106 stems observed in the commercial control plants.
3. For the variable Percentage per number of stems based on the number of bunches, the differences are insignificant between both treatments. Chart 3, Table 1.
4. For the response of the varieties to the treatment with Huma Gro[®] and the Control Product, Atlantis Pink and Orinoco varieties show greater response to the treatment with Micro Carbon Technology for the variable Percentage of number of stems 5 based on the number of bunches, while the other varieties show greater response to the treatment with the control product.

Chart 1. Total bunches per treatment

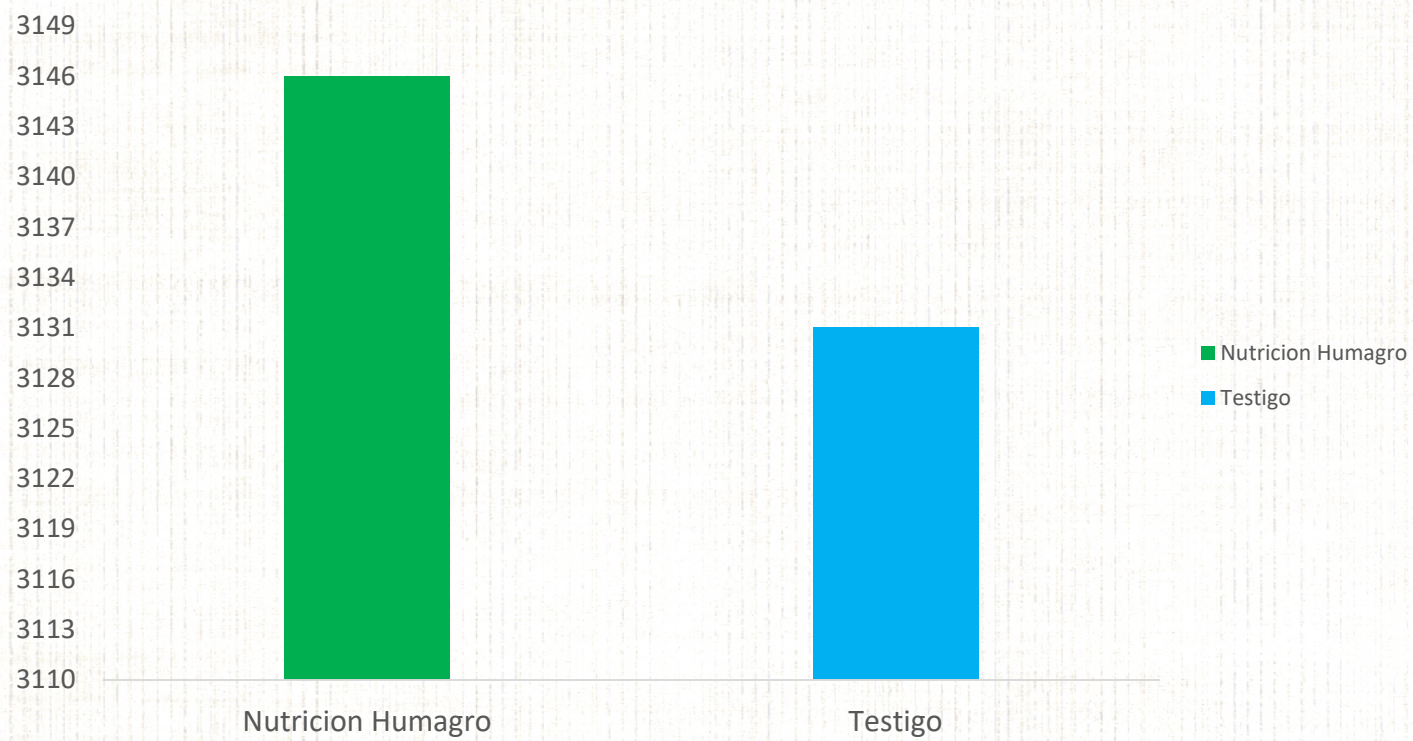


Chart 2. Total unproductive stems per treatment

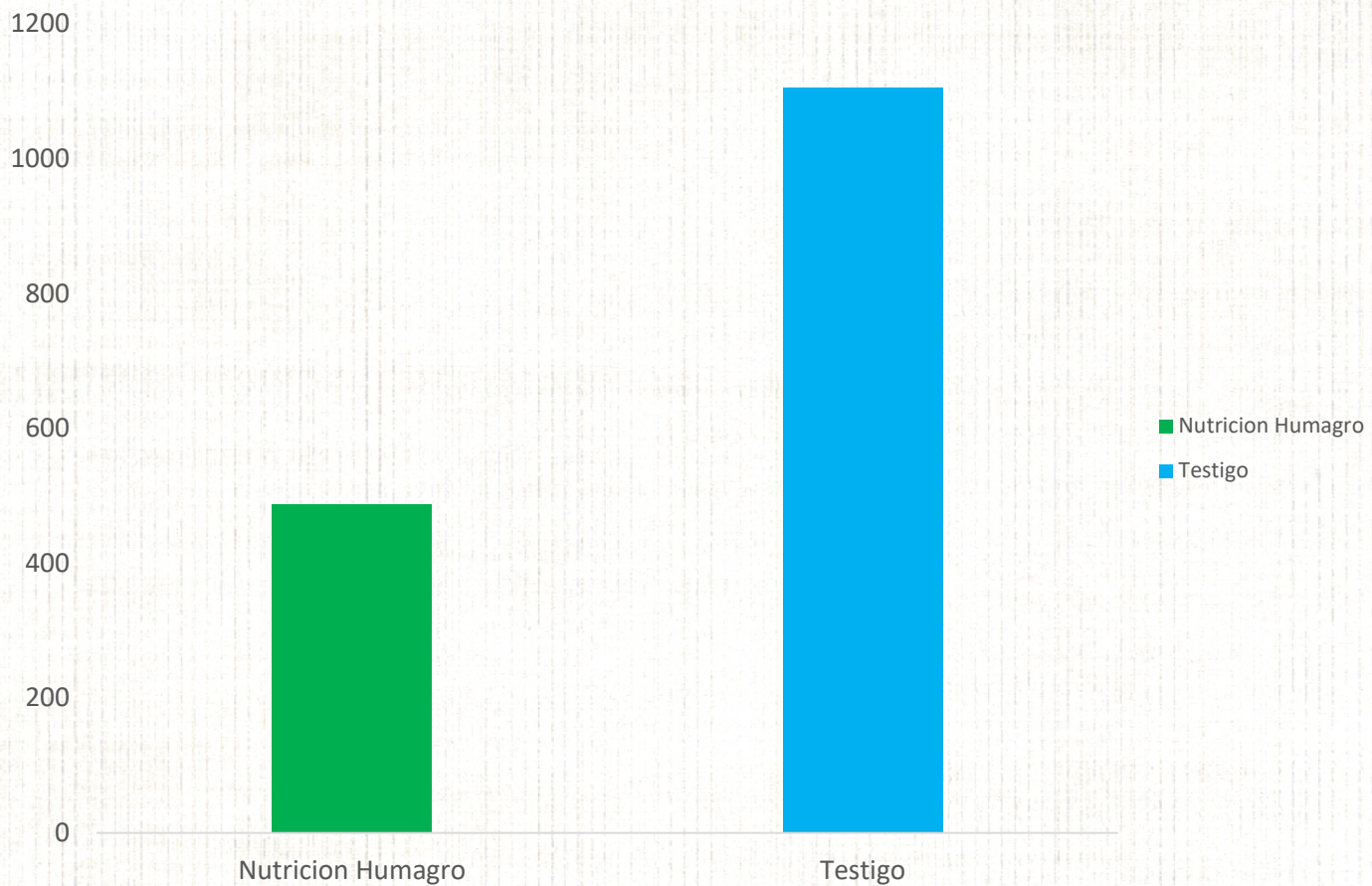
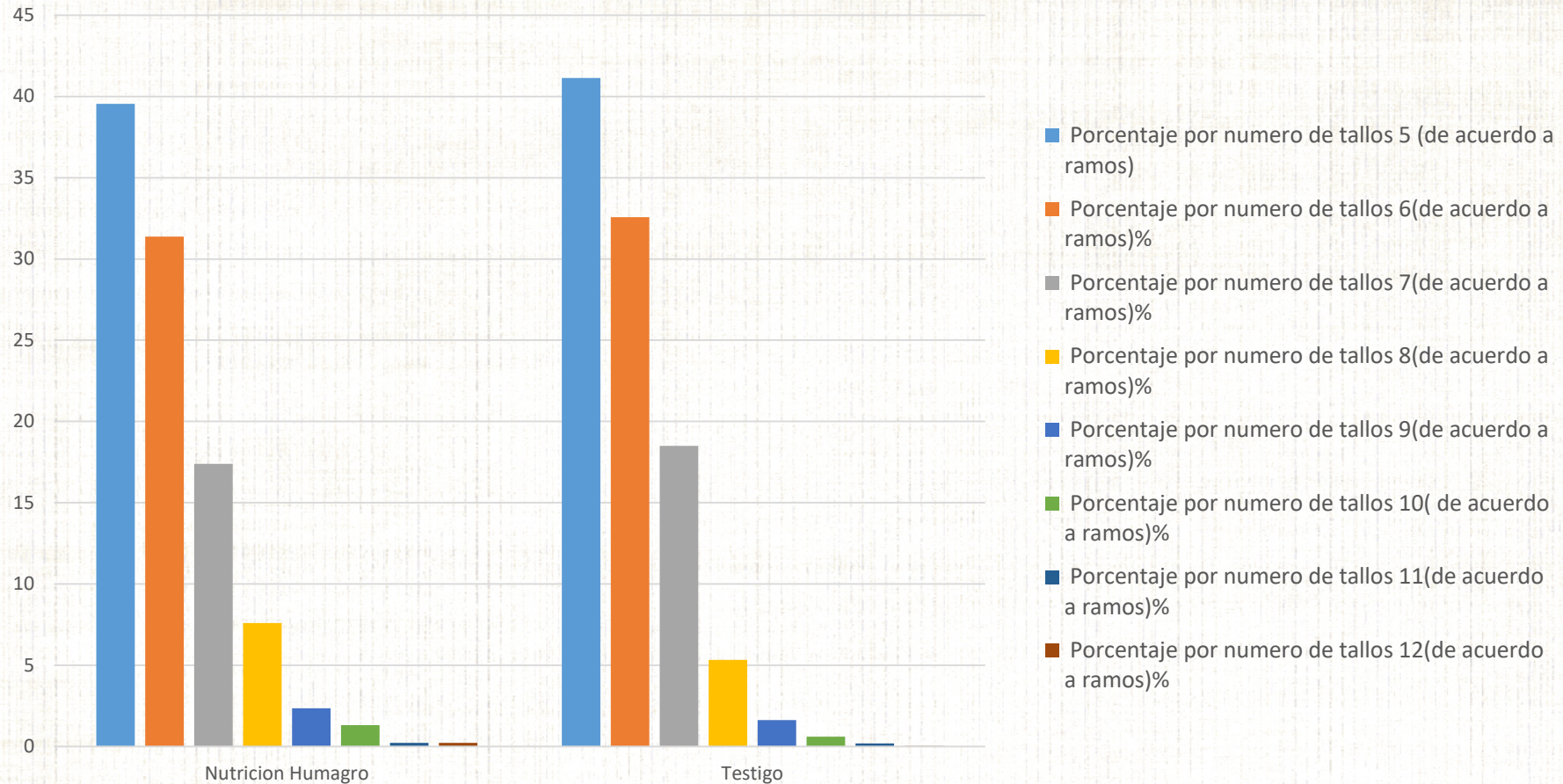


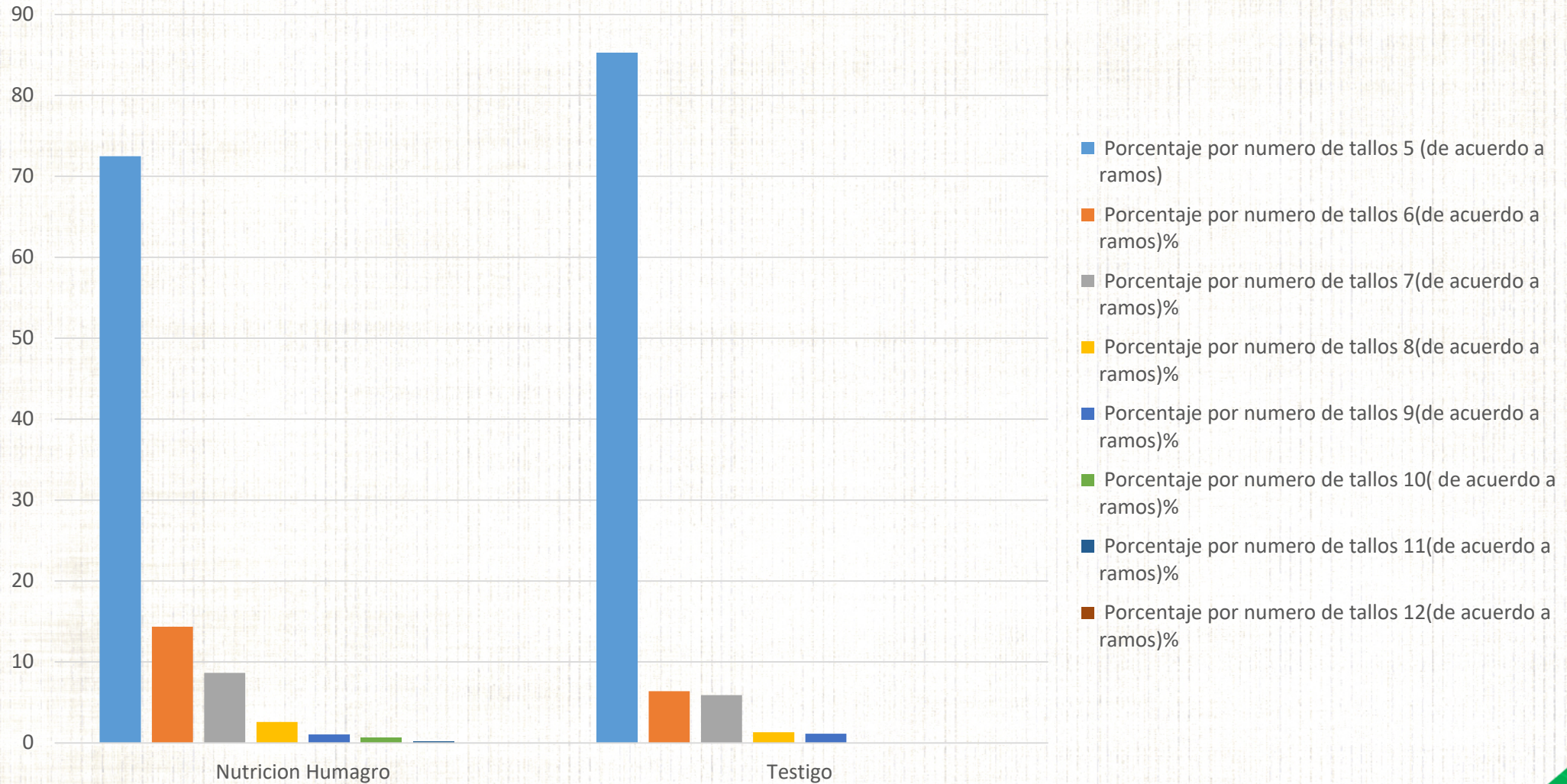
Chart 3. Percentage per number of stems based on the number of bunches



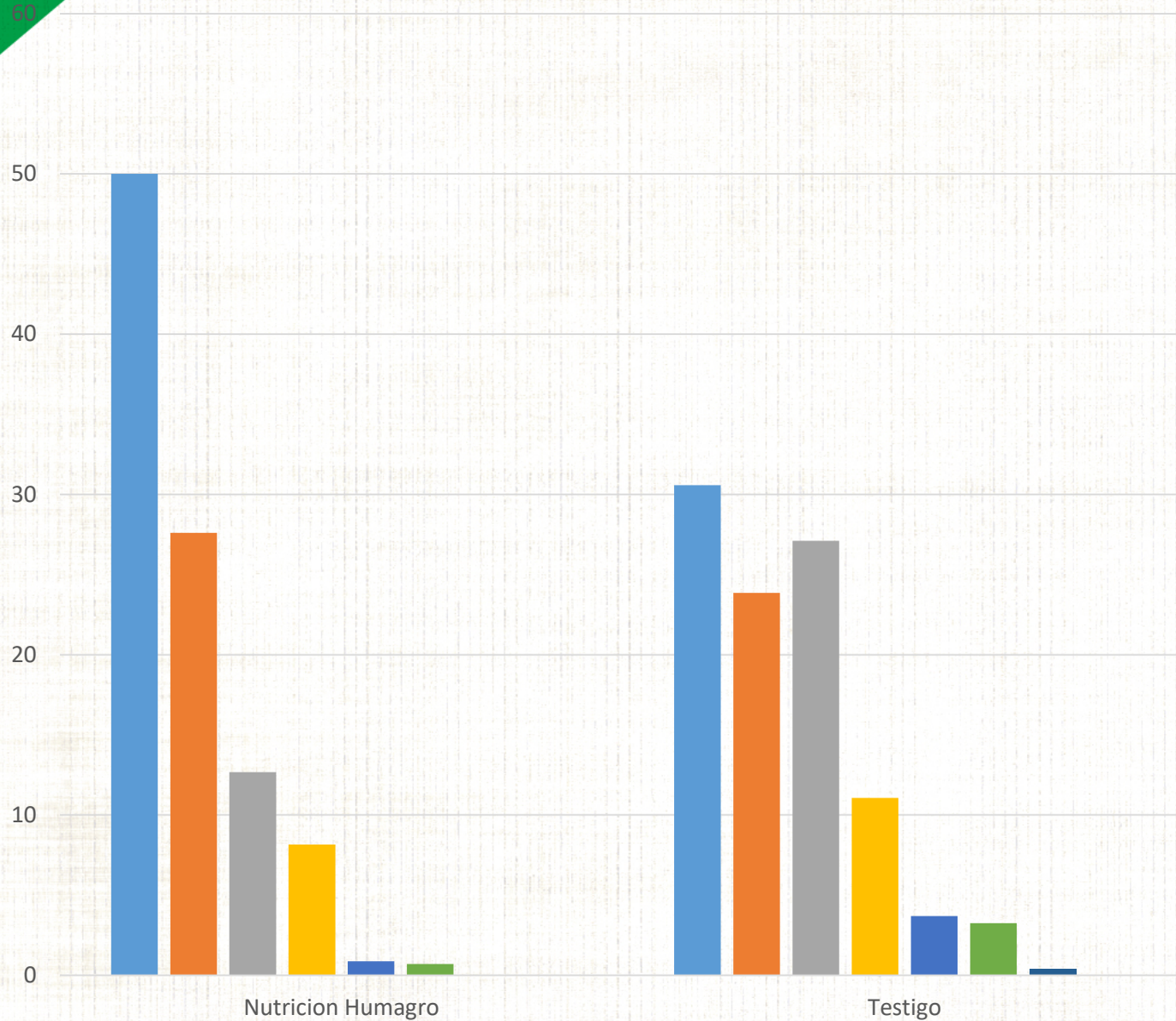
Treatment	Percentage per number of stems 5 (based on the number of bunches) %	Percentage per number of stems 6 (based on the number of bunches) %	Percentage per number of stems 7 (based on the number of bunches) %	Percentage per number of stems 8 (based on the number of bunches) %	Percentage per number of stems 9 (based on the number of bunches) %	Percentage per number of stems 10 (based on the number of bunches) %	Percentage per number of stems 11 (based on the number of bunches) %	Percentage per number of stems 12 (based on the number of bunches) %
Humagro nutrition	39.54	31.37	17.39	7.60	2.35	1.30	0.22	0.22
Control product	41.14	32.58	18.49	5.33	1.63	0.61	0.19	0.03
Aggregate Total	40.34	31.97	17.94	6.47	1.99	0.96	0.21	0.13

Variety behavior to treatment with Huma Gro[®] vs Commercial Control Product

Alexis

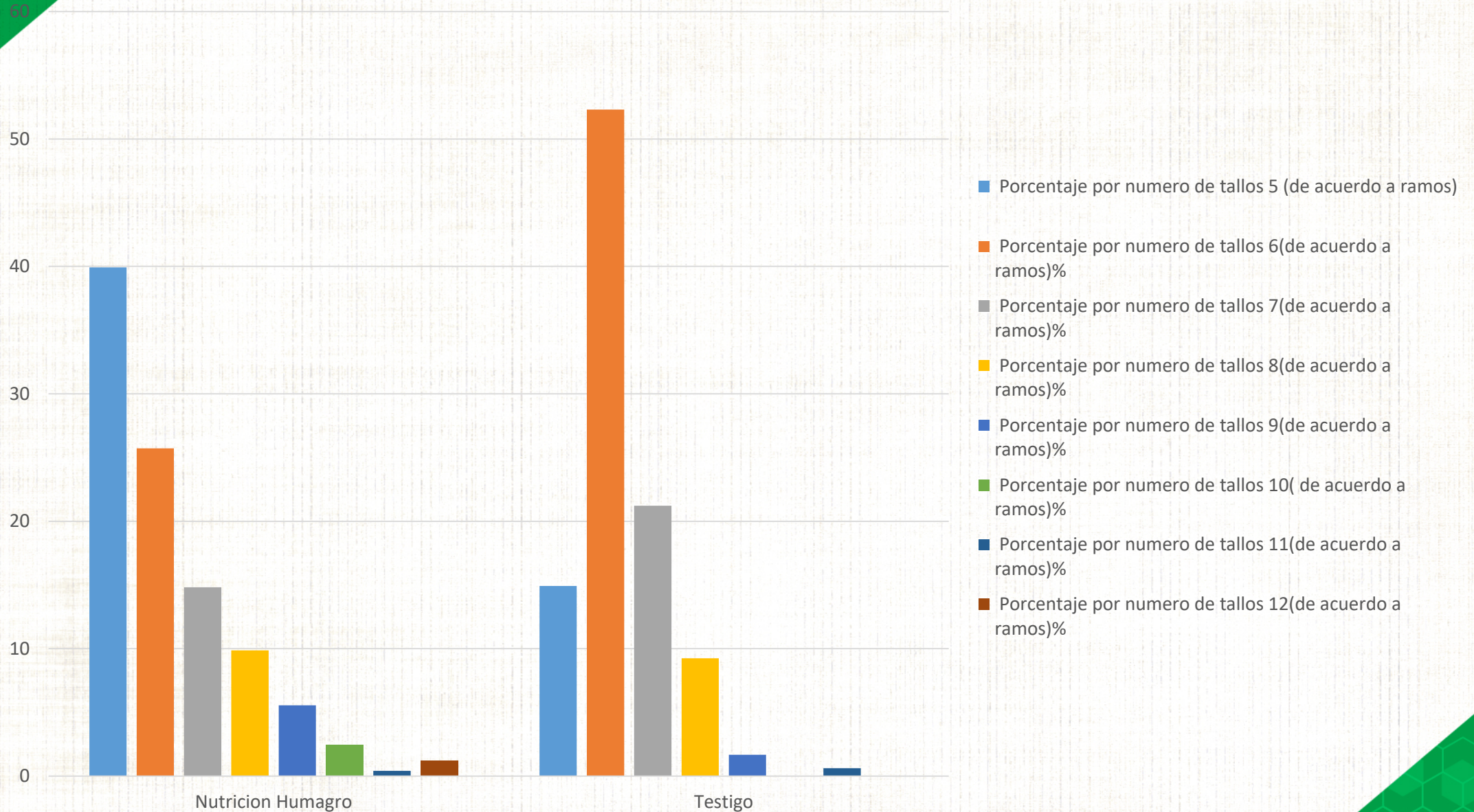


Atlantis Pink

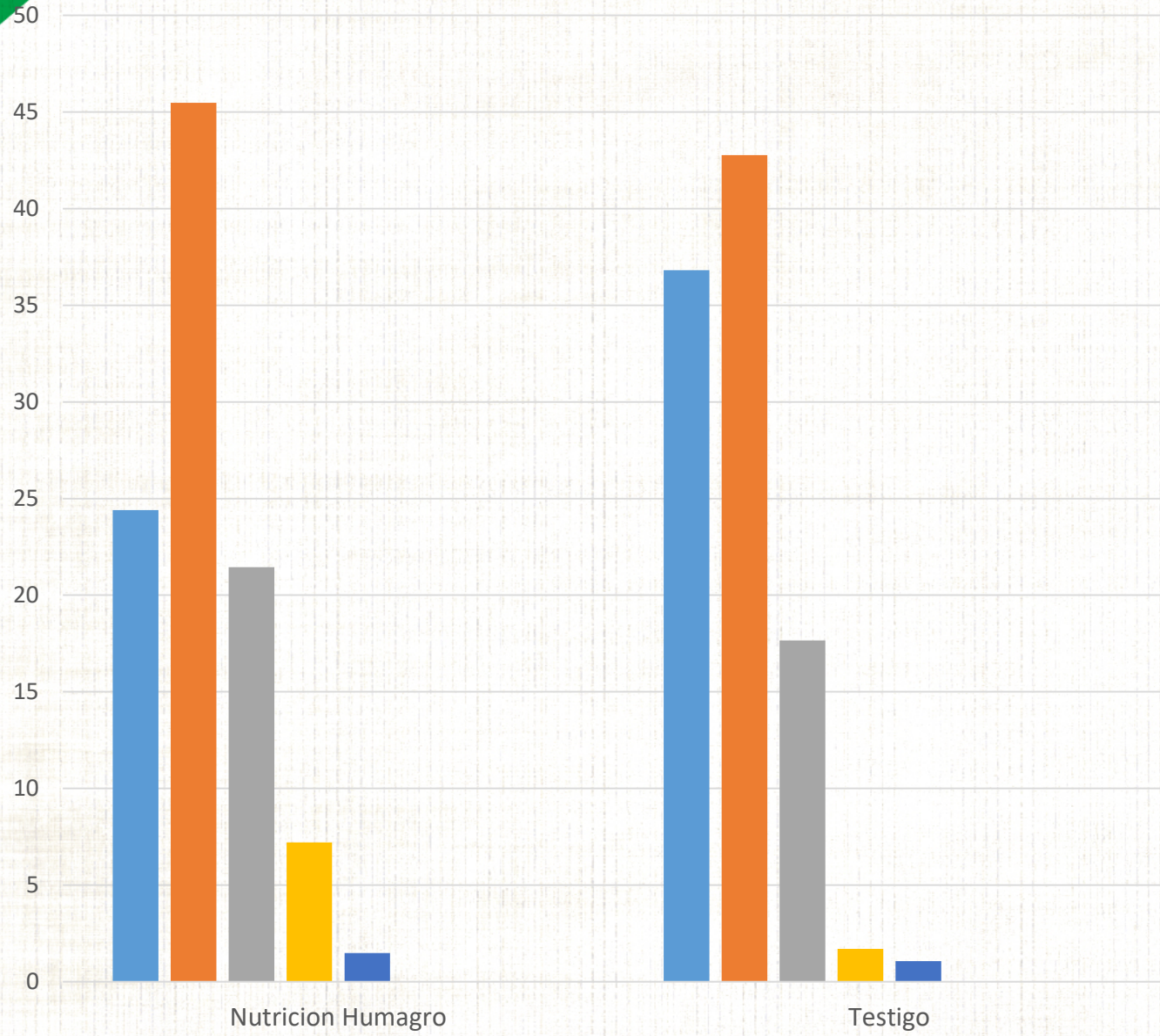


- Porcentaje por numero de tallos 5 (de acuerdo a ramos)
- Porcentaje por numero de tallos 6(de acuerdo a ramos)%
- Porcentaje por numero de tallos 7(de acuerdo a ramos)%
- Porcentaje por numero de tallos 8(de acuerdo a ramos)%
- Porcentaje por numero de tallos 9(de acuerdo a ramos)%
- Porcentaje por numero de tallos 10(de acuerdo a ramos)%
- Porcentaje por numero de tallos 11(de acuerdo a ramos)%
- Porcentaje por numero de tallos 12(de acuerdo a ramos)%

Orinoco

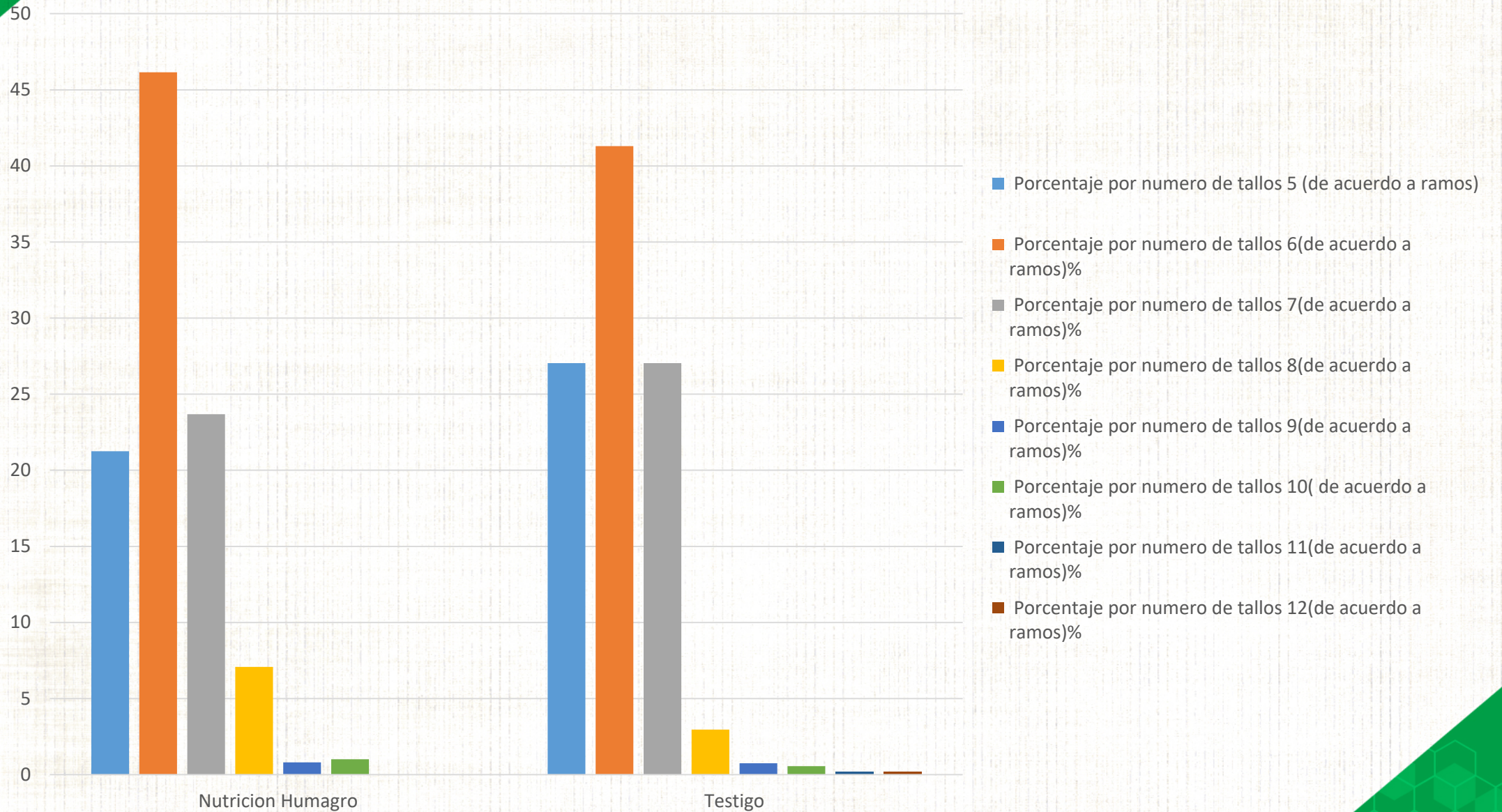


Paintball Sunny

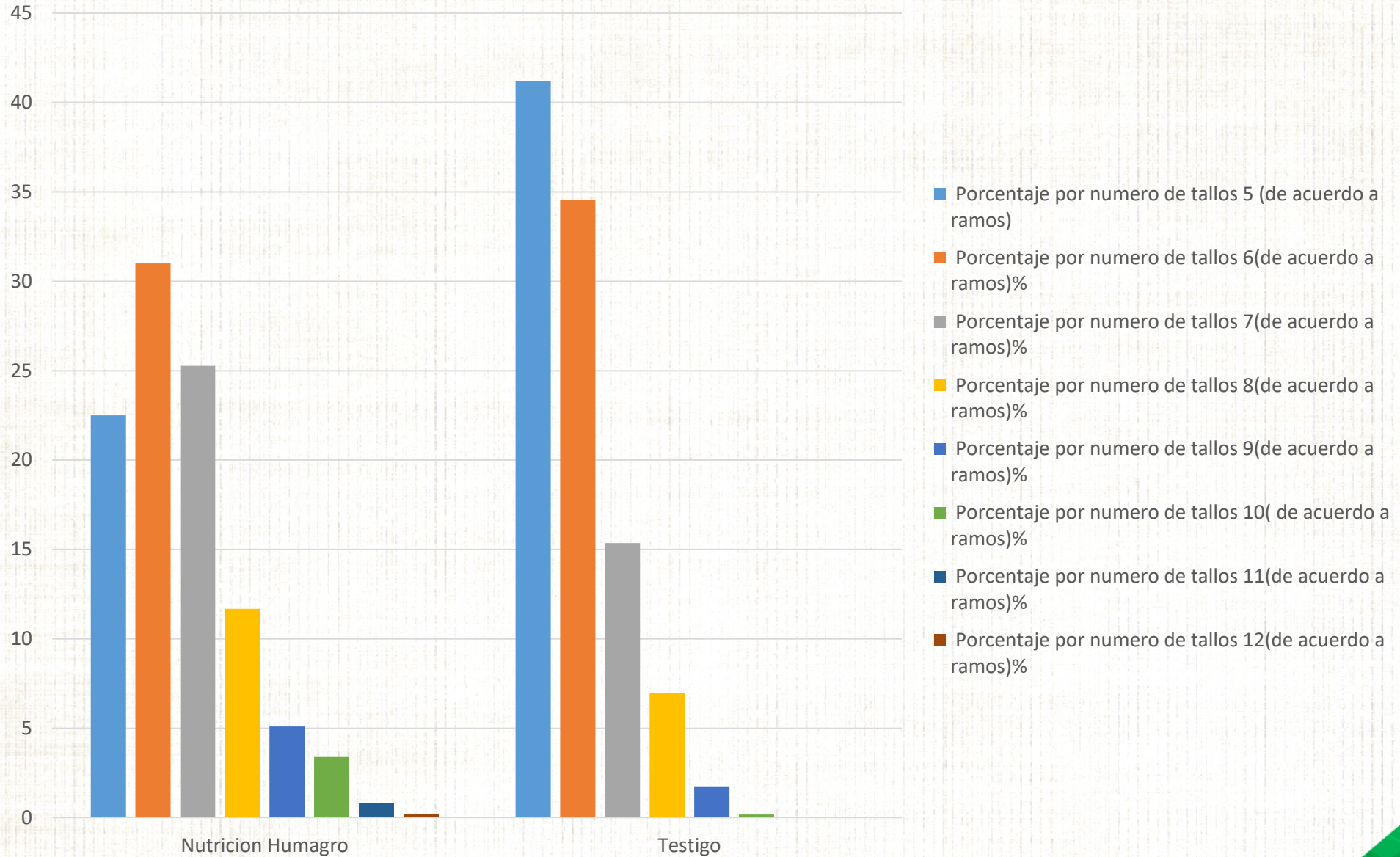


- Porcentaje por numero de tallos 5 (de acuerdo a ramos)
- Porcentaje por numero de tallos 6(de acuerdo a ramos)%
- Porcentaje por numero de tallos 7(de acuerdo a ramos)%
- Porcentaje por numero de tallos 8(de acuerdo a ramos)%
- Porcentaje por numero de tallos 9(de acuerdo a ramos)%
- Porcentaje por numero de tallos 10(de acuerdo a ramos)%
- Porcentaje por numero de tallos 11(de acuerdo a ramos)%
- Porcentaje por numero de tallos 12(de acuerdo a ramos)%

Vero



White Atlantis



Conclusions and recommendations

1. Treatment with Huma Gro[®] results in increased production of stems and reduced unproductive stems compared to commercial treatment.
2. Tested varieties reacted differently, suggesting that the nutritional treatment needs to be adjusted accordingly to achieve maximum response.
3. Based on the results of this trial, Micro Carbon Technology[®] appears to be a useful alternative to manage the nutritional plan of Pompon Chrysanthemum crops in the West of Antioquia, Colombia.