



Common Controlled Atmosphere Storage Regimes for Apples

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Table 1. Common controlled atmosphere storage regimes for apples

Cultivar	O ₂ (%)	CO ₂ (%)	Temp (°C)	Comments
Ambrosia	1.2-1.7	1-1.5%	0.5-1	<1% O ₂ with fruit monitoring (SafePod, etc.); slow cooling with 1-MCP
Cortland	1.5-2.5	1.5-2	0.5-2	Highest temp with 1-MCP; sensitive to CO ₂
Crispin / Mutsu	1.5-2.5	1.5-2.5	0-0.5	
Delicious (Red)	1-2	1-2	0-0.5	<1% O ₂ fruit monitoring (SafePod, etc..)
Empire	1.5-2.5	1-2	2	Extremely sensitive to CO ₂ ; if not treated with DPA keep CO ₂ <0.5% for 1 st month
Fuji	1.5-2	0.5-1	0-1	Sensitive to CO ₂ ; delay CA with 1-MCP
Gala	1-2	0.5-1.5	0.5-2	Highest temp with 1-MCP; <1% O ₂ with fruit monitoring (SafePod, etc..)
Golden Delicious	1-2	1-2	0-1	<1% O ₂ with fruit monitoring (SafePod, etc.); slow stepwise cooling with 1-MCP
Granny Smith	1.5-2	0.5-2	0-1	<1% O ₂ with fruit monitoring (SafePod, etc..)
Honeycrisp	2-3	1-3	3 (after conditioning at 10°C for 7 days)	Delay CA for 1 st month
Idared	1.5-2.5	1.5-2.5	0-1	
Jonagold	1.5-2.5	1.5-2	0-1	Highest temp with 1-MCP
McIntosh	2.5	2 for 1 st month, then 4.5	3	Sensitive to CO ₂ with 1-MCP
Northern Spy	1.5-2.5	1.5-2	0-0.5	Sensitive to CO ₂
Spartan	2-3	2-2.5	0.5-1	

Adapted from DeEll, J.R. 2020. Pome fruits: Apple quality and storage, p. 293-298. In: M.I. Gil and R. Beaudry (eds). Controlled and Modified Atmosphere for Fresh and Fresh-cut Produce. Elsevier Academic Press, United Kingdom.