

9 Steps

to design your cannabis production to achieve:

**easy to grow, high consistent quality,
at the lowest cost of production
with low, medium or high levels investment**

- Maximize the flower quality with high levels of THC and terpenes
- Target the lowest cost of per production per kg
- Lower the risk of major crop loss compared to either a glass house or the open field
- Regulate day length hours to control flowering and labor requirements
- Year-round production in warmer climates
- Extended summer production in colder climates
- Reduce the risk of cross pollination on outdoor crops
- Naturally cold dry crops without having to purchase a separate building
- Choose you level of capital investment per m² so that you can balance availability of capital with the level of climate and crop manipulation

Automatically control hectares of crops optimizing light, temperature, humidity and daylength while protection crops from rain, wind, hail and insects.



Step 1 Use nature to your advantage

Decide to use the natural outdoor environment as part of your crop production system

- Maximizes the flower quality with high levels of THC and terpenes
- Significantly shorter learning curve than growing indoors or in a glass house
- Has the lowest cost of production per kg of all production systems.

Step 2 Identify the risks

Decide which climatic risks are critical to manage

- Frost / cold
- Excessive heat
- Strong winds
- The impact of a hard rain
- Plants getting wet
- Hail
- Insects
- Cross pollination



Step 3 Determine production strategy

Determine whether large and extensive production or small and intensive production will be more profitable

- **Large and extensive:** cover large areas with basic climate control at a lower investment per acre or hectare
- **Small and intensive:** build smaller greenhouses
- with intensive climate control to provide year-round production at a high investment and operating cost per acre or hectare.

Step 4 Built in flexibility

Build a single purpose or multipurpose facility

- Build one facility to grow and a separate building to dry the crop
- Or build a retractable roof facility which would function well for both growing and cold drying the crop after harvest.

Step 5 Daylength control

Determine if having photoperiod control would have a significant impact on:

- **Crop quality**
 - When growing cannabis outdoors in colder climates, the flowering does not occur till mid-August in the northern hemisphere. Consequently photoperiod manipulation is essential to the efficient production of quality flowers, this allows flowering to occur during the high light and warm summer conditions ensuring high yield and quality. Photoperiod control will prevent crops from maturing in the sub-optimal fall conditions when there is high dew accumulation on the flowers, pathogen and botrytis pressures are also high leading to crop losses. In addition, cannabinoid and terpene production is low during the cooler fall conditions.
- **Crop timing**
 - Photoperiod control allows for leveling out the number of workers required since the crop can be manipulated to mature at different times.

Step 6 Size and number of blackout zones

Determine if smaller blackout zones will create sufficient operational efficiencies to warrant the increased investment in additional zones

- More zones allow for more precise control of stage of flowering which will improve labor requirements during the different stages of growth.

Step 7

Strategies to help prevent cross pollination

Determine whether it is better to protect or shift the timing of flowering

The risk of cross pollination can be reduced either by creating an indoor environment during high wind conditions simply by closing a roof and walls or by using a blackout system to induce flowering prior to outdoor crops.

Protect hectares of crops automatically in minutes using Cravo Automatic retractable roof greenhouses, cooling houses and automatic field covering systems.



AUTOMATED OUTDOOR RETRACTABLE BLACKOUT SYSTEMS



AUTOMATED OUTDOOR RETRACTABLE FIELD COVERING SYSTEMS



AUTOMATED OUTDOOR RETRACTABLE FIELD COVERING SYSTEMS WITH RAIN PROTECTION AND GUTTER SYSTEM



AUTOMATED RETRACTABLE ROOF GREENHOUSES WITH RETRACTABLE INSECT NET AND BLACKOUT SYSTEMS



Step 8 Meeting your climatic control requirements

Select what you want to be able to control

to help identify what type of retractable solution will fulfill your requirements.

HOUSE MODEL	COVERING	HOUSE TYPE			INTERNAL CURTAIN SYSTEM	
		Flat roof	Blackout	X-Frame, Rafter or A-Frame	Insect net or cooling / heat retention	Blackout (A-Frame or rafter only)
	Select control required					
Frost		✓	✓	✓		
Season extension in cooler climates		✓		✓	✓	
Year round in warm/hot climates		✓		✓		
Minimize dew accumulation on plants		✓	✓	✓		✓
Excessive heat		✓		✓	✓	
Strong winds		✓	✓	✓		
Impact of a hard rain		✓	✓	✓		
Keep plants dry during rain				✓		
Hail		✓	✓	✓		
Insects					✓	
Cross pollination		✓	✓	✓		
Photoperiod			✓			✓
Cold dry crops after harvest				✓		

Step 9 Design your facility

Detailed design guidelines for the retractable roof production system

Refer to our “10 steps to designing your retractable roof production system” brochure for product details and specifications

Contact us to learn more for how we can help you grow the most natural crop with the lowest risk and cost of production.



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