

Growing Barley Grass

by Ian Watt

The cost of hay has steadily risen to the point where it represents a very high proportion of the operating costs of an alpaca business – and it is not likely to go down in the foreseeable future.

Japanese and Chinese buyers are hand-picking the west coast hay crop each year, drought in Texas has driven demand up (and prices with it) and continuing high diesel prices are not likely to drop in the short-term, if ever.

Associated with the cost of hay is storage costs and this usually involves a barn and some form of loading/unloading and distribution to the animals. Loss through mold, dampness, mice infestation and general degradation of a perishable crop all add additional dollars to the cost of hay.

Alpacas need hay in their diet but they do not need for it to be such a large part as many think in areas where pasturage is a luxury more than a given. Even those areas where pasture is readily available for spring, summer and autumn, there are the winter months where hand-feeding consumes resources and dollars.

Hay is green feed harvested, dried and packaged; grain is the product of a green crop and pasture is just grass and legumes growing in the ground.

Growing barley in a controlled artificial environment is an attractive option when feed costs are as high as they are now.

Consider this:

A pound of barley kept damp in a controlled environment can produce as much as 10 pounds of green matter in 8 days.

By keeping the grain damp and allowing nature to take its course by providing adequate daylight-quality light, just enough water and a warm atmosphere, an alpaca grower can grow as much as 120 pounds of green grass a day in a twelve by four foot cabinet seven feet high.

The grass is about seven inches high and is nutritious down to the roots and spent grain making it a complete food for the alpaca filled with high quality protein (between 20 and 22%) which is highly digestible, oodles of vitamin A, good mineral balance and the bonus of enzymes that disappear as grass grows – think every advantage that wheat-grass in health food shops bring to humans!

Being someone who prefers to build than to buy, I developed a cabinet model for us to grow 120 pounds of grass a day which I hope will replace between 50 to 60% of our current hay consumption – hay costing us more than \$17 a bale last year and expected to

near \$20 (delivered and stacked) this year. I made the cabinet myself and assembled it with some assistance; the irrigation system was a joint project with a landscaper.

My primary aim was to make it easy to operate for both cost reasons and for labor – it was important that it be easy to see what the day's crop was, easy to replace the re-seeded trays and minimal time spent at the cabinet. Cost of construction was paramount as my aim was to get the total cost back within one operational year.

Having finished and operated the unit for some weeks now, there are some things I would do differently and I am sure that others who see the unit will come up with their own tweaks that will make their own operations much simpler and perhaps cheaper to build. For example, I would not use linoleum as the waterproofing material again, I would use heavy-duty construction plastic as both a cheaper and easier to install alternative and thus save over \$100 and several hours of construction time.

Most models I have seen operate from one end for seeding and take the grass out at the other end (achieved by pushing all the trays forward as each full tray is removed and each reseeded tray is added) whereas mine is cabinet-style with doors that swing open so that everything is seen at once and trays are removed and replaced in the same position each day – I just like the idea of a limited space cabinet for both operational space requirements and simplicity and cost of construction.

Ideally, in this unit, we would take out 12 18 x 12 inch trays of grass a day and replace the grass with just over a pound of barley grain on each tray moving to a new bay each day – it is that simple!

The cabinet is made from 4x2 pine studs covered with half inch particle flooring and packed in-between with alpaca fiber. The walls are lined with floor-quality linoleum as a water-proof surface although I would replace that with high density construction plastic sheeting if I were to build again (cheaper and easier to install). The racks are made of 1.25 inch PVC piping (I would make it out of 1 inch next time) on a 1.25 inch frame.

The irrigation system is ordinary half inch garden irrigation poly with manually set misters for water (I would bring them in from the end and along each tier in a future model) operated by four ordinary Toro garden sprinkler, battery-powered timers which allows for quantity control through timers rather than hand adjustment. We have found that one minute each two hours seems to work well for every phase of development of the grass but others use different times.

The floor is slanted to permit draining to a gutter running along the outside of the cabinet.

A maximum and minimum thermometer records inside and outside temperatures and a simple clock-work timer operates the lights that come on for 18 hours a day.





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