Crofts & Small Farms - Polyunit Comparison

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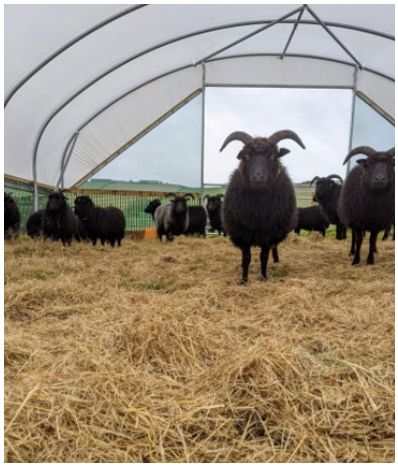
Polytunnels and similar structures (polyunits) provide a means of extending the growing season as well as allowing growth of a range of products that may not be typically grown due to climatic conditions or soil capability. They are also useful for housing small numbers of sheep. In recent years crofts and small farm businesses in particular have realised the benefit of polytunits to improve the enterprises on their holding, or start new enterprises. The three main types that are considered by most small holders and crofters are the Polytunnel, Keder Greenhouse and the Polycrub.

Polytunnels are the most widely used and commonly known polyunit on the market. Uses of a polytunnel range from domestic scale enterprises right up to commercial level. Polytunnels are the most versatile of all polyunits due to the variable size range as well as design available for livestock use, general agricultural/ horticultural storage and use as a growing house for fruits, vegetables, flowers and other horticultural products.

Polytunnels tend to be the more cost-effective choice but with that there are limitations to areas where they can't withstand the adverse weather conditions and wind speed, even with a reinforced frame design. Additionally, the polythene sheeting perishes after a few seasons and can be soft, and easily damaged. However, in line with the cost-effective nature of polytunnels, the value is in the steel or aluminium frame itself and resheeting a polytunnel is not as expensive an endeavour as using more polycarbonate or glass in greenhouses.

Keder Greenhouses



The Keder Greenhouse is a substantial upgrade in design from the conventional polytunnel in terms of materials used and can withstand areas where wind speed and snow load can be an issue.

The design is not dissimilar from a conventional polytunnel but what makes the Keder Greenhouse more distinct is that the framework is thicker high tensile steel and utilises the unique Keder cladding. This material looks and feels like a particularly thick and robust form of bubble wrap which has been designed to be effective and efficient for light transparency and thermal regulation.

Keder greenhouse come in three ranges, Domestic, Small Holder and Commercial. Each range offers a different sizing package of 3m/4m widths up to 12m in length, 4m/6m widths of up to 20m in length and 6m/8m wide

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Built-in ventilation not only makes them suitable for horticultural enterprises but effective for livestock housing as well. As heat and condensation rises from the animals there are enough roof vents to allow heat and moisture to escape.

Polycrub

The Polycrub is certified to withstand a maximum effective wind speed of 120.15mph which makes the units particularly suitable for exposed areas. The materials used are primarily timber, polyethylene tubing (repurposed from disused salmon farm tubing), and translucent polycarbonate twin ply sheeting which acts as the cladding. The timber posts are concreted into a relatively even/flat area to which the salmon tubing is fixed over under tension which then acts as the ribcage for the unit. Timber rails are fitted as fixture points for the polycarbonate sheeting to be attached to. The materials and design make it not only useful against weather but less likely to be damaged in ways that a polytunnel or Keder may be, such as cattle horns or gardening forks through the covering.

The Polycrub is fundamentally aimed at horticultural production, however, new variations of the units have accommodated slightly improved ventilation, larger double end doors and opaque polycarbonate sheeting to reduce temperature by reflecting sunlight therefore more suitable for short term livestock housing.

Material

In addition to considerations to size, framing material and price, another important factor to navigate is the cladding material type. Each type of polyunit uses a different style of poly material that will differ in functionality. How to determine which material is best for you depends on two main values; the R-Value and the U-Value.

R-Value is the measurement of how effective a barrier is at resisting conductive heat flow. Simply put, the higher the R-Value of a material is, the more effective the insulation.

The U-value is the measurement of how well a material conducts the transfer of heat. In the instance of a polyunit, the lower the U-Value means less heat is lost through that material barrier. Depending on your chosen enterprise, the values shown may be important, particularly when considering livestock housing vs horticultural growing. Thermal regulatory efficiency of a unit will have an impact on your chosen enterprise.

Material	R-Value	U-Value
Conventional Greenhouse Glass Pane	0.95	1.05
Polycarbonate	1.89	0.53
6mm polythene sheet (single layer)	0.85	1.2
6mm polythene sheet (double layer)	1.25	0.81
Keder Cladding (Bubble Wrap)	1.7	0.50