Silvopastural systems in Colombia

In 2015, Carol Davis from AHDB went to Colombia as part of the *agri benchmark* initiative.

AHDB belongs to the *agri benchmark* Beef and Sheep network, which provides international benchmarks. See [www.agribenchmark.org](http://www.agribenchmark.org) for more info.

Colombia is the third largest beef producer in South America. It features tropical pasture beef production systems and dual-purpose systems – milking cows with suckling calves – are common. Traditional grazing management systems have led to overgrazing and land degradation.

All the farms visited were in the tropical dry forest area in the Cesar department of Colombia. The area is about 500,000 hectares. Only around three per cent of the original tropical dry forest is left, most has been destroyed for agriculture. There has been four centuries of cattle ranching in this area, based on cattle from Spain. From the 1960s the forest was destroyed and cotton production dominated. The area was affected by civil unrest and terrorism in the late 1990s, but cattle have started to come back.

The concept of silvopastures has been introduced to potentially increase production and profitability and improve animal welfare whilst being sustainable, reintroducing forest areas and increasing biodiversity. A key to introducing this is setting up demonstration or ‘model’ farms in local areas that are of a similar size and current production system to others in the area.

To be part of the project farmers have to adopt the systems, own the land and be a cattle rancher. They will receive free advice for five years. The project is costing US$30 million.

Silvopasture systems are being promoted and set up gradually to allow for steady adoption and acceptance and to ensure that there are enough cattle produced to sustain the increased productivity and demand for cattle. There are various silvopasture system variations but the principles are that trees are grown with legume shrubs planted between them and grasses between the shrubs.

**Beef finishing farm visit**

The farm is 200 ha; 140 ha planted with intensive silvopastoral systems and timber trees (*Eucalyptus tereticornis*); 60 ha are conservation areas, roads and buildings. There is one manager and two cattlemen.
The soil is moderately fertile, sandy soil. Average annual temperature of 32°C and average annual precipitation of 1090mm per year, mainly in May and November. Before establishing the silvopasture system the farm finished between 70 and 90 animals a year, this has now increased to 500 per year.

The pictures below show an area that has not yet been converted to an intensive silvopasture system and an area planted in 2012.

They are planning paddock size so cattle can graze them for more than one day. The paddock areas are an average of 2 ha and each paddock is rested for an average of 40 days with approximately eight grazing periods a year.

The benefits of the silvopasture system have been found to be:

- In traditional systems with few trees the only areas to benefit from biomass and manure are under the trees. In a silvopasture system using regular planting of trees, shrubs and grasses the organic matter is more widely spread.

- Animals having sufficient water and food grow better and are calmer, making them easier to handle. When moving them, they can be walked more easily.

- The trees provide shade and the temperature is much lower in these systems so the cattle are able to eat all day.

- Areas can be planted with native and timber trees and the timber trees can be cut after three years and used as fencing posts. The trees also act as a windbreak as the winds are more drying than the sun.

- The soils are not compacted due to the vegetation and low grazing density. The rain can penetrate further than in the traditional pastures.

- Biodiversity has increased with increases in wildlife species, large and small.
Plot 1
Planted 2012 conventional silvopasture system. Cattle growing around 544 grams per day.

Plot 2
Planted 2010, conventional silvopasture system using a mixture of Eucalyptus and some native trees. Pre-fattening cattle growing 930 grams per day.

Plot 3
Planted 2013 with scattered native trees, leucaena and grasses and no timber trees. Fattening cattle growing 920 grams per day.