Shelterbelts

Ben Law,
Senior Forestry Consultant,
SAC Consulting
Why Shelterbelts?

- Reduced Wind Speeds
- Reduced Evapotranspiration
- Reduced evaporative chilling of livestock
- Reduced ewe mortality following shearing
- Reduced feed costs
- Reduced Soil Erosion
- Improved Lamb Survival
- Improved Weight Gain
- Improved Milk Yields
- Improved Animal Welfare
- Improved Flood Prevention/Soil Stability
- Improved Biosecurity
- Screening of Farm, Livestock, & Buildings
Location

- Thinking about your own unit, what are your soils, your growing conditions, your weather, and your particular challenges faced?
- What are your primary objectives for planting, and where would planting a shelterbelt integrate well with your existing operations/target future operations?
- Where are you planting?
- Why are YOU planting?
- What are you planting?
Design

• Intended Purpose?
• Windshield - Livestock Protection
  • Virtually Impermeable Woodland (<40% porosity)
  • Reduces Windspeed by up to 90%
  • Wind speed reduction up to 10 times tree height
  • Maximum shelter within 3 to 5 times tree height
  • Completely stops wind within small area
  • Best for livestock protection
  • High turbulence patterns in field
• Intended Purpose?
  • Permeable Woodland– Arable Protection
    • 40– 60% porosity
  • Reduces wind speed by up to 70%
  • Wind speed reduction 20 – 30 times tree height
  • Achieves reduced wind speeds across large area
  • Little turbulence, well above ground
• Best for crops and silage
Species

• Tailor your species choice to your site conditions, objectives, and grant model requirements.

• Plant the right tree, in the right place, for the right reason.
Porosity
Size

- What area is potentially available to plant?
- What is your minimum size for grant requirements?
- Ideal width is at least 20 metres
- Too many individual variables to dictate an “optimum” size or length—be guided by what works for you & your business, fit the woodland around what is important for you.
Shape & Orientation

- What is the main wind direction?
- Are there any natural features such as watercourses to follow?
- What land is available for planting?
- Maximise planting area, minimise fence length (if fencing).
- North-South minimises shade, but might not suit wind conditions on your site
• Maximise planting area by rounding off field corners—try make improvements for future livestock herding, biosecurity and landscape at same time

• If possible, link shelterbelts across multiple fields and using different orientations to maximise shelter and benefits
Other Factors to Consider

- Grant Contract Requirements
- Maintenance
- Initial costs
- Threats
- Access requirements—now and future
- Permanent Feature
- Carbon
- Safety