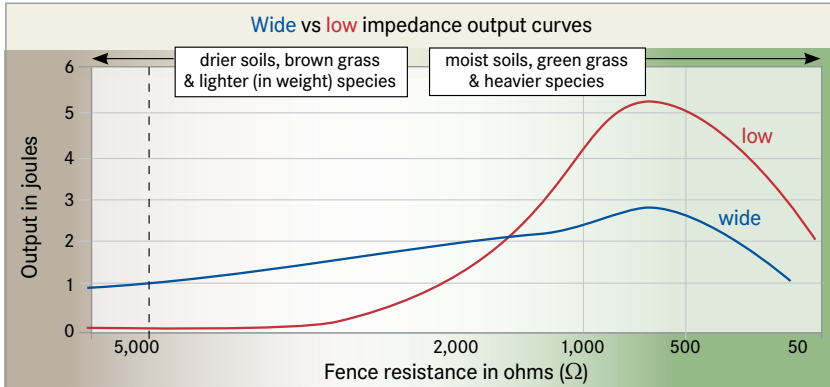
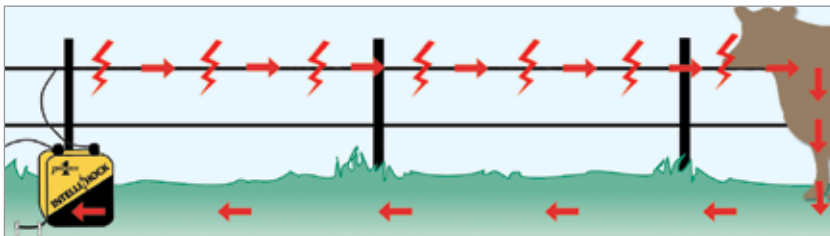


# Energizer Impedance—wide vs low?



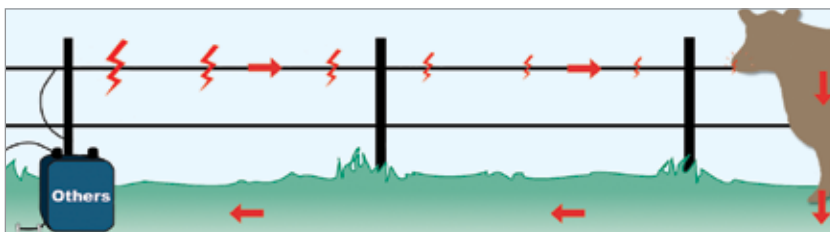
1. **An energizer's output is not a constant!** The stated number on the outside of the box is a **peak**. It's never more than stated and almost always much less.
2. The curve is important. The chart above illustrates 2 output curves in joules. One is that of a wide-impedance unit with 2.7 joule peak output. The other a low-impedance unit with 5.2 joules peak output.
3. **Low-impedance units excel** when the soil is moist, the grass is green, the animal is a good conductor, and there are plenty of ground rods.
4. **Wide-impedance units excel** when the total resistance is higher—from brown grass, dry soil (but not arid), the animal is not a good conductor and total ground rod length is less than it should be.
5. The higher an energizer's peak joule output is at 500 $\Omega$ , the more likely it will be effective when there is high green-weed contact on the wires close to the ground.
6. The higher an energizer's output in joules at 5000 $\Omega$ , the more likely it is to be effective when the soil becomes dry.

## Why animals respect wide-impedance energizers!



### IntelliShock and Kube energizers

Wide-impedance energizers are able to deliver high-pulse energy levels and high voltages *through* a wider range of fence situations—including those with high total fence circuit resistance due to inferior polywire/netting; dry, sandy, rocky soils; dry, brown grass; and fewer ground rods. Animals have greater respect for and fear of such fences when energized by wide-impedance units.



### Most low-impedance energizers

Illustrates how the joules of pulse energy at the end of the fence (and thus the potential pain available to animals) drop as the total resistance of the fence circuit increases—due to wet soils becoming dry, reliance upon stainless steel polywire and tape fences, or fencing across sandy/rocky soils. Low-impedance energizers deliver high pain potentials when the resistance is low (*hence their well-deserved reputation for working well when the soil is moist and the grass is green*), but much less as the combined resistance of the soil, animal and wire rises.

## Wide vs High vs Low impedance energizers

*Impedance is similar to resistance. For energizers it means the level of ohms (resistance) that matches an energizer's peak output. If low ohms then it's a low-impedance energizer, etc.*

The first fence chargers (50 years ago) were high-impedance units.

Their maximum output occurred when the fence was weed-free. They could cope with drier soils but *were very vulnerable to weed contact*.

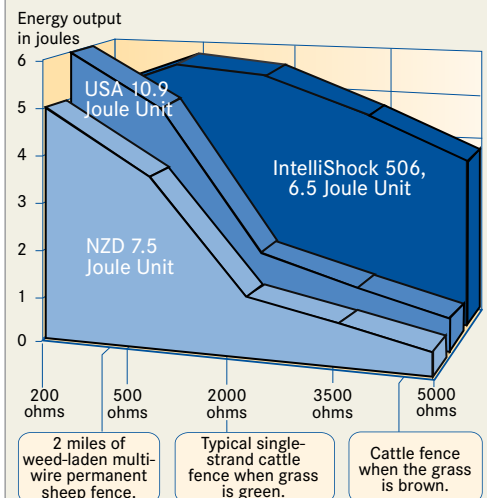
Most were too small in energy output/pulse to be effective against difficult-to-contain animals (sheep, goats, chickens).

The next generation was low-impedance energizers. They coped well with high weed contact but not with dry soils or poor conductors.

They work best against low-resistance animals (cattle, horses, pigs) standing on moist soils.

"Wide-impedance" is Premier's term for energizers that perform well in **both** dry and wet soils and in green and brown grass.

In dry soils or with animals of high resistance (goats, wildlife and poultry), wide-impedance units outperform low-impedance units of similar output.



This graph compares 2 low-impedance units with a wide-impedance energizer—IntelliShock 506.

- Note when each excelled.
- Note also that the larger low-impedance unit did better than its low-impedance little brother in all conditions.