Revision of grazing capacity chart and calculation approaches

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Grazing capacity has since the early eighties been based on a large stock unit (LSU) or animal unit. It has been defined as an ox which weighs 450 kg and which grows at 50 g per day on a grazing field which are 55% digestible.

To reach this goal, the ox theoretically needs 75 megajoules metabolisable energy per day, which is more or less equal to 9 kg dry feed on the grazing field which are 55% digestible. The intake of dry feed will be somewhat different if the grazing fields’ digestibility is less than 55%. The value of the LSU definition is that all classes (young, adult, pregnant, lactating, etc.) within species, which have different energy needs and as well as between species, can relatively be expressed. Replacement values can be calculated based on accountable energy needs.

When this has been done, grazing capacity can be calculated. However, it should be kept in mind that species differ in their feed preferences. Some prefer grass, other shrubs, some prefer tree leaves, and some prefer to have a mixed diet. The quantitative occurrence of these plants must be calculated on each farm to determine how many of a species can be kept.

The grazing capacity standards which has been determined in this way and which are officially enforced by the Department of Agriculture, Forestry and Fisheries (DAFF), are based on grazing field recordings with plant materials which has been physically cut in enclosed areas where animals can’t graze. Furthermore, it is supported by photographs that have been taken over time. While this has been very handy, the time has come to re-evaluate these standards because 30 years has passed and grazing fields has changes, as well as techniques.

It is now possible to determine grazing field bio mass and specie composition by distance observation, supported by satellites by way of sophisticated techniques of carbon recording, net primary production and water usage efficiency. This type of
studies is undertaken by Dr Tony Palmer of the ARC in Grahamstown amongst others. In certain cases, the existing standards did not make complete provision for the fact that animals do not eat everything, but prefer to be selective, even with their favorate plants.

In the first approach to new standards, it has been brought into account by increasing the amount of 9 kg dry fed per day to 11.25 kg. While a lot of work still has to be done to make a new grazing capacity guideline available on district level, it is possible to indicate that the grazing capacity of the different provinces changes systematically from the high rainfall areas to the low rainfall areas as follows:

Gauteng: 4-5 to 8-10 ha per LSU; KwaZulu-Natal: 1-2 to 6-7 ha per LSU; Limpopo: 3-4 to 15-20 ha per LSU; Mpumalanga: 1-2 to 8-10 ha per LSU; Northern Cape: 15-20 to 35-40 ha per LSU; North West: 3-4 to 35-40 ha per LSU; Eastern Cape: 2-3 to 15-20 ha per LSU; Free State: 2-3 to 20-30 ha per LSU and Western Cape: 2-3 to 20-30 ha per GVE. Obviously, in certain areas there are only cattle farming while in others, there are only farmed with sheep or goats and these figures will have to be adjusted according to the type of farming.

It is also important to take note of the following. Over years, people made changes to LSU calculations to make it easier, or because they felt an approximate value is sufficient. In sheep areas, LSU values has been changed to small stock units, because the animals masses in the original publications were outdated, as animals became overall heavier. This practice is acceptable in certain cases, as long as people realize that an approximate value may work well in a specific calculation area, but not in another area.

Be aware of figure approximation or approximate values, because these figures are of critical importance when farming planning are being done and when gross value margins per LSU are calculated.