LANDSAT DATA - AN AID TO FERTILISER MANAGEMENT OF PASTURES

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Landsat data for green, red and near infrared radiance from pastures are now routinely available in Australia. However, while significant use has been made of these data for management of vegetation ranging from the arid zone to forests, coastal wetlands and marine environments, little use has been made of the data to manage improved or partly improved pastures and grasslands.

When processed by appropriate computer software, the satellite data can be converted into a digital map of pasture growth which is then available for use by advisory officers via a mid-range personal computer with colour capability. In this context the data forms part of, and is accessed through, a Geographic Information System (GIS) which can also contain layers of information for physical features such as roads, property boundaries, geology, soil type and aspect or elevation.

The use of a GIS system to combine satellite derived data on pasture growth with other physical data will indicate general plant nutrient status and provide a new dimension for pasture management in the future (Vickery 1989). It will allow accurate identification of slow growing or unresponsive areas and thus focus the adviser's attention on them, while providing a method for monitoring the general state of all pastures on the property. After corrective measures have been taken the technology then provides a means of monitoring year to year changes to ensure that the new management has been effective. The GIS/satellite data technology will not replace existing methods such as soil and tissue testing, but it has the potential to considerably enhance their fidelity and effectiveness. The new technology would aid selection of monitor sites for soil testing and provide a spatial overview of the difference in growth by the pastures between years.

Vickery, P.J., (1989). Geographic Information Systems and Remote Sensing Technology - A new dimension for pasture management. Australia Rural Science Annual 1989, p 12-14.