Identifying problem areas

Diagnosing your waterlogging problem is the key to achieving success with any drainage. You need to know the source of the water and where it is moving in the soil. This will ensure correct selection of drain type to install and depth of installation. In winter it is easier to identify the limits of wet areas, particularly seepage areas, and to identify soil horizons on which a perched watertable occurs. For the initial investigation, dig a series of holes up to one metre deep in and around wet areas. A number of pegs are useful to mark out drainage lines and potential drain locations. Signs of waterlogging to look for on the soil surface include ponding, pugging by stock and ruts from machinery, poor crop establishment and growth, and patches of excessive weed growth.

Types of drainage

Drainage is carried out either on the surface or underground depending on the diagnosis of the problem. Surface drains can be open arterial ditches, grassed waterways or hump and hollow. Underground drains can be pipe drains, mole drains, or deep ripping. Surface drains are a minimal investment, last a long time provided stock are excluded, and can always be deepened or moved. Different soil types require different solutions to drainage problems. Plan your drainage in the winter, but install drains in the summer.

Benefits of improved drainage

Reducing the length of time soils remain waterlogged by the installation of appropriate drainage systems, results in greater ease of soil management, increased plant growth by improving aeration and soil temperature, plus control of plant diseases. Improving drainage results in the soil becoming friable rather than plastic, and less likely to be compacted or pugged. A more aerated soil encourages organisms which metabolise organic matter and stabilise soil aggregates. Improved drainage increases the depth of aerated soil allowing plant roots to explore a greater soil volume. This increases the pool of nutrients available, and with a greater volume of soil to draw on for water, plants are able to continue growing for longer during dry summer periods, which is often one of the unexpected benefits of improved drainage. Drainage can lessen the incidence of fusarium and phytophthora root rots which can occur when plants are stressed by waterlogged conditions and poor aeration. Poor soil drainage may be limiting plant growth to the extent that no responses are gained from increased fertiliser use. Drainage is also an important way of improving working conditions by removing the unpleasantness of muddy, wet soil.

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