Build a closer working relationship with John Deere

Nothing beats the space-saving performance of a John Deere hydrostatic tractor or 670 compact utility tractor.

On our hydrostatic-drive tractors, a unique 2-pedal speed and direction control lets you easily manoeuvre in and out of tight spots. Quick-attach loaders feature single-lever control for easy and precise control in the placement of loose materials.

And power steering lets you steer around obstacles with ease and comfort. The only thing small about our 670 tractor is its size. Not its performance. Its 19 hp (14 kW) gives you the power to produce a great amount in small places. And the 670's 8-speed forward, 2-speed reverse transmission provides excellent speed selectability.

So if you're looking for big results in tight spots, see your dealer soon. Ask for all the facts on John Deere compact diesels, 19 through 33 horsepower.

NOTHING RUNS LIKE A DEERE
<table>
<thead>
<tr>
<th>Make</th>
<th>hp</th>
<th>Length m (in)</th>
<th>Width m (in)</th>
<th>Weight kg (lb)</th>
<th>Transmission Fr</th>
<th>PTO Fr</th>
<th>Hyd lift cap. kg (lb)</th>
<th>Hydraulic Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honda</td>
<td>18.5</td>
<td>N/S</td>
<td>N/S</td>
<td>844 (1860)</td>
<td>Semi auto</td>
<td>Opt</td>
<td>950 (2095)</td>
<td>N/S</td>
</tr>
<tr>
<td>John Deere</td>
<td>20</td>
<td>N/S</td>
<td>N/S</td>
<td>807 (1780)</td>
<td>4F 1R x2</td>
<td>Std</td>
<td>358 (790)</td>
<td>N/S</td>
</tr>
<tr>
<td>Marshall</td>
<td>18</td>
<td>2.18 (86)</td>
<td>0.98 (39)</td>
<td>620 (1390)</td>
<td>Opt</td>
<td>Std</td>
<td>550 (1210)</td>
<td>4DCV</td>
</tr>
<tr>
<td>Shibaura</td>
<td>20</td>
<td>2.70 (109)</td>
<td>1.20 (48)</td>
<td>625 (1378)</td>
<td>Std</td>
<td>Std</td>
<td>550 (1210)</td>
<td>4DCV</td>
</tr>
<tr>
<td>Iseki</td>
<td>18</td>
<td>2.00 (80)</td>
<td>1.09 (44)</td>
<td>N/S</td>
<td>6F 2R</td>
<td>Std</td>
<td>755 (1660)</td>
<td>N/S</td>
</tr>
<tr>
<td>Massey Ferguson</td>
<td>16</td>
<td>2.16 (86)</td>
<td>1.02 (41)</td>
<td>641 (1413)</td>
<td>6F 2R</td>
<td>Std</td>
<td>755 (1660)</td>
<td>N/S</td>
</tr>
<tr>
<td>Kubota</td>
<td>17</td>
<td>2.59 (104)</td>
<td>0.98 (39)</td>
<td>630 (1389)</td>
<td>6F 2R or Hyd</td>
<td>Std</td>
<td>755 (1660)</td>
<td>N/S</td>
</tr>
<tr>
<td>Ford</td>
<td>16.7</td>
<td>2.70 (106)</td>
<td>1.04 (42)</td>
<td>648 (1429)</td>
<td>6F 2R or Hyd</td>
<td>Std</td>
<td>755 (1660)</td>
<td>N/S</td>
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<tr>
<td>Hinomoto</td>
<td>17</td>
<td>2.10 (84)</td>
<td>1.03 (41)</td>
<td>668 (1473)</td>
<td>6F 2R</td>
<td>Std</td>
<td>755 (1660)</td>
<td>N/S</td>
</tr>
<tr>
<td>Ferrari</td>
<td>18.3W</td>
<td>N/S</td>
<td>N/S</td>
<td>N/S</td>
<td>N/S</td>
<td>N/S</td>
<td>12F 6R</td>
<td>N/S</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>N/S</td>
<td>N/S</td>
<td>910 (2007)</td>
<td>12F 6R</td>
<td>Opt</td>
<td>528 (1164)</td>
<td>1SCV</td>
</tr>
<tr>
<td></td>
<td>22-3W</td>
<td>2.77 (111)</td>
<td>N/S</td>
<td>N/S</td>
<td>5F 8 &amp; 5F 6R</td>
<td>Opt</td>
<td>528 (1164)</td>
<td>1SCV</td>
</tr>
<tr>
<td></td>
<td>22-4W</td>
<td>2.30 (92)</td>
<td>0.96 (38)</td>
<td>920 (2029)</td>
<td>12F 6R</td>
<td>Opt</td>
<td>528 (1164)</td>
<td>1SCV</td>
</tr>
</tbody>
</table>

Key: N/S = Not specified (in company literature); 4F 1R x2 = Four forward, two reverse, two ratios; SCV = Single Control Valve (in brackets means option); DCV = Double Control/Acting Valve (in brackets means option). Information shown is taken from manufacturers/distributors price lists or promotional literature.
No need to cover your tracks. With the Kubota B50 series, you’re on the inside track for a faster, finer finish.

Because the Kubota B50 series features unique Bi-Speed Turn technology for tighter turns without turf damage.

You can see how. When the turning angle of the front wheels exceeds 35 degrees, they automatically start to rotate almost twice as fast as the rear wheels, creating significantly less front wheel resistance and greater productivity.

You can even make a single turn around a tree during mid-mount mowing work!

Bi-Speed Turn is available exclusively on the powerful yet economical B50 series. With the 17hp B1550, 20hp B1750 and 24hp B2150, it can be combined with integral power steering and Hydrostatic Transmission for single pedal control of speed and direction forwards and backwards.

Which puts you on the right track for greater operator productivity with less operator fatigue.

To track down your nearest Bi-Speed Turn B50 compact tractor, just complete and post the coupon now. We’ll make tracks...
KEEP ON TOP OF THE JOB
WITH THE HARDI PS DE-MOUNT SPRAYER

Designed to fit utility vehicles the Hardi PS sprayer has a 'drive in' facility and fold-away storage legs

The Hardi de-mount is a 300 litre (66 gallon) sprayer purpose designed for golf courses and general amenity work. It features a pto powered Rollervane pump (diaphragm optional), operator visible controls with balanced pressure feeds to the boom, Hardimatic volume control, three-stage filtration, clean water tank.

The robust 6 metre (19ft 9in) boom has spring-loaded safety breakaway with manual folding and height adjustment. Colour coded Snap Fit nozzles are fitted to Triplet nozzle holders.

A platform allows access to the tank and storage of chemical containers.

Options include foam bout marker, suction filler, hose reels, hoses and spray lances.

Just one of the many specialist sprayers for amenity work from Europe's biggest specialist sprayer manufacturer

HARDI PS De-mount Sprayer
HARDI Knapsack range
HARDI Wheelbarrow sprayers
HARDI Power sprayers
HARDI ATV trailed sprayers
HARDI BL and NK Tractor Mounted models

NAME
POSITION
ADDRESS
TELEPHONE NUMBER

Please send me details of HARDI Amenity Sprayers

GL 4.92

HARDI Ltd, Watling Close, Hinckley, Leicestershire LE10 3EX.
Telephone (0455) 233811. Fax (0455) 233815.
There are divided opinions about fertiliser usage on the golf course: those who see fertiliser as 'death' to the traditional golf course grasses and those who believe that a little 'sugar' promotes a stronger, more active plant. The fertiliser manufacturers report that golf courses are using more of their products - and this also applies to 'turf conditioners' or 'growth stimulants'. Both of these latter can be defined loosely as those products which provide a range of nutrients and other essential elements and compounds, but not necessarily with a sufficient or specific level of the major nutrients of 'N P & K' (nitrogen, phosphate and potassium). Both have greenkeepers who swear by them, together with research and/or trials which shows how effective they are, but as yet they tend to remain in the realms of 'muck and mystery'. That stated, Greenkeeper International is informed that research is being undertaken to analyse the constituents of seaweed which promote root growth and tillering.

Neither fertiliser nor turf conditioner should be seen as cure-alls and it is vital to cure underlying problems such as compaction and drainage, if for no other reason than the plant cannot utilise your expensive fertiliser efficiently unless it is growing healthily. A strong healthy plant also provides maximum resistance to disease and weed infestation.

Proof of expanding demand in the market is also provided by the growing number of products being produced specifically for golf greens and similar fine turf. Agriculture has seen fertiliser develop to inorganics of greater concentration, purity and consistency, and to a certain extent away from this as farmers seek cheaper materials, but the needs of amenity turf are significantly different and the goal is not maximum growth but 'wearability', health and (perhaps) grass appearance. In this market; price is not all important, (at least not to all) nor are concentration or purity. 'Organic' has become a preferred word, preferred by humans but not necessarily by a plant. However there are sound agronomic reasons for using some elements as organic compounds such as buffering and stabilising them from premature absorption or degradation.

Fertiliser is available in several forms, liquid or solid, and in many formulations from fully soluble, for foliar feeds, through suspensions (solids in water, which are seldom used on the golf course) to granulars. Foliars can be applied...
Supaturf's popular organic based phased release powder fertiliser for fine turf with good colour, greater disease resistance and recovery from wear.

E2H GREENEX 5-0-3
Totally Organic powder spring fertiliser for phased release on fine turf areas. Made from the very best organic materials such as dried blood, hoof & horn, and seaweed meal.

Also available for fine turf:
SUPA MG + Mini-granular 12-0-8 + 2Fe
CANNOCK OMGIO Mini-Granular 12-6-4
SUPASAN 5-0-0 + 3Fe

For the greenkeeper a most important feature in fertilisers is safe application, and this means safeguarding against 'scorching' the leaf and also avoiding mower contamination. Nitrogen is the main culprit in scorch, particularly when it exists in purer or stronger nitrate or ammonia compounds. Most high nitrogen products include several different forms of nitrogen, and this also extends the period of their release to the grass. However, nitrogen is the most effective element in 'greening up' the grass; and it is the major nutrient depleted when clipping are removed from the green. In excess the result is a more lax, lush, easily bruised plant of lower resistance to wear and disease.

Nitrate nitrogen is ideal for quick assimilation, while ammonia nitrogen reaches peak availability later in spring as nitrification bacteria in the soil become more active. Release of nitrogen can be modified and retarded by incorporating the nitrogen with or in various compounds; such as 'Didin,' the proprietary name for dicyandiamide, IBDU (Isobutylidene Diurea) and others, or 'Osmocote', a semi permeable organic resin coating. Didin is found in medium and high N fertilisers from ICI, Farmura and others, working by inhibiting the nitrification bacteria. IBDU is used by Fisons, Mascot, Schweizer and others, while Osmocote is available from Sierra in a range specifically for turf. The release life of the differing methods varies depending upon the mechanism of release, whither soil temperature, moisture or bacterial, thus 'life' is not predictable at spreading.

The advantages of phasing release allows fewer and earlier applications to be made, and it levels out the availability of the nutrient. Sierra suggest that a single annual application is possible, whereas Didin and IBDU, only claim up to about three months, thus increasing the number of applications. It is also easy enough to 'top-up' with foliar feeds as and when weather and grass growth dictate. The other major nutrients of phosphate and potassium are significantly different as they are longer lasting and more stable in most soils, nor do they have the same dramatic visual effect, nonetheless they are essential. Potassium ('K' or potash,) is essential to disease resistance and plant hardness, and is removed with mowing. Thus annual (autumn) application is usually needed, though some may be provided by certain sands used in topdressing. Unfortu-
nately an excess of potash free in the soil can inhibit other trace elements and nutrients.

Phosphate is most significant for root development. It too can be applied annually, though many soils – particularly clays – contain sufficient. The trend towards forming greens on sand has had a very significant effect on nutrition as most sands are poor at retaining potassium and magnesium. There is an indication from STRI and one manufacturer that there is significant advantage (on acidic sands) in providing calcium and boron too. Agriland have recently added a NPK foliar feed which includes enhanced levels of these elements.

Of other metallic elements; magnesium is vital to photosynthesis, with the obvious symptoms of deficiency being loss of leaf colour and lack of response to nitrogen. Iron is another ‘visual’ element which is essential for chlorophyll with application promoting a desirable dark green ‘green’ colour. In contrast to magnesium, iron deficiency is more likely to occur in high alkalinity soils such as chalk downs. Iron has the other beneficial effect of suppressing moss, though how effectively will depend upon the level of inclusion. This element and other metals, particularly copper, also work as fungicides; for instance against fusarium. There are many ways in which important elements and nutrients can become ‘locked-up’ in the soil: excesses of one element is one common cause, cold and wet conditions are another. Wet anaerobic (oxygen-less) conditions will inhibit iron absorption (and many other plant processes).

Manganese, zinc, copper and iodine are all important at trace levels, and these and many other compounds, vitamins and amino acids are found in seaweed. Thus the inclusion of seaweed meal or extraction in fertilisers and foliar feeds is a useful addition – and although this may be a shotgun approach it is effective, failing having a complete and detailed analysis of the soil. The word ‘chelate’ – pronounced key-late – is often used in conjunction with trace elements and is simply an organic compound form of the element which is readily absorbed by the plant and not locked into the soil.
## International Guide to Spring and Summer Fertilisers

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Product</th>
<th>Type</th>
<th>%N</th>
<th>%P</th>
<th>%K</th>
<th>Other elements</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agriland Ltd.</strong></td>
<td>Classic 20-0</td>
<td>LF</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Fast acting ureic N</td>
</tr>
<tr>
<td></td>
<td>Classic 15-0-10</td>
<td>LF</td>
<td>15</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Ideal for intensive use areas</td>
</tr>
<tr>
<td></td>
<td>Classic 10-2.5-7.5</td>
<td>LF</td>
<td>10</td>
<td>2.5</td>
<td>7.5</td>
<td>4.2% Ca O, 0.14%</td>
<td>Ideal for sand constructions</td>
</tr>
<tr>
<td></td>
<td>Agrimaster</td>
<td>LF</td>
<td>1.2</td>
<td>4.4</td>
<td>6</td>
<td>0.6 Mg, Ca, Na, Fe+</td>
<td>Seaweed base growth stimulant</td>
</tr>
<tr>
<td></td>
<td>Agricrop</td>
<td>LF</td>
<td>5</td>
<td>36</td>
<td>.47</td>
<td>as above</td>
<td>as above plus added N &amp; sulphur</td>
</tr>
<tr>
<td><strong>BASF plc</strong></td>
<td>Floranid N</td>
<td>G</td>
<td>31</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Based on Isodur slow release N</td>
</tr>
<tr>
<td></td>
<td>Floranid NK</td>
<td>G</td>
<td>14</td>
<td>0</td>
<td>19</td>
<td>2Mg</td>
<td>The highest NK on market</td>
</tr>
<tr>
<td></td>
<td>Floranid NK3</td>
<td>G</td>
<td>15</td>
<td>0</td>
<td>13</td>
<td>2Mg</td>
<td>Ideal for sand or high pH</td>
</tr>
<tr>
<td></td>
<td>Floranid Turf</td>
<td>G</td>
<td>20</td>
<td>5</td>
<td>8</td>
<td>2Mg</td>
<td>Standard spring/summer use</td>
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<tr>
<td><strong>Fairfield Turf Ltd.</strong></td>
<td>Scotts Lawnsu</td>
<td>mG</td>
<td>22</td>
<td>3</td>
<td>3</td>
<td>1.6Fe</td>
<td>Vermiculite based</td>
</tr>
<tr>
<td></td>
<td>Scotts</td>
<td>mG</td>
<td>17</td>
<td>23</td>
<td>6</td>
<td>5Fe</td>
<td>Supplied for unit area application</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Metalyne Urea + iron, moss suppress</td>
</tr>
<tr>
<td><strong>Farmura Environmental Products</strong></td>
<td>Flo-Gro Blue</td>
<td>LF</td>
<td>12</td>
<td>0</td>
<td>4</td>
<td></td>
<td>Incorporates Didin</td>
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<tr>
<td></td>
<td>Flo-Gro Brown</td>
<td>LF</td>
<td>12</td>
<td>0</td>
<td>4</td>
<td>0.5Fe &amp; Mg</td>
<td>Incorporates Didin</td>
</tr>
<tr>
<td></td>
<td>Flo-Glo Green</td>
<td>LF</td>
<td>9</td>
<td>3</td>
<td>9</td>
<td></td>
<td>Organic base</td>
</tr>
<tr>
<td></td>
<td>Flo-Glo Yellow</td>
<td>LF</td>
<td>18</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Flo-Glo Purple</td>
<td>LF</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Liquid foliar feed range based on “bovine extract” with added nutrient.</td>
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<tr>
<td><strong>Fisons Horticulture,</strong></td>
<td>Turf Tonic</td>
<td>MG</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>2%Fe, 1%Mg</td>
<td>Incorporates IBDU</td>
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<tr>
<td></td>
<td>Zero Phosphate</td>
<td>MG</td>
<td>14</td>
<td>0</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mosskller</td>
<td>MG</td>
<td>14</td>
<td>0</td>
<td>0</td>
<td>8.9%Fe</td>
<td></td>
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<tr>
<td></td>
<td>Super N</td>
<td>MG</td>
<td>24</td>
<td>0</td>
<td>0</td>
<td>2%Fe</td>
<td></td>
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<tr>
<td></td>
<td>Spring &amp; Summer</td>
<td>MG</td>
<td>14</td>
<td>2</td>
<td>4</td>
<td></td>
<td>With MCPA &amp; Mecoprop herbix</td>
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<tr>
<td></td>
<td>Extra</td>
<td>MG</td>
<td>14</td>
<td>2</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Organic 2</td>
<td>MG</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
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<tr>
<td><strong>ICI Agrochemicals,</strong></td>
<td>Longlife</td>
<td>mG</td>
<td>14</td>
<td>3</td>
<td>7</td>
<td>2%Mg + s/weed extract included Didin, fully compounded</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spring &amp; Summer</td>
<td>mG</td>
<td>14</td>
<td>0</td>
<td>5</td>
<td>2%Mg as above</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nitrogen with Iron</td>
<td>mG</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>2.5%Fe</td>
<td>N as sulphate of ammonia &amp; urea</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Also range of Organic and traditional fertilisers in mini pelleted form for outfields and fairways.</td>
</tr>
<tr>
<td><strong>Maxicrop International Ltd.,</strong></td>
<td>Maxicrop No. 1 Triple S'weed</td>
<td>mG</td>
<td>3</td>
<td>0.6</td>
<td>2.4</td>
<td>Fe,Cu,Mn,Zn,B,Mo+</td>
<td>In seaweed extract base</td>
</tr>
<tr>
<td></td>
<td>Maxicrop No. 4 Super Grass</td>
<td>mG</td>
<td>12.5</td>
<td>6.9</td>
<td>4.1</td>
<td>Comprehensive</td>
<td>In seaweed extract base</td>
</tr>
<tr>
<td></td>
<td>No. 5 plus Nitrogen</td>
<td>mG</td>
<td>17</td>
<td>0</td>
<td>0.7</td>
<td>range of traces</td>
<td>In seaweed extract base</td>
</tr>
<tr>
<td></td>
<td>No. 6 Seagreen</td>
<td>mG</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>6%Fe + above</td>
<td>In seaweed extract base</td>
</tr>
<tr>
<td></td>
<td>No. 2 Mosskller</td>
<td>mG</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>16.4%FeSO4</td>
<td></td>
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<td><strong>Rigby Taylor Ltd.</strong></td>
<td>Mascot Microfine 18-0-0</td>
<td>mg</td>
<td>18</td>
<td>0</td>
<td>0</td>
<td>6%Fe</td>
<td>80%N as IBDU</td>
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<tr>
<td></td>
<td>Microfine 14-4-7</td>
<td>mg</td>
<td>14</td>
<td>4</td>
<td>7</td>
<td>2%Mg</td>
<td>50%BDU</td>
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<tr>
<td></td>
<td>Microfine 12-0-0</td>
<td>mg</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>2%Mg, 2%Mg</td>
<td>50%BDU</td>
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<tr>
<td></td>
<td>Microfine 8-0-0</td>
<td>mg</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>4%Fe, 2%Mg</td>
<td>50%BDU</td>
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<tr>
<td></td>
<td>Organic S52</td>
<td>mg</td>
<td>14</td>
<td>2</td>
<td>7</td>
<td>1%Mg</td>
<td></td>
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<tr>
<td></td>
<td>Special Organic N</td>
<td>mg</td>
<td>9</td>
<td>0.5</td>
<td>0.5</td>
<td></td>
<td>Organic slow release nitrogen</td>
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<tr>
<td></td>
<td>Mini-Gran</td>
<td>mg</td>
<td>11</td>
<td>5</td>
<td>5</td>
<td>1.5%Fe</td>
<td>Less expensive than mascot range</td>
</tr>
<tr>
<td></td>
<td>Supreme S/S</td>
<td>mg</td>
<td>10</td>
<td>5</td>
<td>5</td>
<td>1.5%Fe</td>
<td>Blend of organic/inorganics</td>
</tr>
<tr>
<td></td>
<td>Taylors Fairway</td>
<td>mG</td>
<td>12</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
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<tr>
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<td>Taylors High N</td>
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<tr>
<td></td>
<td>Taylor Lawn Sand</td>
<td>P</td>
<td>5.4</td>
<td>0</td>
<td>0</td>
<td>1.5%Fe</td>
<td>Sulphate of ammonia</td>
</tr>
<tr>
<td><strong>Sierra UK Ltd.</strong></td>
<td>Sierrablen Turfmix</td>
<td>mg</td>
<td>28</td>
<td>5</td>
<td>7</td>
<td>Fe</td>
<td>6-7 month release life</td>
</tr>
<tr>
<td></td>
<td>Sierrablen Mini</td>
<td>mg</td>
<td>25</td>
<td>2</td>
<td>10</td>
<td></td>
<td>6-7 month controlled release</td>
</tr>
<tr>
<td></td>
<td>Osmocote N</td>
<td>G</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td></td>
<td>6-7 month controlled release</td>
</tr>
<tr>
<td></td>
<td>Sierrablen 260</td>
<td>mg</td>
<td>10</td>
<td>5.5</td>
<td>2.5</td>
<td>1.5%Fe+</td>
<td>Course Powder, 34% organic</td>
</tr>
<tr>
<td></td>
<td>Sierrablen 270</td>
<td>mg</td>
<td>12</td>
<td>0</td>
<td>9</td>
<td>1%Mg, 1%Fe</td>
<td>56% organic also contains seaweed</td>
</tr>
<tr>
<td></td>
<td>Sierrablen 280</td>
<td>mg</td>
<td>5.25</td>
<td>0</td>
<td>6.25</td>
<td>4%Fe</td>
<td>Fairway granular</td>
</tr>
<tr>
<td></td>
<td>Sierrablen 130</td>
<td>G</td>
<td>9</td>
<td>7</td>
<td>7</td>
<td></td>
<td>organic based part IBDU and UF</td>
</tr>
<tr>
<td></td>
<td>Sierrablen 140</td>
<td>G</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sierrablen 185</td>
<td>Pellet</td>
<td>11</td>
<td>5.5</td>
<td>5.5</td>
<td>1.5%Fe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sierrablen Golf</td>
<td>mg</td>
<td>20</td>
<td>5</td>
<td>8</td>
<td>1.6Mg</td>
<td>Including slow release</td>
</tr>
<tr>
<td></td>
<td>Sierrablen Golf</td>
<td>mg</td>
<td>18</td>
<td>6</td>
<td>12</td>
<td>1.6Mg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sierrablen Golf</td>
<td>mg</td>
<td>9.5</td>
<td>7</td>
<td>10</td>
<td>3.2MgO &amp; traces</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Also fine granular “fairway” products as previous three analyses.</td>
</tr>
<tr>
<td><strong>Sta-brite Supplies Ltd.,</strong></td>
<td>Sta-Green 110</td>
<td>P</td>
<td>10</td>
<td>5.5</td>
<td>2.5</td>
<td>1.5%Fe</td>
<td>Course Powder, 34% organic</td>
</tr>
<tr>
<td></td>
<td>Sta-Green 195</td>
<td>P</td>
<td>10</td>
<td>5</td>
<td>5</td>
<td>1.5%Fe</td>
<td>56% organic also contains seaweed</td>
</tr>
<tr>
<td></td>
<td>Sta-Green 270</td>
<td>MG</td>
<td>12</td>
<td>0</td>
<td>9</td>
<td>1%Mg, 1%Fe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sta-Green 280</td>
<td>P</td>
<td>5.25</td>
<td>0</td>
<td>6.25</td>
<td>4%Fe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sta-Green 130</td>
<td>G</td>
<td>9</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sta-Green 140</td>
<td>G</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sta-Green 185</td>
<td>Pellet</td>
<td>11</td>
<td>5.5</td>
<td>5.5</td>
<td>1.5%Fe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Schweizer Golf</td>
<td>mg</td>
<td>20</td>
<td>5</td>
<td>8</td>
<td>1.6Mg</td>
<td>Including slow release</td>
</tr>
<tr>
<td></td>
<td>Sport-Green Golf</td>
<td>mg</td>
<td>18</td>
<td>6</td>
<td>12</td>
<td>1.6Mg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Certoplant Golf</td>
<td>mg</td>
<td>9.5</td>
<td>7</td>
<td>10</td>
<td>3.2MgO &amp; traces</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Also fine granular “fairway” products as previous three analyses.</td>
</tr>
<tr>
<td><strong>Vitax Ltd.,</strong></td>
<td>Fine &quot;N&quot; extra</td>
<td>P</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>2.5%Fe</td>
<td>Plus trace elements.</td>
</tr>
<tr>
<td></td>
<td>Key &quot;N&quot;</td>
<td>P</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>1.6%Mg</td>
<td>60%BDU</td>
</tr>
<tr>
<td></td>
<td>Fine &quot;X&quot;</td>
<td>P</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0.5Mg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lawn Sand</td>
<td>P</td>
<td>4.6</td>
<td>0</td>
<td>0</td>
<td>1.8%Fe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weed 'N Feed</td>
<td>P</td>
<td>8</td>
<td>4</td>
<td>4.2</td>
<td>0.3Mg, 3%Fe.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Micro gran 1</td>
<td>mg</td>
<td>12</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Micro gran 3</td>
<td>mg</td>
<td>12</td>
<td>0</td>
<td>9</td>
<td>0.5Mg, 1.0%Fe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Micro gran 4</td>
<td>mg</td>
<td>12</td>
<td>3</td>
<td>9</td>
<td>0.5Mg, 1.0%Fe</td>
<td></td>
</tr>
</tbody>
</table>

Key: G = Granular; m = micro; M = min; P = Powder; LF = Liquid Foliar.
All ‘Longlife’ products are organic based mini-granular fertilizers. As a result the granules do not stay on the surface for weeks, but breakdown within a few days, so reducing the risk of scorch and mower pick up. They are all true compounds and not blended fertilizers, each granule containing the desired spread of nutrients so that speckling, which can occur with blends, is prevented. All the Fine Turf and Sports Turf fertilizers contain seaweed extract to provide a source of trace elements. Six of the products also contain the unique ingredient DIDIN. This reduces the growth flush and gives a controlled release of nitrogen, thus extending the grass feeding period from one application. DIDIN has the added benefit of reducing nitrate leaching.

The use of 'Longlife' fertilizers should be considered an integral part of any turf management programme, giving effective results at a very reasonable cost.

### FINE TURF RANGE

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Spring &amp; Summer</th>
<th>Autumn Feed</th>
<th>Finegreen NK</th>
<th>Nitrogen with Iron</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPK Analysis</td>
<td>14:3:7</td>
<td>5:5:15</td>
<td>15:0:5</td>
<td>8:0:0</td>
</tr>
<tr>
<td>Other Ingredients</td>
<td>2% Mg, Seaweed extract</td>
<td>2% Mg, 1/3% Fe, Seaweed extract</td>
<td>2% Mg, Seaweed extract</td>
<td>2/3% Fe, Seaweed extract</td>
</tr>
<tr>
<td>Contains DIDIN</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Mini-granule</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Application Rate</td>
<td>35–50 g per sq m</td>
<td>35 g per sq m</td>
<td>35–50 g per sq m</td>
<td>35–50 g per sq m</td>
</tr>
<tr>
<td></td>
<td>1–1/4 oz per sq yd</td>
<td>1 oz per sq yd</td>
<td>1–1/4 oz per sq yd</td>
<td>1–1/4 oz per sq yd</td>
</tr>
<tr>
<td>Area Treated</td>
<td>500–710 sq m</td>
<td>710 sq m</td>
<td>500–710 sq m</td>
<td>500–710 sq m</td>
</tr>
<tr>
<td></td>
<td>585–880 sq yd</td>
<td>880 sq yd</td>
<td>585–880 sq yd</td>
<td>880 sq yd</td>
</tr>
<tr>
<td>Bag Size</td>
<td>25 kg</td>
<td>25 kg</td>
<td>25 kg</td>
<td>25 kg</td>
</tr>
</tbody>
</table>

### SPORTS FIELD RANGE

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Spring &amp; Summer</th>
<th>Autumn Feed</th>
<th>Nitrogen</th>
<th>Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Ingredients</td>
<td>1% Mg, Seaweed extract</td>
<td>Seaweed extract</td>
<td>1/3% Mg, Seaweed extract</td>
<td>2% Mg, 2,4-D, dicamba, Seaweed extract</td>
</tr>
<tr>
<td>Contains DIDIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mini-granule</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Application Rate</td>
<td>35–50 g per sq m</td>
<td>35 g per sq m</td>
<td>35–50 g per sq m</td>
<td>35 g per sq m</td>
</tr>
<tr>
<td></td>
<td>1–1/4 oz per sq yd</td>
<td>1 oz per sq yd</td>
<td>1–1/4 oz per sq yd</td>
<td>1 oz per sq yd</td>
</tr>
<tr>
<td>Area Treated</td>
<td>500–710 sq m</td>
<td>710 sq m</td>
<td>500–710 sq m</td>
<td>710 sq m</td>
</tr>
<tr>
<td></td>
<td>585–880 sq yd</td>
<td>880 sq yd</td>
<td>585–880 sq yd</td>
<td>880 sq yd</td>
</tr>
<tr>
<td>Bag Size</td>
<td>25 kg</td>
<td>25 kg</td>
<td>25 kg</td>
<td>25 kg</td>
</tr>
</tbody>
</table>

‘Didin’ is a trademark of SKW Trostberg AG. ‘Longliffe’ is a trademark of Imperial Chemical Industries PLC.

'Longlife' Plus contains 2,4-D and dicamba. READ THE LABEL BEFORE YOU BUY: USE PESTICIDES SAFELY.
It is often easy (even desirable) to carry out your own mini-trials. Soil analysis can be a useful guide to soil nutrient status but there are some reservations about just how useful. It must be realised that the analysis only refers to that particular sample, i.e. if you take several cores and mix them you get averaged results — this may not tell you maximum and minimum levels at any one spot, which may be more useful. On the other hand taking a multitude of cores across the whole course is usually expensive and impractical except for quick and cheap tests (such as for pH), thus a more useful practice may be to take one or two cores from areas of satisfactory growth and the same from 'problem' or less satisfactory areas, which will allow for better comparison.

The time and method of sampling can also cause distortion of results: a hand auger can take a disproportionate volume of soil from one level without providing a true profile of the soil and may not include all the soil available to the root system. In addition, recent fertiliser applications can cause distortion. Most analyses of P & K use the MAFF ADAS 0-5 scale where 0 equals no trace and 2 is 'ideal', and this provides a simple and effective guide for applications of these nutrients. Most suppliers give a guide to application rates based on these; however it must be remembered that such figures are only a guide. Some DIY soil test kits are available but these are limited in scope. How useful any one course manager will find them will depend on his attitude, and perhaps on his knowledge of basic soil chemistry.

Minor nutrient and trace element analysis and recommendations are less well defined, with interpretation often dependent on the advisor. Fortunately most plant deficiencies produce classic symptoms and these can usually be used as a guide, either for more detailed analysis or for a trial application of a specific remedy. However it must be remembered that deficiencies — and thus symptoms — are often transitory, caused by weather or other temporary conditions such as drought, water-logging or cold, or even a spell of rapid growth.

There is an abundance of advice freely available on most matters affecting golf turf, (not always welcome or 'useful'), which often leaves the greenkeeper with the problem of selecting which to 'hear' and which to ignore. Fortunately most traditional greenkeepers are imbued with a healthy scepticism.

It is often easy (even desirable) to carry out your own mini-trials, and while results may not be scientifically valid they often give valuable indications of the effect of specific nutrition and management programmes:

- Hugh Tilley is a regular contributor to Greenkeeper International. His special interests include machinery, management, safety and agrochemicals.

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