

# SIMBA CONSOLIDATIONS SYSTEMS RANGE OVERVIEW



## Aqueel

Aqueel rollers are available as complete rollers up to a maximum width of 4m. Any size of machine can be matched by a combination of individual rollers i.e. if you have a 6m machine you can fit two 3m Aqueel roller sections or three 2m sections. The Aqueel roller comes complete with a pair of stub axle assemblies, including 50mm SIMBA flange type bearings. Aqueel rollers can be purchased with or without framework.



## DD Lite

DD lite rollers come complete up to a maximum width of 4m. Any size of machine can be matched by a combination of individual rollers i.e. if you have a 6m machine you can fit two 3m DD lite roller sections or three 2m sections. DD lite rollers come complete with stub axle assemblies and they include 50mm flange type bearings and scrapers. DD lite can be supplied with or without framework.



## DD Ring

All DD rollers are delivered complete and assembled. You need to select from the sizes below to make up your overall required width. For example: if you are buying a DD ring roller for a 3m rigid cultivator you would buy a one 10-ring roller and one 11-ring roller giving you a total length of 3.13m. A 4m folding cultivator, if you are adding 600mm diameter rings would require two 9-ring axles to make up the complete 4m roller for your machine.

### 550mm dia. (single row format)

6 ring axle	890mm
7 ring axle	1040mm
8 ring axle	1190mm
9 ring axle	1340mm
10 ring axle	1490mm
11 ring axle	1640mm



Suitable for seedbed cultivators, drills, stubble cultivators and subsoilers

### 600mm dia. (single or double row format)

5 ring axle	1245mm
6 ring axle	1485mm
7 ring axle	1665mm
8 ring axle	1845mm
9 ring axle	2075mm
10 ring axle	2479mm



Suitable for single and double press rolls and subsoilers

### 700mm dia. (single row format)

5 ring axle	1245mm
6 ring axle	1485mm
7 ring axle	1665mm
8 ring axle	1845mm
9 ring axle	2075mm
10 ring axle	2479mm



Suitable for single press rolls and subsoilers

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SIMBA Consolidation Systems is a  
division of SIMBA International Ltd.

YOUR LOCAL SIMBA DEALER



# The need for consolidation

'to provide improved yields and higher profits'

Effective consolidation plays a crucial, but often under-appreciated, part in modern arable farming.

Simba Consolidation Systems offers a range of components that are designed to do an effective job on a range of soil types, and ensure users achieve the full benefits, which include:

- **Effective soil to seed/root contact to enable efficient nutrient transfer**
- **Minimal moisture loss, especially important in dry years where crops which lack moisture suffer badly**
- **Improved drainage and water infiltration, especially important in wet years where a good, consolidated soil structure ensures access to plant root systems for water, air and nutrients**
- **Reduced soil erosion, as the soil is both structured and stable - an essential consideration for farmers as they aim to meet the Cross Compliance protocols of the reformed CAP.**



Consolidation should not be confused with compaction which is a barrier to root growth and water infiltration and in many cases the key cause of poor soil structure leading to run-off and erosion. This is often caused during harvesting or the use of inappropriate cultivation systems. The principle of minimum passes where ever possible is of major benefit in avoiding compaction.

## Traditional roller technology

The essential requirement for consolidation over the years has resulted in the development of a variety of rollers, many of which Simba have had experience with.

- 1 Open Bar
- 2 Coil
- 3 Crumbler/packer
- 4 Rubber/tyred
- 5 Cast ring
- 6 Prism
- 7 Welded pressed steel ring

All of the above rollers tend to be 'soil type specific' and have limitations due to their design.

With continued focus on protecting soil from erosion whilst improving and maintaining soil structure, Simba International Ltd has recognised the need to provide a separate Division to deal with the development of a range of effective consolidation rollers.

Simba's years of experience in developing roller technology, such as its innovative elements like the DD press ring, are increasingly being used on its own and other manufacturers' equipment. The DD press ring is now accepted as one of the best consolidation systems capable of working in all soil types.

The need for effective consolidation of the cultivated soil profile in order to optimise soil structure is not a new concept, however it has led the company to the development of the DD Lite and the Aqueel.

Simba Consolidation Systems, with its complete range of rollers for all machines and all soil types, will help you improve your crop establishment, reduce soil erosion and give you the ability to cross comply providing better yields and profits.

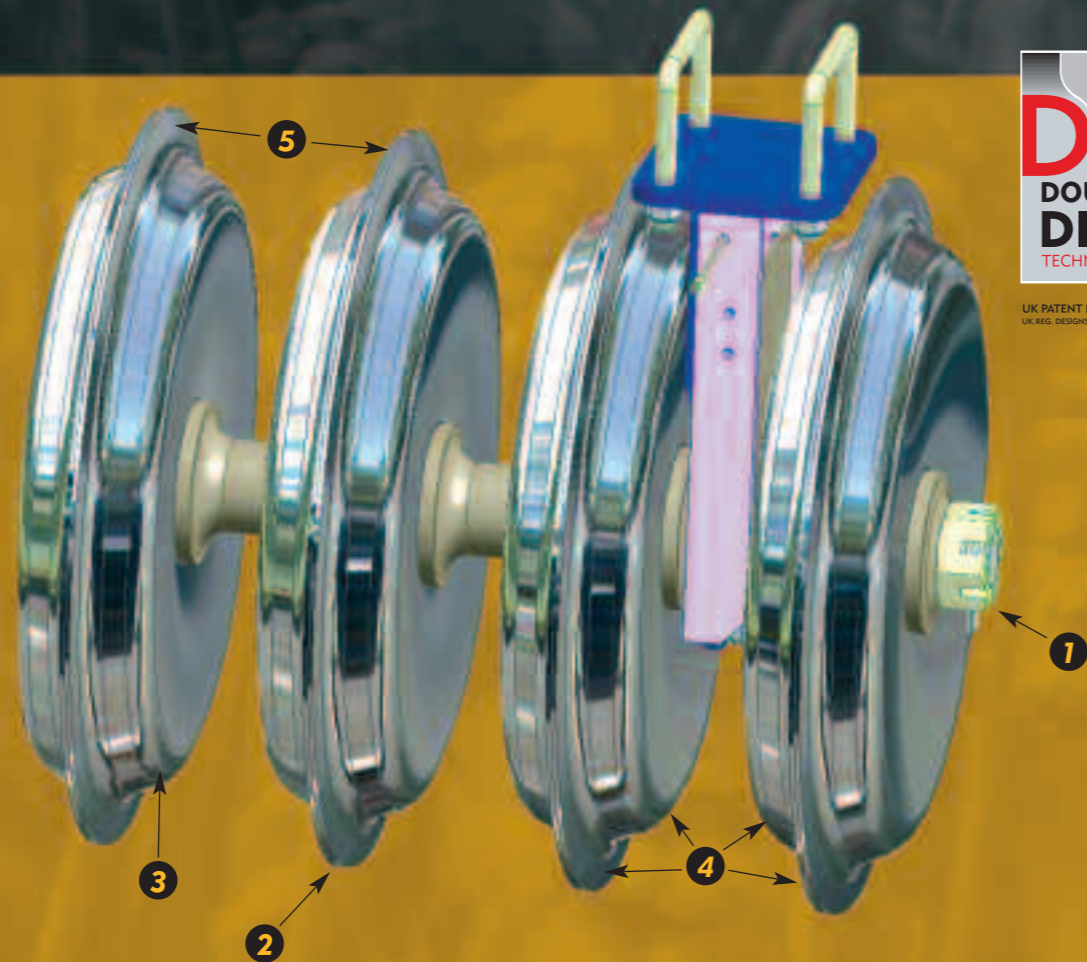


	SIMBA CONSOLIDATION SYSTEMS					TRADITIONAL ROLLER TECHNOLOGY						
	Aqueel	550DD	600DD	700DD	DD LITE	Open Bar	Coil	Crumbler/Packer	Rubber/Tyred	Cast Ring	Prism	Welded Pressed Steel Ring
Ablity to work in moist conditions	●●●●	●	●●	●●	●●	○●	○	●	●●	○	○	●
Ablity to work in heavy soils	●	●●	●●●	●●●	●●●	●	○	●●	●	●	○	●●
Ablity to work in light soils	●●●●	●●	●●	●●●	●●●	●●	●●●	●	●●	○	●●	●●
Self-cleaning ability	●●●●	○	○	○	●	○●○	○●	○●	●	○●○	○●	○●
Draft requirement	●●●●	●	●	●●	●●	●●	●●	○●	●	○●	●	●
Consolidation to depth	●	●●	●●●	●●●	●	●	●	○	○●	●●	●	●●
Surface finish/Cross-comply	●●●●	●●	●●	●●	●	○	●	○●	○●○	●	○	●●
Wear resistant	○●	●●●	●●●	●●●	●●●	●●	●●	○●	●●	○	○	○●
Retention of clod-cutting ability	○●○	●●●	●●●	●●●	●●●	○●	○●	●	○●	●	●	●
Simplicity/Maintenance (Scraper adjustment/tightness)	●●●●	●●	●●	●●	●●●	●●●	●●	○●	●●	○	○●	○
Use on mounted machines	●●●●	●●	●	○●	●●	●●	●	●	●	○●○	●●	●
Measure of overall effectiveness (%)	70%	61%	67%	70%	73%	40%	36%	18%	36%	15%	21%	36%

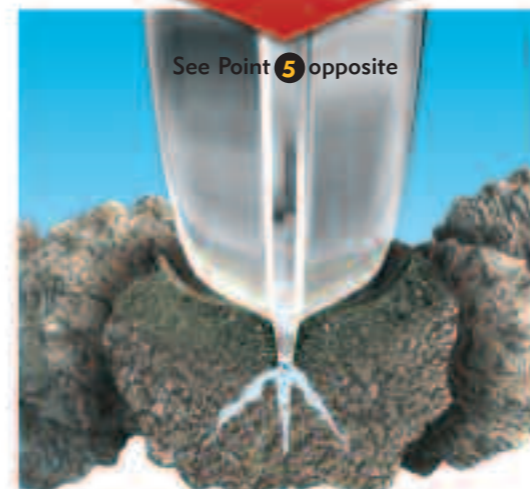
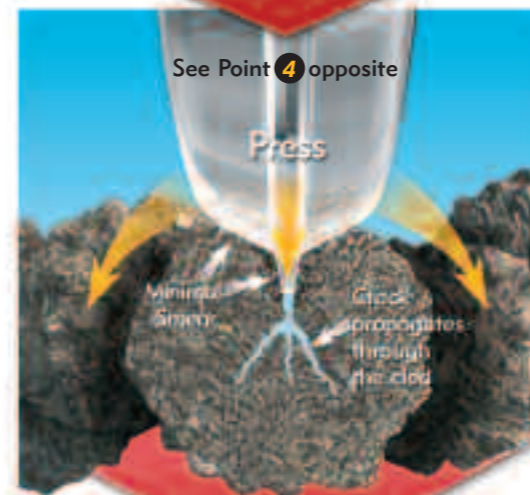
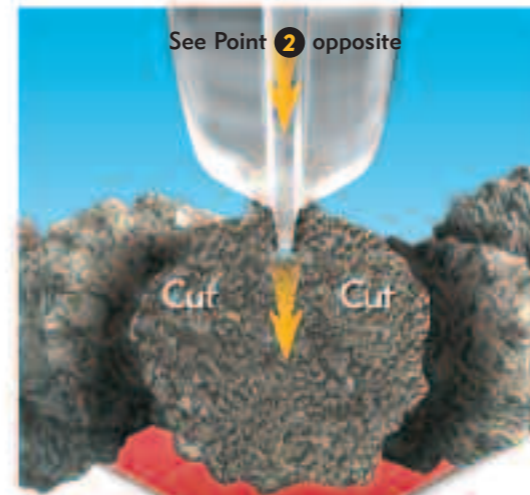
●●●● Excellent ●● V. Good ● Good ○ Average ○○ Poor ○○○ V. Poor



# DD Ring - the complete solution



UK PATENT NO GB2323511 B  
UK REG. DESIGNS 2071325 AND 2091721



Broken or cracked clods are left in an ideal state for further weathering



- A** Weatherproof surface without compaction
- B** Fine aggregate on firm surface
- C** Consolidation to depth

- 1** The patented axle tensioning system allows:-
  - sharp cutting edge to be maintained over the life of DD ring
  - maintains 'drive' between axle components therefore avoiding blockage and stoppage or the roller.

- 2** Sharp cutting edge ensures optimum clod cutting and improved cultivation action.

- 3** DD Rings are manufactured from the highest quality Boron steel. This quality of material and the tensioning system avoids the need for welding the rings. The specification of the material also ensures optimum wear and high durability against damage from stone/rocks.

- 4** The transition of the DD ring from the cutting edge to the firming part of the ring results in:-
  - cuts in moist soil are propagated deeply avoiding the 'smearing' of the soil surface.
  - no compaction of the soil surface
  - optimum soil consolidation at the surface and at depth.



- 5** Relationship between ring spacing, diameter and width results in optimum soil consolidation and minimises soil blockage between the rings. It also ensures the soil between the rings is not over consolidated as this is critical for a weatherproof surface which maintains soil moisture (in dry conditions) and allows good drainage (in wet conditions) avoiding soil erosion.



# DD Ring

# DD Lite

On pages 4 & 5 we have explained the overall benefits of the 600mm DD ring design concept. Below we go into more detail of the individual model variants and explain the benefits of the individual sizes or types.



## 550

In addition to the features on pages 4 & 5 the 550 DD has 150mm spacing resulting in improved clod cutting and a finer soil surface finish - ideal for seedbed preparation.

*Applications: Seedbed cultivators, drills, disc harrows and stubble cultivators*

Available in single row format only. Wgt per metre: 175 kgs.

## 600

Can be supplied in single or double row format. In a single row format its application is primarily for deeper consolidation.

*Applications: Double press rolls, disc harrows and subsoilers.*

Wgt per metre: 220 kgs.

## 700

In addition to the features on pages 4 & 5 the 700mm DD has a larger and wider profile allowing it to work in lighter soils. The ring width also results in more surface consolidation.

*Applications: Front mounted press rolls, disc harrows, subsoilers and single press rolls*

Available in single row format only. Wgt per metre: 260 kgs.

## LITE

Utilising the unique features of the DD ring the DD lite Roller is light weight (130 kgs per metre) and simple in construction. This makes the roller ideal for mounted machines on lower H.P. tractors.

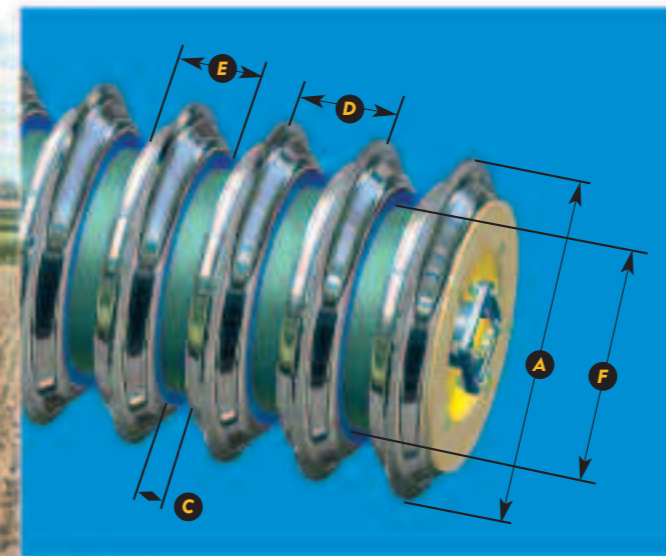
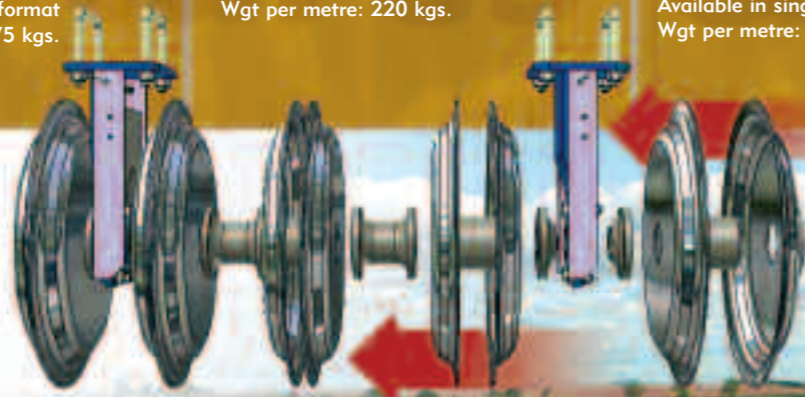
Incorporating the unique axle tensioning system with rubber spacers between the DD rings allows the roller to 'self-adjust' as it wears therefore maintaining its effectiveness.

Spacing & rubber space elements offers superior surface consolidation allied to adequate firming to depth on shallower cultivated soils.

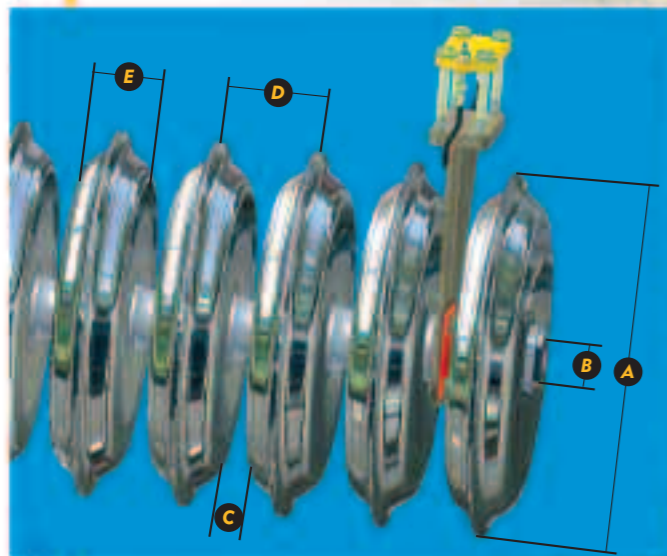
*Applications: Stubble cultivators, disc harrows, subsoilers, tined cultivators.*

Weight per metre: 130kgs.

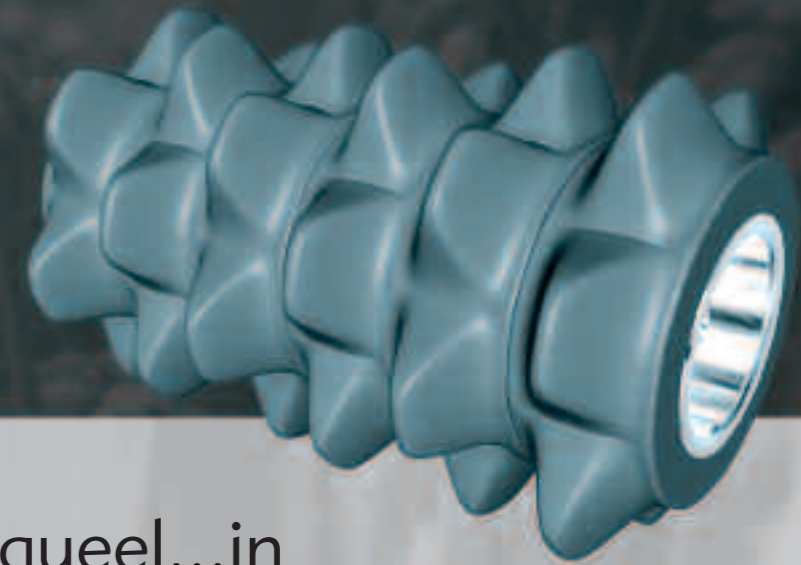
Here you can see how the patented axle tensioning system works, the design element that sets DD rings apart from all other rolling technology.



	Dim A	Dim B	Dim C	Dim D	Dim E	Dim F
550mm DD Ring	550mm	45mm	50mm	150mm	100mm	n/a
600mm DD Ring	600mm	60mm	134mm	234mm	100mm	n/a
700mm DD Ring	700mm	60mm	100mm	234mm	134mm	n/a
DD Lite	550mm	n/a	50mm	150mm	100mm	405mm



# Aqueel - the solution for today's problems



## Aqueel...the Soil Erosion solution

Aqueel holds onto one of the most vital commodities on your farm - the soil

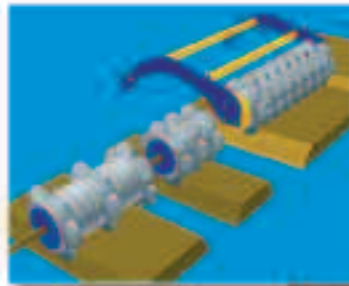
There are very few farms in the UK that are not affected by soil erosion, by water or particularly wind.

Wherever there is the slightest slope, there is soil erosion. Wherever there are totally flat fields there is wind erosion.

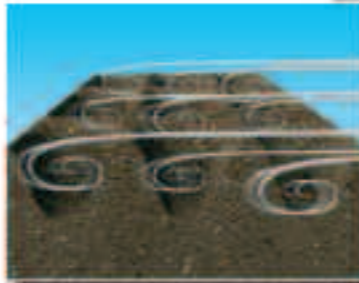
Aqueel makes a major contribution to combating the effects of both of these serious problems.

Serious erosion is evident on slopes with as little as a 3 percent fall, which puts the majority of the arable land in England at some risk.

The unique properties of the indentations on flat fields, create an uneven surface across the whole field which significantly reduces wind erosion.



The eddying effect of the Aqueel indentations reduces the ability of the wind to hold soil particles. These airborne particles are encouraged to fall back to earth as the wind passes over the indented surface. Additionally, these vortices minimise the ability of the wind to pick up particles from the consolidated surface.



Soil particles deposited on 'Aqueeled' surface



**AQUEEL**

US pat no. 5628372  
EP pat no. EP0622985



**Non-Aqueeled surface**  
Note surface water and extensive run-off problems



**Aqueeled surface**  
Increased percolation of water and vast reduction in run-off

- 1 Non-Aqueel bed
- 2 Consolidated and stable bed avoids collapse after high levels of irrigation
- 3 Aqueeled bed



## Aqueel...in Water Management

Aqueel will play a major part in retaining one of the most valuable commodities on farm and that is water.

Water as rain or irrigation, falls on the surface of the soil, percolates through the soil layers and is utilised by the crop being grown. Modern cultivation practices and machinery sizes still contribute to significant areas of run-off and loss of this valuable commodity.

- Whilst the nutrients are retained they are beneficial and not converted into pollutants if washed off the field.
- Water running off the field carries significant valuable top soils with it and can lead to soil structure and erosion problems.

### Aqueel the crops solution

Aqueel retains water within the cropping area with its clever indentations of approximately 1 litre which is approximately 175,000 litres per hectare.

- As water is a carrier of crop nutrients, this is retained.

### Irrigation

It goes without saying that at the most vital time of year for many crops, water is at its lowest levels. The design of the Aqueel reservoirs ensures that far more of the water that lands on the field, rainfall or irrigation is retained for the benefit of the crop.

## Aqueel...as a No Block Roller



Even in the best years the heavy workload during the Autumn combined with serious downpours or continuous light rain creates difficult cultivation conditions primarily revolving around soil and its adhesion to rollers making it impossible to work.

The unique elastomeric properties of the Aqueel eliminates virtually all these problems without a detrimental effect on the seedbed preparation. Whatever type of cultivation you are applying, tined cultivator, soil conditioning or powered cultivator the Aqueel roller can transform its ability to work in difficult conditions.

### NO MORE...

- Downtime and loss of output
- Continuous scraper adjustment
- Expensive scraper replacement

### AQUEEL GIVES YOU...

- Higher output
- No scraper replacement
- Reduced fuel usage

# SIMBA consolidation systems in action



McConel Shakerator



Horsch FX



Simba UniPress



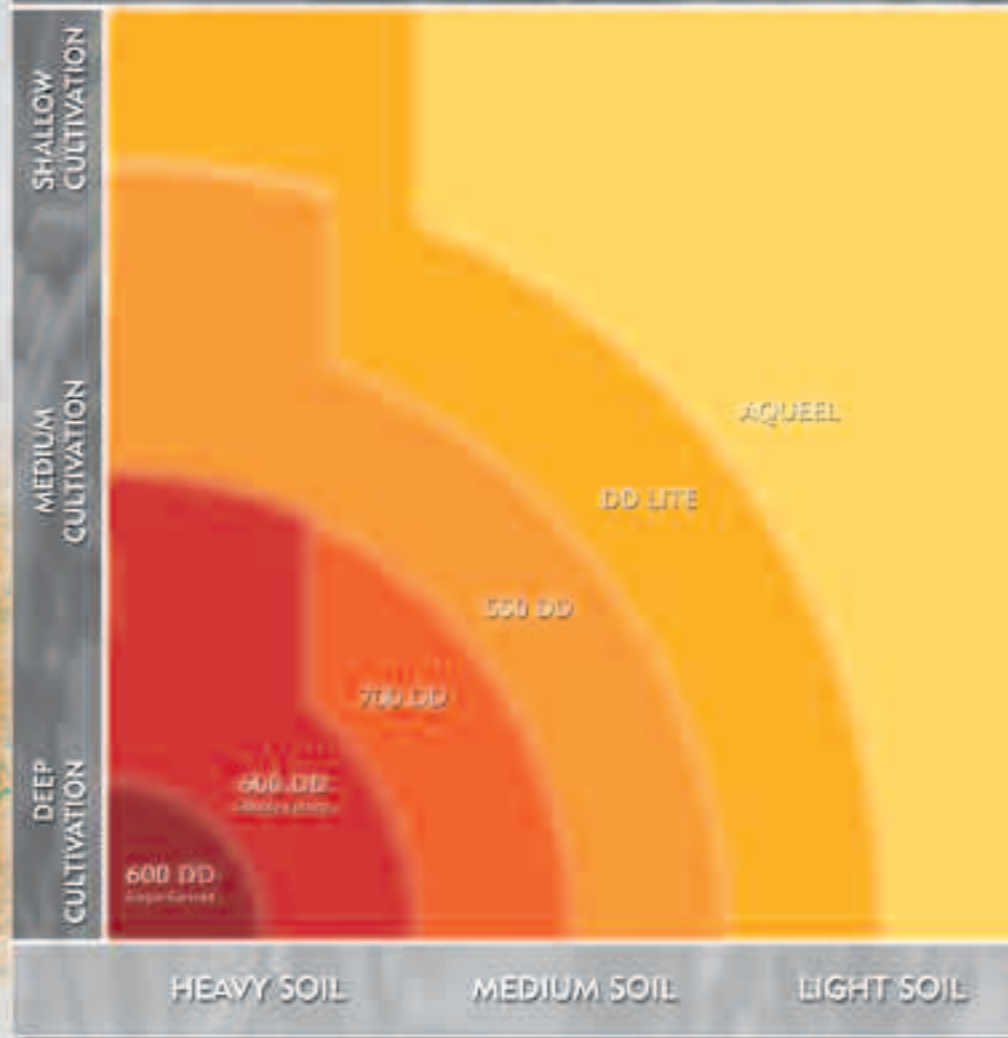
700mm DD

Lynx Front Press



DD LITE

PRODUCT GUIDE BASED ON DEPTH OF CULTIVATION & SOIL TYPE



600mm DD

Cousins Double Press



550mm DD

Pronto DD Drill



Lemken Thorit Cultivator

AQUEEL



Any Subsoiler



McConel Shakerator

Kuhn Power Harrow



Grimme Planter