



## Chipping fibrous palm fronds, reeds & grapevines with ease!

*A TOMCAT Model 200 AFE wood chipper chipping old palm leaves on a dumpsite in Cape Town*

Palms are one of the most popular trees in Southern Africa especially along the coastal towns of our country. Worldwide there are more than 2600 different palm species and most of them only occur in tropical climates. They are relatively easy growing, don't require too much water, can withstand gale force winds, are green all year round and can grow places where other plants cannot. The only negative thing is that, like all plants, they require annual trimming. During a proper trimming session a decent sized palm tree will produce quite a lot of waste. If palm fronds are left unprocessed (in their natural form) on the ground they will take many years to decompose. The fibre inside palm leaves is very tough and does not break down easily. Palm leaves are extremely durable and do not simply rot and decompose like other plants. This is the reason for their popularity as a material to make thatch roofs, garden walls, furniture and even (in some cultures) houses.

Palm leaves are certainly a nightmare for most garden services, municipal dump/waste (landfill) sites, tree fellers and composting plants. Most garden services and tree fellers take palm cuttings to the landfill site where they are burned. In fact, there are quite a few municipal dumpsites in the US where residents are not even allowed to take palm fronds to the dump (because are no machines to effectively process the palms) or they have to pay a substantial amount to get rid of them.

The tough fibres inside palm leaves and reeds make these by far one of the most difficult materials to process for most wood chippers, slow speed shredders and horizontal grinders out there. Fibrous material is very hard to break/ tear, blunts your blades relatively quickly, especially when the leaves are dry, and therefore needs a specific cutting action to effectively process it. The cutting action of most horizontal grinders, shredders and discs is not suitable for palm fronds and processing palm fronds will only cause the chipping chambers or discharge areas to clog up.

A TOMCAT drum-style chipper is one the few wood chippers in the world that can successfully chip palm fronds, reeds, bamboo and grapevines. This is because of the position of the blades on the chipper drum and the cutting action. The drum chipper cuts the material from above, with the grain of the material, over the length of the secondary blade (anvil) at the bottom, so there's no gap for material to pass through without getting chipped up and getting wound up around the shaft of the cutting mechanism.





*On average there are about 1 million palm leaves that gets cut down during pruning season on an typical sized Date Farm (Dadelplaas)*

### **TOMCAT Chippers on Date Farms (Dadel Plase)**

Dates are one of the most sought-after fruits in the world, thanks to their delicious taste and amazing health benefits. Dates are a very good source of vitamins, minerals and fibre. Farming with dates can also be a very lucrative business venture when it's done in the correct area and to the right scale. A typical date farm in Africa varies between 100 and 400 hectares in size. On larger farms there can be between 500 000 and 1 million palm leaves after pruning and even more. This is nightmare as the leaves do not simply rot and decompose by themselves which means they increase every year. On many date farms throughout the world the standard practice is just to burn the large pile year after year. This is not the best practice for various reasons: it is risky to burn, bad for the environment and you burn away nutrients that came from your soil and then have to buy expensive fertiliser and compost to replace those elements again.

When chipping the palm leaves on date farms there are usually 2 approaches:

The one option is to chip in the rows and blow the chips at the base of the trees which minimises handling. The chips are then left on the ground and serve as a mulch that will save water and also stimulate the growth of micro-organisms in the soil. The trick here is to purchase a large enough machine that will be able to get through the volumes quickly as the other teams need to enter soon after pruning. The other option is to remove all the leaves from plantation and take them to a centralised site. There the leaves can be processed through the wood chipper at a later stage and the wood chips can be used to make compost which can get worked into the soil.



The pictures above illustrate the different end products when chipping the freshly cut palm leaves or palm fronds. The leafy part gets chipped up very finely when the palm leaves have been left to dry for a year, instead of the leaves just getting crushed when the palms are wet.

## TOMCAT Chipping Palm Fronds in Seychelles

The fact that palm fronds break down so slowly if left unprocessed is a major issue everywhere on the globe. When considering the vast number of palms on a small island like Mahè, Seychelles, one can see how this can become a problem. On an island space is obviously an issue since the area is limited and every bit of space should be used as efficiently as possible. Taking the material to the waste site where it will most likely get buried or burned is also not an effective solution, especially on an island.

The other problem is that most islands have very little soil or the quality of the soil is extremely poor. The soil on an island such as Mahè, Seychelles, contains very little organic matter and has a low water retention capability. So the soil is not ideal for farming or gardening.

Some characteristics of healthy soils include the following:

- good drainage capabilities
- adequate levels of essential nutrients
- moisture retention with the ability to drain water
- proper airflow
- the right amounts of organic matter

Luckily one of the resources available in abundance on this tropical island is trees and palms. These palms can easily be converted to wood chips with the use of a 200mm or 250mm capacity TOMCAT wood chipper. The hard base of the palm gets chipped up very finely and the leaves get crushed as they are passed through the in-feed roller and blades. This will allow the material to break down very quickly when put through a composting process. The compost can then be worked into the ground which will help the soil's ability to retain water and add organic matter to the composition.



*Above: The end product after the palm fronds went through the chipper. The leaves might look as if they are still intact, but actually they have been crushed which will help them to break down quickly*



*Picture above: A TOMCAT Model 200 AFE wood chipper chipping palm leaves on Seychelles which will be used to create compost*





Picture above: A TOMCAT Model 200 AFP PTO driven wood chipper chipping old vineyards next to the Orange River

## TOMCAT Wood Chippers on Grape Farms

South Africa is globally known for its quality wine produce and table grapes exports. Vineyards are widespread throughout the Western Cape and the northern parts of the Northern Cape province on farms next to the Orange river. Grape farming is also a great contributor to the GDP in the Agricultural sector. It is also an annual occurrence to see huge piles of vineyards that have been removed. This happens every year when production on a certain block is declining or when market trends change and the winemaker requires a different variety/ cultivar.

In the past it was normal to burn the material that has been taken out or dump it somewhere on the farm where it is out of sight. This was also largely due to the fact that there wasn't proper machinery at the farmer's disposal to transform the waste into something useful or it was simply too expensive. The new global trend, however, is to recycle and re-use green waste as far as possible. With a TOMCAT drum-style wood chipper it is now possible to chip these stubborn vines cost effectively and efficiently.

The reason our TOMCAT wood chippers are so effective at chipping these stubborn vines is the double super sharp in-feed rollers powered by PARKER hydraulic motors, the unique angle of the chipping blades on the drum and the hydraulic lift cylinder, which gives the operator complete control over the top feed roller. This allows the operator to lift the roller or use it to crush stubborn side branches. The TOMCAT hand-fed wood chipper series requires between 2 to 6 chipper feeders to effectively feed the woodchipper. The drum-style cutting action makes these chippers extremely fuel efficient as very little horsepower is required to keep the RPM on the drum compared to other cutting styles. These factors all contribute to low running/operational costs which results in lower production costs. The wood chips can be used to make compost and are also ideal for mulch on the ground around the base of the grapevine. Woodchip mulch has the following benefits for your vineyard:



Above: Our Model 200 TOMCAT wood chipper looks small compared to the mountain of grapevines behind it, but it surely packs a punch.

- Saves water: A thick layer of woodchip mulch retains moisture and slows evaporation
- Weed control: A more organic approach as woodchip mulch reduces weed growth naturally
- Environmentally friendly: Wood is utilised that would have been burned and it is a sustainable source
- Stimulates soil health: Wood chips break down, increase soil fertility and put carbon into the soil
- Organic matter: Wood chips stimulate the growth of micro organisms which helps to work organic matter deep into the ground, which helps accelerate the growth rate of your trees and in turn increases yields



## **TOMCAT chipping reeds with ease!**

Reeds are one of the most common aquatic plants and are widespread throughout South Africa. They grow quickly and can reach heights of up to 5m. Reeds are made up of both male and female plants. They can be harvested and will simply shoot out and grow again. Here are some of the most popular uses for reeds:

- Reeds are great food source for cattle, especially during drought periods where roughage is scarce.
- Reeds can be used as a filtration system. They treat and purify water as their root system removes bacteria and converts the water to useable water for irrigation or groundwater recharge.
- The roots can be ground up and used as herbal medicine to treat certain respiratory illnesses.
- Reeds can be harvested and chipped through a 125mm to 250mm TOMCAT wood chipper and used to create compost.

The physical structure of reeds makes it extremely difficult to chip. It is thin, bends easily, but is extremely fibrous and tough to break. It is also very light and doesn't have much weight to it which makes it difficult to discharge. It is usually regarded as material that cannot be chipped and will block up the chippers' chute or wind up around the cutting mechanisms' shaft. If you were also under the impression that reeds cannot be processed through a wood chipper, then we've got good news for you: A TOMCAT CAN!

Our drum-style hydraulic-feed wood chippers chips reeds without blockages and issues. This is because of our unique drum design and discharge system design. The cutting action is unique and can therefore chip material that no other chippers in its size range can chip.

Just another reason for you to consider a TOMCAT!



*The common reed (Phragmites australis or in Afrikaans Fluitjiesriet) can easily be chipped with our hydraulic feed wood chippers*

