

APPENDIX 1. PLANTING EQUIPMENT

Nearly all planters can be adjusted to plant sesame in various row spacings, conventional to no-till, beds or flat. If you don't find your planter mentioned here, give your SESACO representative a call in advance, and they will be happy to assist you in making recommendations for setting up your equipment.

Does not work:

It is easier to list the things tried that have not worked in comparison to the number of things that have worked in planting sesame.

- Kinze brush meters do not work because seed will build up in the brushes and flow past the plate.
- Double run drills often crush the seed.
- Broadcasting the seed and working it in with a Brillion planter has been tried a dozen times or more and has not worked!

Does work:

A setting for low rate sorghum plates is usually close to the same rate for sesame. It is important to always verify your rate. In some planters, tomato and sugar beet plates work.

Tips for setting depth for a small seed. Whether using a drill or planter there are some tips to gaining confidence to setting the seed depth for small seed sesame. The first tip, if possible, is to get the feel for your equipment when planting other large seed crops prior to sesame. It is important to know the wear on your openers to know exactly where the seed will be placed. The second tip is to make finding the seed easier: triple the rate so that you have a greater chance of finding the seed. Once you are confident of the seed placement, be sure to lower the rate back down to the field rate. (**Caution: DO NOT FORGET TO ADJUST THE RATE BACK DOWN**).

Narrow row offset units. When using a drill or planter that has off set units (front to back) where the back unit can not be raised, be sure to use the back units for planting. Planting with the front units while the back units are down may allow the back units to push soil on top of the actual planted row in loose soil conditions.

Vacuum Planters

John Deere MaxEmerge Type Setup:

- Disk
 - JD Part No. A43066 Sorghum or
 - JD Part No. H136445 Mono-germ Sugar Beet
- JD Part No. AH129125 Seed Knockout Wheel
- Low Range Input Sprocket
- Driver – changes about ½ lb/ac on 30" rows

Driver	Rate in lbs/ac
29	2.75-3.25
24	2.25-2.75
20	1.75-2.25

- Driven – changes about 1/10 lb/ac on 30" rows
- **Recommended to start with Driver 24 and Driven 26 and adjust from there.**
- Vacuum should be set for 4-5 inches.
- Lower the Vacuum Baffle in the position for small seed.
- Follow Operator's Manual "Adjusting Meter Hubs" for seed leaking sesame between the disk and seed meter housing.
- If your planter is old or has planted a lot of treated seed, do not expect to go directly to the field. It can take some time to clear rust and seed treatment buildup. Also, if force is applied to loosen the hub, parts can be broken requiring replacement parts. If the planter is new or recently overhauled, this setup can take just a few minutes.
- Check for other leaks from where the seed box attaches to the meter housing, where the vacuum brush clip attaches to the housing, and where the vacuum baffle is held to the housing. The best solution is a small application of silicon.
- Rough fields and high speeds may cause overfilling of the meter.
- There is usually a small amount of leakage past the disk, even while running low air.
- All of the factors above can affect your actual seeding rate in the field. Always take time to double check and verify your seeding rates as you plant and especially when you start.
- **Start verifying your rate by using a minimum known amount of seed to start planting, i.e., one or two bags before filling the planter.**
- Continue to monitor seeding rates to gain more and more confidence that there are no problems.

Monosem NG Plus Planter Setup:

- DC144-08 Plate
- Light vacuum setting

When selecting a Monosem plate, check to get as many cells on the plate as possible, even higher than 144 if possible. Because a Monosem can actually singulate sesame seed, the plate must turn at extremely fast speeds when having a lower cell count to the plate. A 72 cell plate restricts planter traveling speeds to below 2.5 mph. At high plate speeds, sesame are cut in half by the brass seed scraper and sucked into the cell causing cell blockage by the vacuum. There is no mechanism to remove the blockage and soon all cells can be blocked.



Photos 17-18. Nearly all planters can be adjusted to plant sesame in many row spacings, conventional to no-till, beds or flat.



CNH AMS 1200

To date, there is little experience, but the CNH AMS 1200 was used in 2009 with farmer-made plates. Talk to your equipment dealer for ordering custom made plates at least 45 days ahead of your intended planting date. One West Texas producer modified his meter housing to contain the "JD Knocker Assembly" #AH129125 for use with other small seed crops.

New Kinze –EdgeVac

To date, the new Kinze vacuum planter has not been used to plant sesame. Contact your equipment dealer and SESACO representative early to investigate a suggested setup.

Air Planters

IH Drum Planting system

- IHC part # 1546936C1 "Small seed drum".
- Must carefully shrink vent holes by hammer blows.

- There have been mixed results because it is difficult to plant enough seed and requires a slow planting speed (2 MPH works best).

White. In 2007, a White planter was successfully used. The producer used a die cast grinder with a thin grinding wheel to make notches in a blank seed plate. The plate contained 45 notches equal to the number cells in a JD vacuum plate. Manufacturers will offer assistance to growers.

Plate Planters

Accurate 2 piece plastic plate sets for IHC and John Deere planters can be ordered from: Lincoln Ag-Products Company, Lincoln, Nebraska, at (402) 464-6367, lincolnagproducts.com. These compensate for false bottom wear and provide good seed control.

John Deere 71 flex, 50, 60, 80, 6100, plate style MaxEmerge, and other older JD plate style planters: Lincoln Ag Products part # B-Sorg 00-30 Plate, BFR-1 Ring.

International 186, 386, and older units: Lincoln Ag Products part # C-Sorg 00-30 Plate, CFR-1 Ring.

A red "Star Knocker" #CSK-1 helps these plates avoid seed damage.

Hints to control leakage and grinding seed:

- A hollow 1" roll of duct tape, sticky side out, 3 or 4 places on your steel false bottom "springs" the plastic plate set upwards, stopping leakage over the plate. Test plate rotation - clear any binding.
- Some producers have used weather striping instead of duct tape.

Cup or Bowl Meters

John Deere 80: "Low rate sorghum attachment", JD part # B31298 Feed Cup Spacer, B31205 32 Cell Feed Cup, B31300 Thrust Washer.

John Deere bowl style dispenser MaxEmerge: JD part # A25081 Shim, A36323 Plate, and AA25319 bowl set.

If you have to grind off 2 of the drive 'dogs' of the JD plates, do not grind any deeper than necessary.

Drill Planting Equipment

In General

Again, narrow drill spacing (below 15") has not worked reliably and only resulted in higher planting seed rates and cost. Many drills can be set with various configurations. The most common is covering every other meter of a 7.5" drill to make 15" rows. 6" drills cover two out of three meters to make 18" rows. In 2007, a 10" drill was configured with two meters open and two meters closed. This made a 30" middle that allowed the producer to cultivate once

and spray a grass herbicide by ground. Another spacing that will be tried in 2010 is to cover every third row of a 7.5" drill.

Box Drills

Drills must have the ability to meter seeding rates to 25-35 seeds per foot without grinding seed. Check metering cups for proper placement to have equal openings. Use the narrowest one to calibrate.

A starting point for the proper settings is to use the flax setting and compare to the pounds of sesame desired. Remember if you are covering meters to get wider row spacing, divide by the percentage of openers remaining open.

- Example 1: A 7.5" drill with every other meter covered to achieve 15" spacing equals 50% open meters. $5\text{lbs/ac} \div 0.50 = 10\text{lbs/ac}$. Start calibrating with the flax setting at 10lbs/ac.
- Example 2: A 6" drill with two of three meters covered to achieve 18" spacing equals 33% open meters. $5\text{lbs/ac} \div 0.33 = 15\text{lbs/ac}$. Start calibrating with the flax setting at 15lbs/ac.

Air Drills

John Deere 1990CCS drills have become popular in sesame. To plant sesame you will need the Black 16mm wide - low rate meter wheel. Be sure to use the required spacers with this meter. The input sprocket or drive sprocket should be the 19 tooth, low range sprocket. The transmission should be set between 7 to 10 for single rank planting. Be sure to verify this rate by measuring the circumference of the drive wheel and comparing the number of seeds captured from a tube per distance the wheel would have traveled as it is turned. This number should be 2 to 3 seed per inch. After this is done another rate verification check can be done as instructed in the owners manual by capturing seed from a tube as the drill travels a measured 400 ft.

JD 1910 Commodity Air Carts have been used to seed thousands of acres. Use the fine seed meter (yellow and order from your dealer way in advance of the planting season). To calibrate the air cart, follow the operator's manual for standard calibration test. Conduct a stationary test to get within range of the proper calibrated setting and then do an in-field calibration of at least 2,000 ft to accurately set the planter.

Various setups with the air cart and drill can accomplish the same results. In this case, half of the meter is shut off, and the other half is directed to only the front gang of a 1890 No-till Air Drill. It is easier to calibrate the drill with both halves of the meter open,

and then divide the determined metering volume in half and close the gate to one half of the meter.



Photos 19-20. Modern drills do an excellent job of planting sesame in no-till and conventional till, but initial care is essential because sesame is not as easy to plant as wheat.



Great Plains No-till Air Drills have been used to plant in 15" row spacing. A vented "Y" was used to connect air hoses at the planting unit. Be sure to consider half the initial setting compared to flax when seeding in this manner. If the desire rate is 4lbs/ac of sesame, the meter should be set on 2lbs/ac of flax.

Drill Seeding Units

JD 90 Series Openers are excellent for seeding a firm seedbed, but in softer soils, the cast iron closing wheel moves too much soil on top of the seed.

Double disk openers are great. There should be minimal compaction over the seed line.

Hoe drills can be used with modifications since they tend to mix dry dirt with the seed. By adding a 2" extension on each side of the tube, the dry dirt can be kept out until the seed falls on to the firm, moist seedbed.