Capacidad de Campo

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Cortamalezas

w = 180 cm , Distancia = 35 m , A = 525 m, t_T = 8.58 min, Tiempo de giros: 111.51 seg = 1.86 min , t distancia = 43.49 seg = 0.72 min , v teórica = 3 km/h , v real = 2.9 km/h , w_t = 1.9 m

Ca_t = $\frac{v*m*nf}{10}$ = $\frac{3km/h*1.9m*1}{10}$ = 0.57 Ha/h
V = $\frac{d}{t}$ = $\frac{35m}{43.49seg}$ X $\frac{1km}{1000m}$ X $\frac{3600seg}{1hora}$ = 2.9 km/h
$t_e = \frac{t_T}{kW}$
w = 180 cm X 9 (pasos) = 1620 cm , Ancho Área = 1500 cm
1620 - 1500 = 120 $\rightarrow$ 120/9 =13.33 cm
180 cm = 100%
13.33 cm = ?
$7.4\% \rightarrow$ 100% - 7.4 % = 92.6% = .93 (kw)
t_e = 8.58 min / 0.93 = 9.2 min
$nf = \frac{t_T}{t_e+t_h+t_a} = \frac{8.58min}{9.2min+1.86}$ = 0.78
$Ca_{real} = \frac{2.9km/h*1.8m*0.78}{10}$ = 0.41 Ha/h

Desbrozadora

w = 220 cm, A =625 m , $t_T = 8.25min$, Tiempo Giros = 106.4 seg = 1.8 min, Distancia = 35 m , t distancia = 45.5 seg , w teorica = 223 cm, v teorica = 3 km/h

$Ca_t = \frac{3km/h*2.23m*1}{10}$ = 0.67 Ha/h
V = $\frac{35m}{45.5seg} * \frac{1km}{1000m} * \frac{3600seg}{1hora}$ = 2.77 km/h
w = 220*8 = 1760 cm
Ancho área = 1500 cm
$\frac{1760-1500}{9}$ = 28.89 cm

220 cm $\rightarrow$ 100%

28.89 $\rightarrow$? = 13.13 %

100% - 13.13% = 86.87% = 0.86 kw

$$t_e = 8.25min/0.86 = 9.59min$$

$$n_t = \frac{8.25min}{9.59min+1.8min} = 0.72$$

$$Ca_real = \frac{2.77km/h*2.2m*.72}{10} = 0.44Ha/h$$

Arada de Disco

v teórica = 4 km/h , w teórica = 96 cm, A = 450 m, Tiempo Giros = 1.86 min , t distancia = 29.64 seg = 0.41 min , Distancia = 30 m , w = 80 cm

$$Ca_t = \frac{4km/h*0.96m*1}{10} = 0.38Ha/h$$

$$t_T = \frac{A}{Ca_t} = \frac{0.052ha}{0.38ha/h} = 0.14h = 8.3min$$

$$t_e = t_T$$

$$nf = \frac{8.3min}{8.3min+0+1.86min} = 0.82$$

V = $\frac{30m}{24.64seg} X \frac{1km}{1000m} X \frac{3600seg}{1hora} = 4.38km/h$

$$Ca_{real} = \frac{4.38km/h*0.8m*0.82}{10} = 0.27Ha/h$$

Rotavator

w teorica = 182 cm , w real = 245 cm , distancia = 30 cm, A = 450 m , v teórica = 3 km/h . $t_t = 5.48min$, tiempo giros = 1.86 min , t distancia = 41.16 seg = 0.68 min , v real = 2.63 km/h

$$Ca_t = \frac{3km/h*1.82m}{10} = 0.55Ha/h \; t_e = t_T$$

nf = $\frac{5.48min}{5.48min+0.68min} = 0.89$

$$Ca_{real} = \frac{2.63km/h*2.45m*0.89}{10} = 0.57Ha/h$$

Arado de Cincel

w real = 180 cm , v teórica = 2 km/h , v real = 2.61 km/h , t Total = 2.88 min , w teórica = 160 cm, t giros = 35.86 seg = 0.6 min

$$Ca_t = \frac{2km/h*1.6m}{10} = 0.32Ha/h$$

$$t_e = t_T$$

$$nf = \frac{2.88min}{2.88min+0.6min} = 0.83$$

$$Ca_{real} = \frac{2.61km/h*1.8m*0.83}{10} = 0.39Ha/h$$

Rastra de Discos

w teórico = 170 cm, t giros izq = 0.65 min , t Total izq = 2.61 min , w real izq = 162 cm , v real izq = 5.7 km/h , vel teórica = 3 km/h , w real cent = 1.63 m , v real cent = 5.56 km/h , t giros cent = 0.33 min , t Total cent = 1.34 min

$$Ca_t = \frac{3km/h*1.7m}{10} = 0.51ha/h$$
$$t_e = t_T$$
$$nf_{izq} = \frac{2.61}{2.61min+0.65min} = 0.8$$
$$nf_{cent} = \frac{1.34min}{1.34min+0.33min} = 0.8$$
$$Ca_{realizq} = \frac{5.73km/h*1.62m*.8}{10} = 0.74ha/h$$
$$Ca_{realcent} = \frac{5.56km/h*1.63m*0.8}{10} = 0.73Ha/h$$

Sembradora de Surco

t Total = 6.27 min, t giros = 3.45 min, w real = 3.2 m, vel teórica = 4 km/h , v real = 3.34 km/h , w teórica = 4.1 m

$$Ca_t = \frac{4km/h*4.1m}{10} = 1.64Ha/h$$
$$nf = \frac{6.27min}{6.27min+3.45min} = 0.64$$
$$Ca_{real} = \frac{3.34km/h*3.2m*0.64}{10} = 0.68Ha/h$$

Aspersora

w teórica = 10 m, w real = 10.52 m , t Total = 1.44 min , t giros = 35.57 seg = 0.6 min , v teórica = 3 km/h , v real = 1.93 km/h

$$Ca_t = \frac{3km/h*10m}{10} = 3Ha/h$$
$$nf = \frac{1.44min}{1.44min+0.6min} = 0.7$$
$$Ca_{real} = \frac{1.93km/h*10.52m*0.7}{10} = 1.4Ha/h$$

Segadora

w teórica = 250 cm , w real = 257 cm , t Total = 138.98 seg = 2.32 min , t giros = 109 seg = 1.82 min , v teórica = 2 km/h, v real = 1.55 km/h , y = 8.5 kg/3.38 m^2

$$Ca_t = \frac{2km/h*2.5m}{10} = 0.5ha/h$$
$$nf = \frac{2.32min}{2.32min+1.82min} = 0.56$$
$$Ca_{real} = \frac{1.55km/h*2.5m*0.56}{10} = 0.22Ha/h$$

$$\frac{8.5kg}{3.38m^2} X \frac{10{,}000m^2}{1Ha} X \frac{1Ton}{1000kg} = 25.15Ton/Ha$$
$$CC_m = \frac{1.55km/h * 2.57m * 25.15Ton/Ha * 0.56}{10} = 5.6Ton/h$$

Enfardadora

w real = 178 cm , v teórica = 2 km/h, tiempo perdido = 110 seg = 1.8min , t_T = 5.13 Min , wt = 180 cm

$$Ca_t = \frac{2km/h * 1.8m}{10} = .36Ha/h$$
$$nf = \frac{5.13min}{5.13min + 1.8min} = 0.74$$
$$Ca_{real} = \frac{1.67km/h * 1.78m * 0.74}{10} = 0.21Ha/h$$
$$CC_m = \frac{1.67km/h * 1.78m * 25{,}15Ton/ha * 0.74}{10} = 5.53Ton/Ha$$

Sembradora al voleo

t Total = 3 min, V Teórica = 7.5 km/h, v real = 6.65 km/h , wt = 16m, wreal = 16m

$$Ca_t = \frac{7.5km/h * 16m}{10} = 12Ha/h$$
$$nf = \frac{3min}{3min} = 1$$
$$Ca_{real} = \frac{6.65km/h * 16m}{10} = 10.64Ha/h$$