

Potato Production & Distribution Systems in Ireland

Impacts on Ecology & Environment

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a frightening great deal about potatoes ...







Organic potato system:

- •Limited, small scale
- •Total organic production <1% UAA
- •Potatoes only ~100ha
- •~30 registered growers
- •Insufficient production to
- meet market demands
- •Majority unprocessed ware
- •Growing sector

























































tion Potential ?			
(means +/- SD)	R1 - Infield	R2 - Infield	R3 – Infield
Abundance, individuals/m2	481.07 (+/- 329.00)	131.73 (+/- 137.36)	62.40 (+/- 68.32)
Live biomass, g/m2	68.19 (+/-50.66)	17.13 (+/-16.33)	11.78 (+/-13.54)
Range of arable values in	50-500/m2 abundance, 10-100g/m2		
Ireland Abundance, individuals/m2	284.80 (+/- 180.33)	151.47 (+/-121.53)	196.27 (+/- 198.41)
Live biomass, g/m2	52.91 (+/-35.93)	29.33 (+/- 26.00)	38.70 (+/-40.61)
Range of pasture values in	500-1000/m2, 100-200g/m2		
	(means +/- SD) Abundance, individuals/m2 Live biomass, g/m2 Range of arable values in Ireland Abundance, individuals/m2 Live biomass, g/m2 Range of pasture values in	Range of arable values in SU R1 - Infield Abundance, individuals/m2 481.07 (+/- 329.00) 481.07 (+/- 329.00) Live biomass, g/m2 68.19 (+/- 50.66) 68.19 (+/- 50.66) Range of arable values in 50-50 Abundance, individuals/m2 284.80 (+/- 180.33) Live biomass, g/m2 52.91 (+/-35.93) Range of pasture values in 51	Range of arable values in S2.900/(+/-329.00) R1 - Infield R2 - Infield Abundance, individuals/m2 481.07 (+/-329.00) 131.73 (+/-137.36) Live biomass, g/m2 68.19 (+/-50.66) 17.13 (+/-16.33) Range of arable values in 50-500/m2 abundance, 10-10 Abundance, individuals/m2 284.80 (+/-180.33) 151.47 (+/-121.53) Live biomass, g/m2 52.91 (+/-35.93) 29.33 (+/-26.00) Range of pasture values in 500-1000/m2.100-2009/m

Earthworm Depletion Potential (EwDP) = $R_{ref} - R_i$

R_{ref} is the worm biomass of **reference resource**

(top observed range in Irish arable in t/ha: $100g/m^2 = 1t/ha$)

 R_i is the worm biomass of the particular type of cultivated land (potatoes)

Using e.g. R3 sampling values:

conventional sites EWDP = $\operatorname{Rref} - \operatorname{Ri} = 1t/ha - 0.11t/ha = 0.89t/ha$ organic EWDP = 1 - 0.38 = 0.62t/ha

Potentially add factors for number of species, soil type, hedgegrow area...









- room for improvement in both systems in terms of environmental performance – higher variability in organic
- Despite higher inputs levels in many areas high yields give conventional farms a lower impact in many categories per kg
- · However organic farming tends to have lower per ha impacts
- Energy use lower per kg in conv whole system, but higher in ag production only; overall lower per ha in organic
- Life stages with greatest contribution: agricultural production in both systems and within that fertilisers production and emmissions from application greatest contribution
- GWP and AP biggest impact categories in both, again contribution of fertilisers NB, 40% + of agri prod stage



