(Giovanni Quaranta)

Pasture manuring (application of manure from shelter) ( )

Application of manure in valuable pastures to increase grass recover and reduce shrub encroachment

This is a technique used on animal husbandry farms with either deep litter housing systems (sheep and goat manure) or manure heaps (cattle manure). Manure spreading is carried out twice a year but on different land.
In the case of deep litter housing systems fresh straw is continuously spread over soiled litter in layers. After around six months the deep litter bedding is removed and mechanically spread on pasture lands or arable land.
In the case of cattle farms animal waste is transferred daily to the farm's manure heap where it is left to decompose for at least a year. Also in this case straw is added for the animals' comfort and hygiene and is added to the manure heap together with faeces.
Once the manure is ready it is spread on areas of land which can be farmed using mechanical means In the case of arable cropland manure is immediately buried by ploughing, in the case of pasture land it is spread at the beginning of autumn and left on the surface without ploughing (if not occasionally a harrow might be used to break down the manure to increase even distribution and penetration).

Purpose of the Technology: Increase growth of palatable species, increase value of grazing area

Natural / human environment: The technique is an agronomic measure which is applied on meadows, pastures and cropland in an area with a sub-humid climate, moderate scope and shallow clayey soil.
As to the context of production, it is characterised by a medium level of mechanisation (only the most demanding operations are carried out using mechanical means), the production system is essentially mixed, a small part is destined for personal consumption whilst the bulk of production is destined for local markets. The property is predominantly privately owned but also includes some public land, especially in the case of pasture land. Most farms in the area are livestock farms whilst the agricultural component is destined exclusively for private consumption.

: Castelsaraceno, Basilicata,

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: (approx. 0.1-1 2)

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: 50 ( )

(> 50)

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(Giovanni Quaranta)

(Giovanni Quaranta)

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/ - Agro-pastoralism ( )

: 1

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- Bs: / , Bl:

SLM

- **SLM**

- A2: /

- **euro**
- ( ) 1 USD = 0.74 euro
- 81.08

Assuming that the production of manure (as described above) happens on farm, the critical point of the application of the technique is the availability of equipment for spreading. The largest farms buy the equipment spending from 35,000 to 40,000 euro depending on the machines' working capacities. The smaller farms (which represent the vast majority) rent this equipment (from third parties) twice a year at an overall cost of around €70 an hour.

n.a.

1. Emptying of deep litter bedding or manure hap (/ : 2 per year)
2. Spreading of manure on 3 hectares of pasture land (/ : 2 per year)
3. Hire of manure spreader (/ : 2 per year)

			(euro)	(euro)	%
Emptying of deep litter bedding or manure hap	ha	1,0	324,3	324,3	100,0
Spreading of manure on 3 hectares of pasture land	ha	3,0	972,9	2918,7	100,0
Hire of manure spreader	ha	1,0	283,78	283,78	100,0
				3'526.78	
				4'765.92	

< 250
251-500
501-750
751-1,000
✓ 1,001-1,500
1,501-2,000
2,001-3,000
3,001-4,000
> 4,000

✓

68% in winter and 15% in summer
Thermal climate class: temperate

(0-2%)
✓ (3-5%)
✓ (6-10%)
(11-15%)
(16-30%)
(31-60%)
(>60%)

✓
✓

0-100
101-500
501-1,000
✓ 1,001-1,500
✓ 1,501-2,000
2,001-2,500
2,501-3,000
3,001-4,000
> 4,000

(0-20)
✓ (21-50)
✓ (51-80)
(81-120)
(> 120)

( )
/ ( )
(,)
✓ / ( )

(> 20)
/ ( )
(,)
/ ( )

(>3%)
✓ (1-3%)
(<1%)

< 5
✓ 5-50
> 50

✓
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( )
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✓
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( )
( )
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✓

10%
10-50%
✓ 50%

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(/
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✓ /

✓
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SLM

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< 0.5
0.5-1
1-2
2-5
5-15
15-50
50-100
100-500
500-1,000
1,000-10,000
> 10,000

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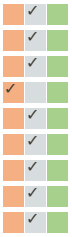
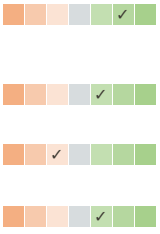


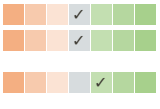


SLM: 8t/ha
SLM: 11t/ha

The quality of the fodder increases due to the increase of protein content.

Net return from this activity increases due to yield increases.

Improved livelihoods and human well-being



decreased increased

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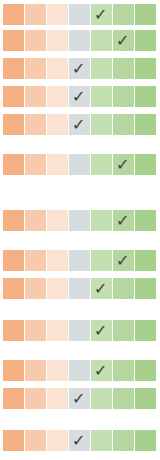
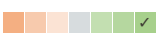


Benefits from soil ecology



decreased increased

The application of manure increases the soil organic matter content. As The application of manure increases the soil organic matter content. As well known the increases in

organic matter content turns in important benefits from the soil ecology.

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The application of manure due to its beneficial effects on soil parameters, allows to keep grass and crops healty along the year so protecting soil. Poor soils , without manure application, can not sustaine grasses all over the year making it at erosion

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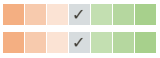

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1-10%
11-50%
> 50%

?

0-10%
11-50%
51-90%
✓ 91-100%

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- It’s the only natural way to fertilize pasture and croplands. This avoids the use of chemical fertilizers and external inputs. This also provides great beneficial effects on the milk/meat quality through better grass.

  How can they be sustained / enhanced? Providing subsides both to machinery and organic production

/ / :

- This is considered as a heavy work (mainly dirty). The use of machinery is the only way to implement it No way

/ / :

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- The farms try to concentrate their activities and so they try to improve local (close by) pastureland. The technology increases the grass productivity and so helping farms to reduce time of grazing.

  How can they be sustained / enhanced? Supporting ad hoc machinery and equipment.

- The technology is difficult to apply on very steep slope lands No way

Editors

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: 1 2014 : 17 2019

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https://qcat.wocat.net/km/wocat/technologies/view/technologies_1209/

SLM

- University of Basilicata -
- Catastrophic shifts in drylands (EU-CASCADE)