



## Crumb Rubber Project

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Research was initiated in autumn of 1991 at Michigan State University to determine the effectiveness of crumb rubber as a soil amendment to reduce compaction and improve aesthetics in high use turf areas. Results compiled over the last two years indicate that crumb rubber is an ideal amendment for highly trafficked areas, in particular high school athletic fields. When tilled, best results revealed a 20% volume to volume amount of rubber incorporated into the soil at depths of either 3 or 6 inches. However, a major drawback was the four to six month regrowth period.

A cultivation (core cultivation) and topdressing study was initiated in June and July '93 to study less disruptive methods for incorporating crumb rubber into the soil profile. Through this research, we will determine if rubber can be successfully incorporated at a single application through cultivation or if a two to three year program would be necessary through topdressing. For either program to be effective, the rubber starts off at the surface but must be able to move through the soil profile. Therefore, two different particle sizes are being tested: a large, 1/4" size and a blend of smaller particle sizes, 10/20 mesh size. The 1/4" size would seem more applicable to cultivation while a 10/20 mesh size is more of a topdressing material. Applications of traffic and wetting agents are being tried to facilitate movement of rubber into the soil profile. The cultivation study is a 2x6 randomized complete block design while the topdressing study is a 2x5 randomized complete block design (Fig.1).

Special thanks goes to The Michigan Turfgrass Foundation (MTF) for funding our project and to Environmental Rubber Recycling, Inc. for providing rubber for this research.

**Figure 1**

**Topdressing Experiment**

1A	4B	Check	1A	2A	Check
Check	3A	3B	2A	4B	3B
3B	2A	1B	4B	Check	4A
2B	Check	4A	3A	1B	1A
4A	1B	Check	2B	3A	2B

Treatments    A - 1/4" particle size            1 - 1/21" rate  
                   B - 10/20 mesh size            2 - 1/10" rate  
   3 - 1/8" rate  
   4 - 1/4" rate

**Cultivation Study**

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1	B	3
F	2	E
4	4	6
A	E	D
C	F	2
6	3	5
2	6	A
D	D	F
5	1	1
E	A	C
3	5	B
B	C	4

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**Treatments:** 1 - 6 10/20 mesh size  
A - F 1/4" size

- 1 or A - Core 5x + topdress + drag
- 2 or B - Core 10x + topdress + drag
- 3 or C - Topdress rubber between aerifying 5x
- 4 or D - Topdress rubber between aerifying 10x
- 5 or E - Till rubber 3" and sod
- 6 or F - Check (aerified 5x ; no rubber)

**\*\* Drawings not to scale**