

# Recipe For Good Greens

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The recipe for good greens first published in the September, 1960, issue of the USGA Journal, was put together under the direction of experts who used sound research techniques and experimentation over a period of 14 years. In 1960 what was considered to be an almost foolproof method of constructing a green was presented by the USGA, but even Betty Crocker cake mixes can't give you a good product if you don't follow the directions.

Too often greens have been built simply to conform to the profile shown in the USGA bulletin, but without following the detailed specifications recommended. Some of these greens hold up well, and others don't. It would be nice to take credit for those that work and claim those that don't were improperly constructed.

The USGA method stands on its own merit. When it is followed in detail, it will result in a good green. True, a properly constructed green may not live up to the owner's expectations, but then there probably never will be a green that, besides holding a shot that screams in on a low trajectory and without backspin, also allows not more than 18 putts in one round.

Please note also that the title of the USGA bulletin is "Specifications for A Method of Putting Green Construction." We emphasize that there are many other satisfactory methods, but this is the only type that deals in known quantities.

For years, people talked about 3-2-1

mix or 1-1-1 mix or some other such figure that indicates how the components of sand, soil and organic matter were mixed. I doubt that this information has any value unless it is coupled with the classification and analysis of the sand, soil and organic material used. Then, in order to get the same type of green as the other fellow, you have to use exactly the same materials in exactly the same way.

Because different soils possess different properties and seldom act in the same manner when mixed for green construction, it is important to know something about the soil as well as the other materials. By measuring the physical properties of a soil mixture and subjecting it to certain controlled tests, it is possible to "manufacture" the best possible medium on which to play golf and in which to grow turf with the natural materials available.

This does not say that all soil mixtures produced by this method are equal and one is as good as another, but rather that all soil mixtures must possess approximately the same physical properties within certain allowable tolerances. To have the best end product, use the best materials available.

Now let me dispel the all too common belief that the soil mixtures advocated for the USGA method are too high in sand content. I have seen acceptable golf turf grown on what appeared to be 100% sand, and one very well-known course grows turf on a

mixture of pure sand and organic matter (peat). Although the greens in both cases are quite troublesome and we would never encourage such extremes, it proves that it can be done.

Because too much sand causes problems in setting cups and may not hold sufficient moisture or nutrients without frequent applications, a soil mixture should contain only enough sand to achieve the necessary porosity after compaction. Under the USGA system of testing, almost no two samples will require the same percentage of sand since the sand content of the soil sample and the particle size of pure sand will vary. Therefore, any mixture may contain a high percentage of sand but the percentage is never too high.

Only if you plan to sacrifice good drainage, good aeration, deep rooting, protection against diseases, protection against overwatering, protection against salt problems, a putting surface which holds a shot without being overly wet and one that resists pitting by golf balls — only if you sacrifice those properties in the interest of easy cup setting because the soil holds together, and an insignificant saving on fertilizer can you say that the sand content is too high.

Another misconception about this type of green is that there are some short cuts which can be taken to save money. First, the \$100 fee for the necessary analysis seems high since most people are accustomed to having soil tested free or for a nominal charge of \$1. or \$2. per sample. Joe Doe comes by the course and says he can give you all the testing you need for \$10., or you bypass the testing altogether and mix up what appears

to be a good soil mixture and go from there.

Well, please don't call the end product a USGA green, good or bad. You may be fortunate enough to get a green that works well and actually save about \$100, but your chances are just about as good as they are for coming home rich from Las Vegas.

The USGA Green Section can provide the testing service for you through a contractual arrangement. Considering the time required for the analysis and the equipment necessary, the cost is reasonable and it may well be one of the cheapest investments your club will ever make.

If you have tried to locate good topsoil or good sharp sand lately, you know that these are scarce and bring premium prices. After getting bids on the desirable materials in the area, budget-minded club officials may recall that the greens they have played on for the last 40 years were just scraped up out of the fairways and were constructed for a fraction of the proposed cost of the new greens. What they don't recall is how little traffic the greens could withstand, what a headache the greens have been to the superintendent, and how difficult it is to make a putt through a puddle of water three inches deep after a light rain.

There is just no alternative. Good construction costs money and the short cuts are risky. Good construction may cost a little more initially but it pays big dividends in the long run. Buy the best material your club can afford, and if your members are not gamblers at heart use the USGA recipe for good greens and pay attention to details in the specifications. When playing the game as well as constructing greens, "follow through."