NEW
HOLE-IN-1
PUTTERS
for miniature golf courses!

Longest Life—Lowest Cost
Now—a new, inexpensive quality putter line from Sportsman Golf—
“Hole-in-One” PUTTERS for miniature golf courses! Built to take the roughest
punishment, designed for maximum putter life! Strong, sturdy, accurate . . .
lowest cost. 35” length in right or left hand and two-way styles.
SPORTSMAN GOLF CORPORATION
2020 Indian Boundary Dr., Melrose Park, Ill.

“framework” or “skeleton” that hold the nitrogen
in a soluble form ready to go into solution and
to feed the plant. Without the framework you
would have 100-0-0 which is elemental gaseous
nitrogen, almost completely useless to your turf.
Efficiency would be a fraction of one per cent.
Cost would be astronomical. You would have
great difficulty in applying it to your turf.

Now let’s look at 38-0-0, the familiar insoluble
ureaform that you are using. The N content is
higher but it is still a long way from the 100-0-0
you speak of. This material has no filler. It, too,
must have a skeleton to carry the N in a slow-
release form just as your body must have a
skeleton.

Unlike the simple inorganic soluble molecule
of sulfate of ammonia, ureaform is a mixture of
complex molecules of various sizes. All ureaform
molecules are made up of hydrogen, carbon,
oxygen and nitrogen. The carbon, hydrogen and
oxygen are all a part of the framework. Carbon
furnishes energy to microorganisms that release
N from the molecule. Oxygen is essential to the
life and health of the soil microflora. Hydrogen
together with exchange to release other
nutrient elements to the plants.

Thus, you see, every part of the ureaform
molecule is useful. A simple molecule might be
shown thus:

\[
\begin{align*}
H_2C & \rightarrow NH-CO-NH_3 \\
& \rightarrow NH-CO-NH_2 \\
\end{align*}
\]

From here they become increasingly complex.
The case of the natural organic, 5.5-4.0, fol-
lowes the same general pattern but is not so
easily explained because it is a variable ac-
cumulated by-product of a mixture of materials
that have been used before for other purposes.
The nitrogen is carried in a framework of lignins,
cellulose, waxes, inorganic salts, and organic
colloids, all of which act more or less as a
framework for the nitrogen. Many of the
soluble materials have been carried away in the
water processing.

Fillers sometimes are used to make up a
mixed fertilizer to equal a ton. More generally
these are called “conditioners” which help the
physical nature of the blend. Single ingredients
as we have discussed never contain fillers or
conditioners. The nitrogen is carried in an es-
sential molecular skeleton or framework.

Allen Co. Adds Distributor
Paul E. Allen Co., Palm Harbor, Fla., has
added Illinois Lawn Equip. Co., Orland Park,
III., to its list of distributors of True Organic
fertilizer.