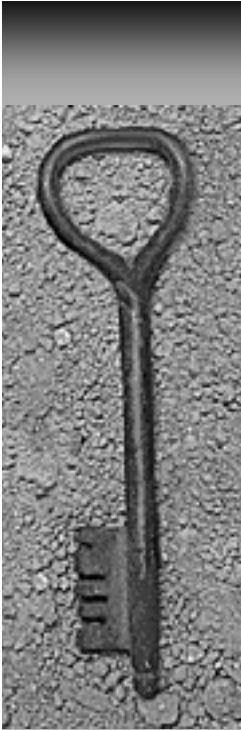




# ASTM Biodiesel Update

June 8, 2005



# ASTM Current Status

- ◆ ASTM D 6751 is the approved standard for B100 to be used for blending in the US
  - Some use it as standard for B100 use
  - Wording in D6751 allows for higher blends
  - ASTM has not, however, approved D6751 for B100 use—only for up to B20 in the final blend
- ◆ ASTM D 6751 has two grades
  - S500
  - S15



# ASTM Biodiesel Ballots

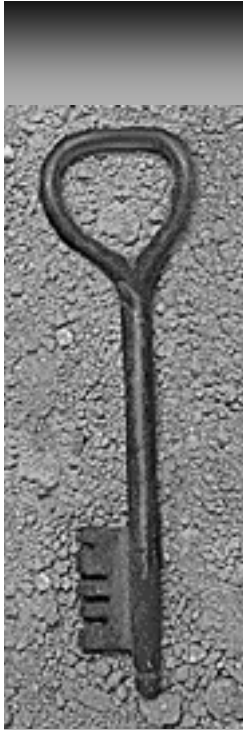
- ◆ Improvements and changes to D 6751
- ◆ Incorporation of up to 5% biodiesel into the petrodiesel ASTM standard D 975
- ◆ A new stand alone specification for a finished B20 blend
  - This will be a new number
- ◆ Specifications for B6 to B19, B21 to B99, B100 lower priority, no efforts until above is completed



# Balloted Changes to D 6751

## ◆ Modify:

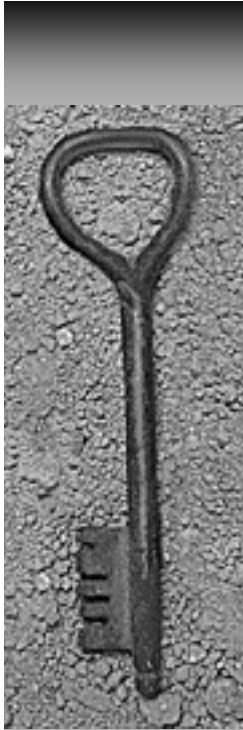
- Scope of standard to allow blending of biodiesel with petrodiesel not meeting lubricity and cetane values prior to blending. Finished blends must still meet D 975 values.
- Acid value to maximum 0.5 mg KOH/gm (from 0.8)
- Viscosity value to maximum of 5.0 cp (from 6.0)



# Balloted Changes to D 6751

## ◆ Add:

- Total combined Calcium plus Magnesium content of 5 ppm maximum
- Total combined Sodium plus Potassium content of 5 ppm maximum
- Oxidation stability:
  - **Either** Rancimat, EN 14112, 1.75 hour minimum, **or**
  - ASTM D 2274, 95C 16 h, w/glass fiber filters only, 10 mg/100 ml maximum
- Linolenic acid concentration of 12% maximum



# Balloted Changes to D 6751

## ◆ **Replace:**

- Water and sediment, ASTM D 2709, 0.05% volume maximum

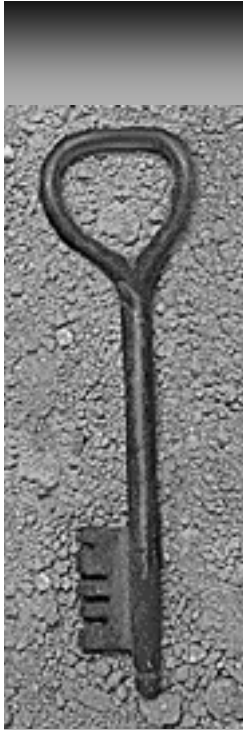
## ◆ **With:**

- Water content using Karl Fischer Moisture of 500 ppm maximum
- Total particulate contamination of 24 mg/kg



# ASTM Update—B5 in D 975

- ◆ Balloting change of scope for D 975 to allow up to 5% biodiesel to be included
  - Sets precedent for ‘other non-petroleum’ blend stocks inclusion into D 975
- ◆ Use of European blend level method while ASTM finalizing better one
- ◆ Biodiesel must meet D 6751
- ◆ Finished blend must meet existing D 975
- ◆ No stability test method since one being incorporated into D 6751



# ASTM Update—B20 Standard

- ◆ D 975 values, no distinction between #1/#2
- ◆ Diesel meet D975 prior to blend except:
  - Cetane, sulfur, aromatics, lubricity
- ◆ Biodiesel meet D 6751 prior to blending
- ◆ Distillation increase of 5 degrees C
- ◆ Addition of thermal stability
- ◆ Addition of acid number (0.3 max)
- ◆ No separate stability test at this time
  - Acid number is surrogate
  - Stability controlled at B100 level
  - Stability TF was split on having a separate B20 stability spec, so this ballot will root out negatives